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“Megatrend Penduduk dan Dinamik Keluarga: Cabaran untuk Masa Depan Lebih Berkualiti”

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19-21 November 2025

Eastin Hotel, Petaling Jaya,
Selangor



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**PROSIDING
PERSIDANGAN KEPENDUDUKAN
KEBANGSAAN 2025 (PERKKS25)
PROCEEDINGS
*NATIONAL POPULATION CONFERENCE 2025***

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LEMBAGA PENDUDUK DAN PEMBANGUNAN KELUARGA NEGARA

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Dasar dan Program Kependudukan dan Pembangunan, Merangkumi Perancangan Keluarga, Kesihatan Reproduksi, Pendidikan, dan Strategi Pengurangan Kemiskinan

002-001

HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH ACUTE CORONARY SYNDROME IN MALAYSIA: A SIMULATION STUDY

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ABSTRACT

Evaluating health-related quality of life (HRQoL) is crucial for understanding the impact of Acute Coronary Syndrome (ACS) on patients, yet there is not much research done in Malaysia in this field. This study used a simulated data technique to assess HRQoL among ACS patients receiving various treatments—percutaneous coronary intervention (PCI), coronary artery bypass graft (CABG), and optimal medical therapy (OMT). The primary objective was to examine the impact of these treatments on HRQoL and explore key factors influencing quality of life (QoL) over a six-month period. HRQoL was assessed using the EuroQol five-dimensional questionnaire at baseline, and at one, three-, and six-months post-treatment. The simulation technique involved estimating mean HRQoL scores for the CABG and OMT groups at unmeasured timepoints, using linear interpolation and extrapolation based on observed patterns in the PCI group. This method allowed for the generation of 100 synthetic responses for each treatment group at each timepoint, replicating the demographic distribution of ACS patients in Malaysia. Adjustments using the EQ-5D-5L value set specific to Malaysia were made to calculate utility values, ensuring that the simulated dataset accurately reflected the Malaysian context. Statistical analysis was conducted using longitudinal mixed-effects growth curve models to analyze both cross-sectional and longitudinal relationships between treatment modalities and HRQoL scores, which revealed significant effects of treatment type on HRQoL. The OMT group showed significantly lower HRQoL scores ($\beta = -0.07$, $SE = 0.03$, $p < .001$), and the PCI group had slightly higher scores ($\beta = 0.01$, $SE = 0.03$, $p = .01$) compared to CABG. Gender and age were not significant predictors of HRQoL where the p-values are 0.62 and 0.99, respectively. The findings highlight the importance of treatment choice in HRQoL outcomes for ACS patients in Malaysia, indicating that while demographic factors may not significantly influence HRQoL, the type of treatment does. The study demonstrates the value of simulation techniques in HRQoL research, providing a comprehensive understanding of HRQoL trends among Malaysian ACS patients.

Keywords: Acute Coronary Syndrome (ACS), Health Related Quality of Life (HRQoL), Longitudinal Mixed-Effects Models, Simulation Study.

1. Introduction

In the realm of cardiovascular health, Acute Coronary Syndrome (ACS) and ischemic heart disease are often discussed synonymously. ACS, characterized by atherosclerotic plaque formation in coronary artery walls, leads to restricted blood flow to the heart, manifesting symptoms like angina and myocardial infarction [1][2]. Globally, ACS stands as a prominent cause of morbidity and mortality. In Malaysia, ischemic heart disease remains the leading cause of death, underscoring the urgency of addressing ACS as a critical public health issue [3][4].

This research delves into the multifaceted dimensions of HRQoL among ACS patients in Malaysia, a topic that has not been extensively explored despite the high prevalence of ischemic heart disease and its associated risk factors like smoking, diabetes, and obesity [5]. Available treatments for ACS—Percutaneous Coronary Intervention (PCI), Coronary Artery Bypass Grafting (CABG), and Optimal Medical Therapy (OMT)—have demonstrated effectiveness in preventing mortality and myocardial infarction, yet their broader impact on patients' quality of life (QoL) remains underexplored, particularly in the Malaysian context.

Health-Related Quality of Life (HRQoL) has emerged as a vital measure in clinical research, emphasizing the need to assess the impact of chronic illnesses and their treatments beyond traditional clinical outcomes. The EuroQol 5-dimensional questionnaire (EQ-5D) is a health-status assessment tool that evaluates five aspects of general health: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression for HRQoL assessment, utilizing a validated utility scores system developed for the Malaysia [6].

The study aims to bridge the gap in localized research on HRQoL outcomes post-ACS treatment, emphasizing life quality aspects often overshadowed by clinical survival rates. The urgency of this research is highlighted by the National Health and Morbidity Survey (NHMS) 2019 report and Department of Statistics data, showing cardiovascular diseases as a leading cause of death in Malaysia [7]. The research objectives include assessing the impact of different treatment modalities on HRQoL, examining the influence of key demographic factors on HRQoL at various stages, and evaluating the efficacy of simulation methodologies in HRQoL research for ACS patients. The research hypotheses are as follows:

How does the choice of treatment (e.g., PCI, CABG, OMT) impact the HRQoL of patients with ACS in Malaysia?

H_0 : There is no significant difference in the HRQoL trajectories among patients with ACS in Malaysia receiving PCI, CABG, or OMT treatments.

H_a : There is no significant difference in the HRQoL trajectories among patients with ACS in Malaysia receiving PCI, CABG, or OMT treatments.

What is the key demographic factor that influence the HRQoL of Malaysian patients with ACS at the time of admission and during the follow-up periods of one, three, and six months?

H_0 : Demographic factor does not significantly influence the HRQoL of Malaysian patients with ACS at admission and during follow-up periods.

H_a : Demographic factor significantly influences the HRQoL of Malaysian patients with ACS at admission and during follow-up periods.

What is the efficacy of simulation methodologies in capturing the patterns of HRQoL in Malaysian ACS patients from admission to six months post-treatment?

H₀: There is no significant change in the HRQoL of Malaysian patients with ACS from admission to six months post-treatment.

H_a: There is a significant change in the HRQoL of Malaysian patients with ACS from admission to six months post-treatment.

This research holds significant importance in the Malaysian healthcare context, aiming to provide crucial insights into HRQoL among ACS patients and inform healthcare professionals and policymakers. It seeks to influence patient-centered care practices and policy formulation, considering the risk of significant adverse cardiovascular events and the cost-effectiveness of various treatments. The utilization of simulated data in this study addresses the practical challenges of data collection and sets a precedent for future healthcare research.

2. Related Works

HRQoL is a critical component of overall Quality of Life (QoL), especially significant in ACS. Studies by Owczarek [8], Gierlaszyńska et al. [9], and the guidelines provided by the EuroQol Research Foundation (2019) underscore the importance of this instrument in HRQoL research. These studies highlight EQ-5D-5L effectiveness in capturing the subtle yet significant variations in patient experiences, making it a valuable tool for both clinical research and practice.

Acute Coronary Syndrome (ACS), encompassing conditions like ST-Elevation Myocardial Infarction (STEMI) and Non-ST Elevation Myocardial Infarction (NSTEMI), significantly impacts public health in Malaysia. Studies by Barstow et al. [10], Azman & Ahmad [7], and data from the World Health Organization (2020) emphasize this unique demographic characteristic, underlining the need for tailored healthcare strategies and research that specifically address the Malaysian context. This demographic peculiarity not only influences the clinical management of ACS but also has broader implications for public health policies, preventive strategies, and resource allocation in Malaysia.

Expanding on the treatment options for ACS and their impact on HRQoL, the primary treatments include Percutaneous Coronary Intervention (PCI), Coronary Artery Bypass Grafting (CABG), and Optimal Medical Therapy (OMT). Research studies have highlighted the varying impacts of these treatments on HRQoL. As an interventional approach, PCI is significant for its minimally invasive nature, offering a favorable recovery profile. CABG, a more invasive surgical procedure, is typically indicated for complex or extensive coronary artery disease. Baron et al. [11] highlight the long-term HRQoL benefits of CABG, particularly in patients with multivessel disease, where the procedure can lead to substantial improvements in functional status and symptom relief. As the cornerstone of non-invasive ACS management, OMT involves a regimen of medications tailored to reduce cardiac risk factors and prevent disease progression. Sheikhgholami et al. [12] explain the role of OMT in stabilizing the disease course and maintaining HRQoL, especially in patients contraindicated for surgical interventions.

Simulation methodologies are increasingly being recognized for their pivotal role in HealthRelated Quality of Life (HRQoL) research. These techniques are particularly valuable in contexts where direct patient data collection is impractical or challenging. Notably, the works of NajeraZuloaga et al. [13] and Barbieri et al. [14] illustrate the effectiveness of simulation methods in modeling

HRQoL outcomes. Such methodologies allow for in-depth analysis and understanding of HRQoL impacts across different health scenarios, thereby facilitating a more comprehensive approach to patient care and treatment efficacy evaluation. The advancement of these simulation tools offers significant potential for enhancing HRQoL research, especially in the realm of chronic illnesses and complex health conditions.

Longitudinal studies are invaluable for comprehending the evolution and treatment response of Acute Coronary Syndrome (ACS). These studies, such as those conducted by Liu[15][16], Andrews & Cho [17], and Thomas et al. [18], provide critical insights into the trajectories of HRQoL in ACS patients. By tracking HRQoL over time, these studies shed light on the long-term effects of ACS and its treatments, offering a deeper understanding of patient experiences and recovery patterns. Such research is crucial for developing effective, patient-centered ACS management strategies and improving overall healthcare outcomes.

3. Methodology

This study adopted a quantitative approach, employing a simulation-based model to investigate the impact of various treatment modalities for Acute Coronary Syndrome (ACS) on Health-Related Quality of Life (HRQoL) within the Malaysian context. The simulation model was developed to overcome the constraints of direct patient data collection due to resource limitations. It utilized standard measurements and real-world data, including published clinical outcomes, to generate simulated HRQoL scores for the Malaysian ACS patient population.

The simulation model incorporated multi-faceted parameters to accurately represent diverse patient scenarios and potential treatment outcomes. Baseline HRQoL parameters were determined using existing literature on EQ-5D-5L scores in the ACS patient population, combined with Malaysianspecific health data. Treatment efficacy and recovery rates were based on published clinical outcomes, with the assumption of a normal distribution of HRQoL scores within the population. The primary dependent variable in this study was HRQoL, represented by EQ-5D-5L scores. This instrument assesses five dimensions of health: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, each with five levels of severity. The independent variables included treatment types (PCI, CABG, and OMT) and patient characteristics (age and gender), acknowledging their influence on treatment outcomes and HRQoL. The treatment modalities were characterized by distinct parameters reflecting their real-world outcomes.

The Shapiro-Wilk test was conducted to assess the normality of HRQoL score distributions. Additionally, the Levene test was used to check the homogeneity of variances across treatment groups. These tests informed the choice of subsequent statistical techniques. Given deviations from normality, the Mann-Whitney U test was utilized to compare median HRQoL scores between treatment groups at different timepoints.

A mixed-effect model was used for its capacity to handle longitudinal data complexities and capture variations both within and between individuals. This approach was integral for evaluating the influence of different treatment methods on HRQoL over time. The model formula is as Equation

(1):

$$yy = \beta\beta_0 + \beta\beta_1 \times xx_1 + \beta\beta_2 \times xx_2 + \beta\beta_3 \times xx_3 + uu_{0ii} + \epsilon\epsilon_{iii}$$

(1) where
 yy : HRQoL
 xx_1 : Gender
 xx_2 : Age
 xx_3 : Treatment Group
 uu_{0it} : random intercept for each subject, and denoted the residual error
 $\epsilon\epsilon_{iiii}$: random error

The simulation involved estimating mean of HRQoL over time for each treatment group, generating individual-level variations to reflect natural variability in patient responses, and adjusting for demographics. HRQoL responses were then transformed into utility scores using the Malaysianspecific EQ-5D-5L value set.

Data analyses were conducted using R statistical software, version 4.3.1. The 'lme4' package was used for linear mixed-effects models and handling longitudinal data. Given the use of simulated data, direct ethical concerns related to patient data were minimal. This methodology provides a comprehensive and ethical approach to exploring the impact of ACS treatment modalities on HRQoL in the Malaysian context, leveraging advanced statistical modeling and simulation techniques.

4. Result and Discussion

The dataset included individual-level data points across multiple timeframes, encompassing key variables:

- **SubjectID**: A unique identifier assigned to each simulated individual, representing patients in each treatment group.
- **Gender**: Categorized as Male or Female, reflecting the gender distribution in the Malaysian ACS patient population.
- **Age**: A numerical value, representing the age distribution typical of ACS patients in Malaysia.
- **Adjusted Utilities**: Numerical values derived from EQ-5D-5L scores, adjusted using the Malaysian value set to represent HRQoL measures.
- **Treatment_Group**: Classified into three groups – PCI, CABG, and OMT, each indicating a different treatment modality for ACS.
- **Timepoint**: Categorical data indicating assessment periods, including admission, 1-month, 3month, and 6-month follow-ups.

This study's dataset was developed to correspond with Malaysian Acute Coronary Syndrome (ACS) patients' demographics, with an average age of 55.9–59.1 years and a gender split of 79.44% male and 20.56% female. It included 100 patients per treatment group, assessed longitudinally at four time points—admission, 1, 3, and 6 months—amounting to 1200 observations in total.

A boxplot of age in Figure 1 indicated a symmetric distribution around the central age group. Table 1 shows a summary of the mean and standard deviation (SD) for HRQoL across different treatment modalities at various timepoints. Beginning with admission to 6 months, HRQoL generally improved across all treatments, indicating a trend of recovery in ACS patients regardless of treatment type.

Figure 1 Boxplot of Age

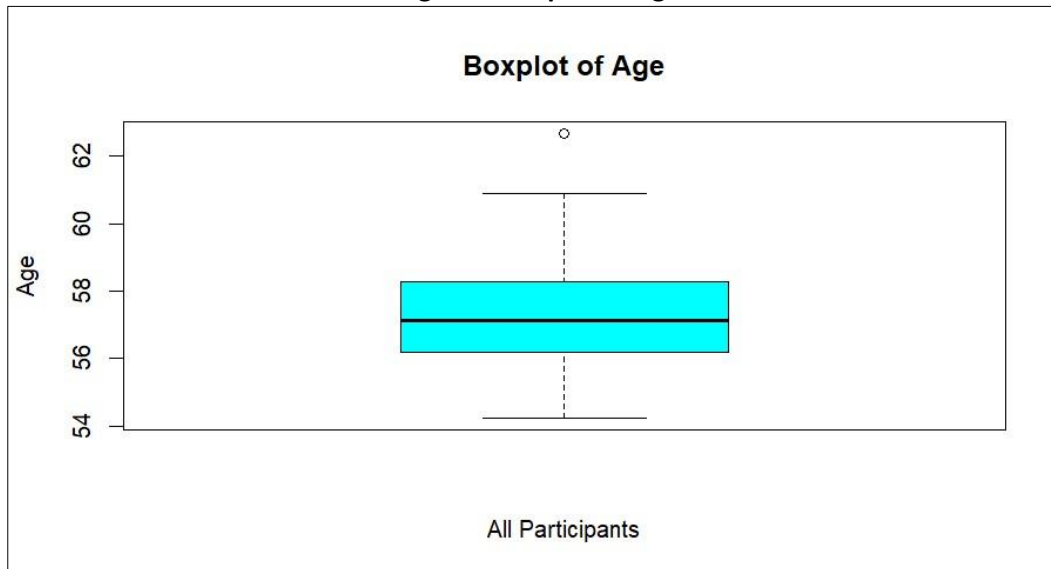


Table 1 Means and SDs of Treatment Effects at Various Time Points

Treatment	n	Admission		1 Month		3 Month		6 Month	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
PCI	100	0.621	0.400	0.659	0.401	0.672	0.401	0.676	0.400
CABG	100	0.625	0.400	0.634	0.401	0.650	0.401	0.681	0.399
OMT	100	0.570	0.397	0.574	0.397	0.583	0.398	0.595	0.398

Figures 2 and 3 shows the progression of patient-reported health outcomes across four timepoints—admission, 1 month, 3 months, and 6 months—measured by EQ-5D-5L utility scores for three distinct treatment groups: PCI, CABG, and OMT. These scores range from 0 (the lowest health status) to 1 (the highest health status), serving as indicators of health-related quality of life.

The boxplots show that median utility scores remained consistent across all phases of treatment, indicating steady post-treatment health self-evaluations. After one-month, median utility scores for PCI decreased slightly, CABG remained stable or improved, and OMT did not change. This trend implies a slight variation in patient experience after therapy.

Over the three and six-month timepoints, the median utility scores remained stable across all groups, indicating a prolonged impression of good health by the participants. A ceiling effect was observed in the boxplots, where the highest quartile of utility scores neared the optimal health status, indicating a limitation in the EQ-5D-5L's ability to distinguish among the highest levels of health status, a finding aligned with previous research by Murasawa et al. [19].

The median scores were most significant among patients who received PCI treatment, indicating a potentially more favorable or expedited recovery trajectory. Conversely, patients treated with OMT had lower initial quality-of-life scores, indicating possibly a lower baseline HRQoL or a more gradual improvement. The CABG group exhibited little variation in the interquartile range, pointing to a stable experience for patients undergoing this treatment.

Figure 2 Boxplot of Utilities Score by Treatment Group Over Time

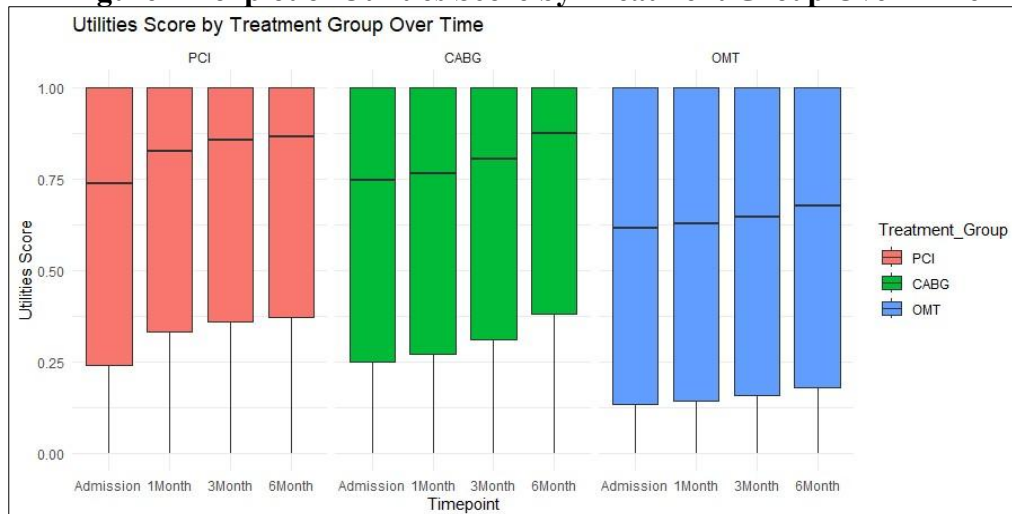
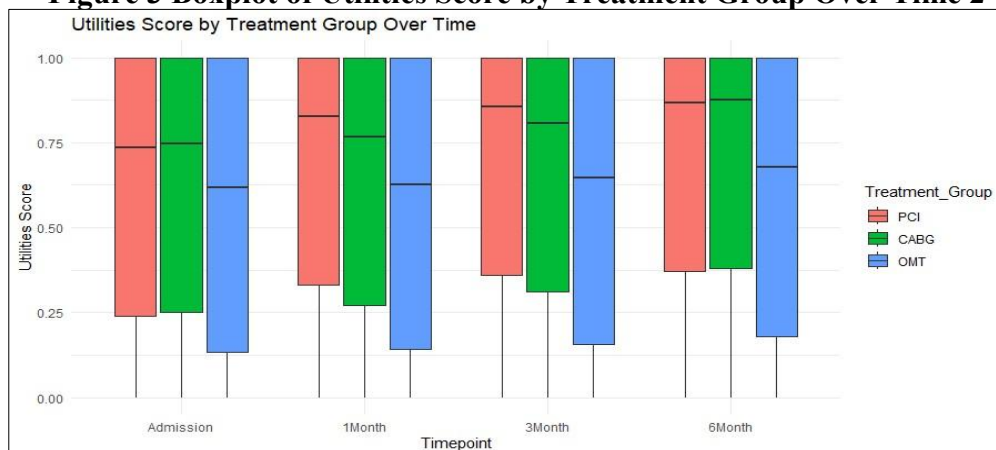
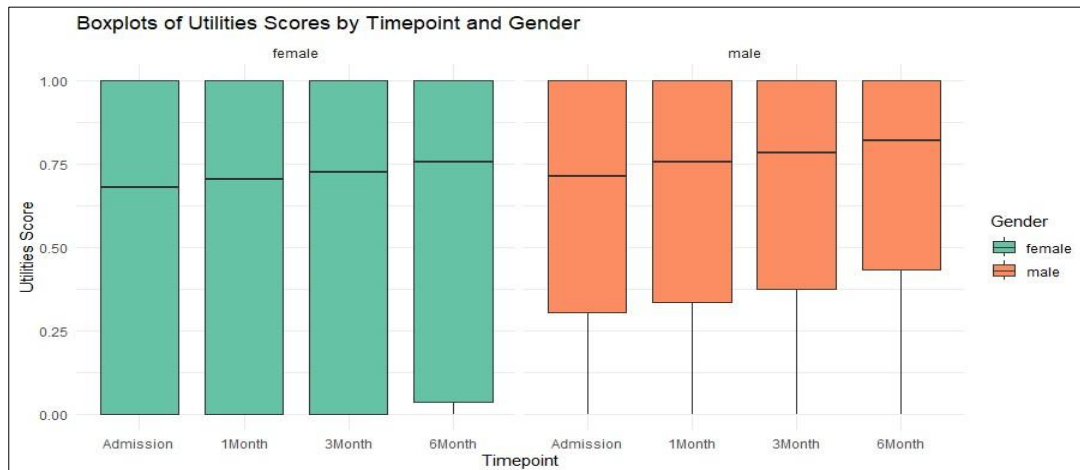


Figure 3 Boxplot of Utilities Score by Treatment Group Over Time 2



Figures 4 and 5 show that there was no significant difference in HRQoL scores between male and female patients in all treatment groups (PCI, CABG, OMT) and at all timepoints (admission, 1-, 3, and 6-months post-treatment). The consistent impact of the treatments on HRQoL indicates a persistent effect on patients' subjective health state, regardless of gender.

Figure 4 Boxplot of Utilities Scores by Timepoint and Gender



Assumption tests were performed to assess the distribution of the adjusted utility scores, which were used as an indicator of HRQoL among various treatment groups and timepoints. ShapiroWilk test showed that HRQoL scores for all treatment groups (PCI, CABG, and OMT) at each timepoint (Admission, 1 Month, 3 Months, 6 Months) were not normally distributed, with p-values below 0.05, indicating a deviation from normality assumption, prompting the consideration of non-parametric methods. However, the Levene test affirmed homogeneity of variances, validating the use of certain parametric tests in subsequent analyses.

Figure 5 Boxplot of Utilities Scores by Treatment and Gender

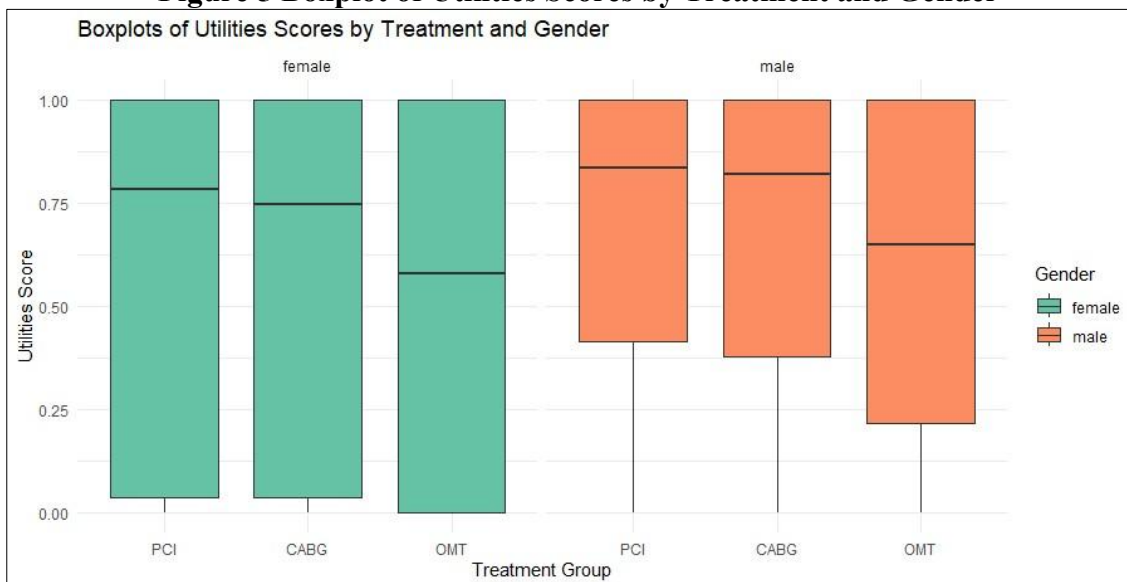


Figure 6 shows the changes in HRQoL scores for ACS treatments over six months. The data shows a consistent improvement in HRQoL from admission to six months for all treatment modalities, indicating a recovery pattern in ACS patients regardless of the treatment received. Specifically, the PCI and CABG groups showed higher HRQoL scores at six months compared to the OMT group, hinting at a marginally better outcome with these interventions. OMT, despite exhibiting improvement over time, consistently presented the lowest average scores at all timepoints.

Mann-Whitney U tests were conducted to compare HRQoL between treatment modalities at different time points. The results showed no statistically significant differences between the PCI and CABG groups, nor between the PCI and OMT groups at most timepoints. However, the p-value approached significance at the 3-month timepoint for the PCI and OMT comparison ($p =$

(2) where xx_1 is gender, xx_2 is age, xx_3 is treatment group (OMT) and xx_4 is treatment group (PCI).

The findings from the mixed-effects model support the hypothesis that treatment choice significantly impacts HRQoL in Malaysian ACS patients, with PCI leading to slightly better outcomes than OMT. Demographic characteristics, specifically age and gender, were shown to have no significant impact on HRQoL utilities score. The longitudinal analysis did not reveal significant changes in HRQoL from admission to six months post-treatment, suggesting a relative stability in patient-reported QoL over this period. This observation indicates that the improvements in HRQoL posttreatment may be sustained over time.

These findings are in line with previous research by Sheikhgholami et al. [12], which reported higher QoL outcomes for the CABG and PCI groups over OMT. However, the long-term significance of these benefits remains consistent with Molinari et al. [20], who found no significant differences in HRQoL over extended periods. Differences in findings from other studies such as those by Baron et al. [11] could be attributed to various factors including study populations and measurement instruments.

The study's outcomes suggest that PCI, where feasible, should be considered a preferred treatment option for ACS in Malaysia, as it may result in better HRQoL.

5. Conclusion

Generally, the purpose of this study was to clarify how treatment modalities for ACS and demographic variables affected the HRQoL of patients in Malaysia. The results showed that PCI had a notable positive impact on HRQoL in comparison to CABG and OMT. Demographic characteristics, such as age and gender, did not significantly affect HRQoL outcomes. The study noted that HRQoL remained consistent during a six-month follow-up period.

These findings emphasize the importance of considering the type of treatment in clinical decision-making processes for ACS patients. They underscore the need for healthcare systems, especially in developing countries like Malaysia, to ensure accessibility to effective treatments like PCI. This study also highlights the potential of simulation techniques as a valuable tool in HRQoL research, offering a method to overcome the limitations of direct data collection in sensitive health areas.

While the use of simulated data and a short follow-up duration are limitations, they pave the way for future research. Future studies should aim to use real-world clinical data and incorporate longer follow-up periods to provide a more comprehensive understanding of the long-term impacts of ACS treatments on patient quality of life. To provide a more complete picture, a broader range of variables, including psychosocial factors and comorbidities, should be considered.

In conclusion, this research marks a significant step towards enhancing our understanding of HRQoL in ACS patients and informs both clinical practice and healthcare policy, advocating for patient-centered care approaches in the treatment of ACS.

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KETERJAMINAN MAKANAN SEBAGAI TERAS STRATEGI PENGURANGAN KEMISKINAN DI MALAYSIA

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ABSTRAK

Isu keterjaminan makanan semakin menjadi kebimbangan utama dalam landskap pembangunan sosial negara terutamanya dalam kalangan golongan B40 dan komuniti rentan. Akses yang tidak sekata kepada makanan berkhasiat bukan sahaja menggugat kesejahteraan individu dan keluarga tetapi turut mengancam pembentukan modal insan negara. Kajian ini meneliti bagaimana keterjaminan makanan yang merangkumi aspek akses, kemampuan, kualiti dan kestabilan bekalan makanan boleh dijadikan sebagai teras dalam merangka strategi pengurangan kemiskinan yang lebih berkesan dan mampan di Malaysia. Kajian ini menggunakan pendekatan kualitatif menerusi analisis kandungan dasar dan dokumen strategik negara seperti Dasar Sekuriti Makanan Negara 2021–2025, RMK-12 dan pelan tindakan Matlamat Pembangunan Mampan (SDG 2: *Zero Hunger*). Turut diteliti ialah laporan data sekunder berkaitan kemiskinan dan pemakanan dari sumber seperti UNICEF dan Jabatan Perangkaan Malaysia. Dapatan menunjukkan terdapat hubungan langsung antara keterjaminan makanan dan kemiskinan. Kewujudan jurang yang besar dari segi akses kepada makanan sihat dalam kalangan isi rumah miskin berpunca daripada faktor sosioekonomi, lokasi dan kurangnya literasi pemakanan. Literasi pemakanan memberi impak yang besar kepada pengukuhan sekuriti makanan di peringkat isi rumah serta dapat memutuskan kitaran kemiskinan antara generasi. Keterjaminan makanan bukan semata-mata soal bekalan atau harga makanan tetapi adalah cerminan keadilan sosial dan keupayaan isi rumah untuk hidup lebih berkualiti. Justeru, strategi pengurangan kemiskinan di Malaysia perlu memposisikan keterjaminan makanan sebagai teras utama dalam perancangan dasar dan pelaksanaan program pembangunan sosial.

Kata Kunci: Keterjaminan Makanan, Kemiskinan, Dasar Sosial, Sekuriti Makanan, SDG 2.

PENGENALAN

Keterjaminan makanan atau seringkali disebut sebagai sekuriti makanan merupakan isu kritikal di peringkat global yang memberi kesan kepada negara maju dan juga negara membangun. Di Malaysia, sekuriti makanan mempunyai kaitan yang rapat dengan usaha pembasmian kemiskinan kerana ketiadaan sekuriti makanan lazimnya memberi kesan paling besar kepada isi rumah berpendapatan rendah (Ahmed & Siwar, 2013). Konsep sekuriti makanan merangkumi aspek ketersediaan, akses, penggunaan, dan kestabilan bekalan makanan yang semuanya penting untuk memastikan setiap individu memperoleh makanan yang mencukupi, selamat dan berkhasiat bagi menjalani kehidupan yang sihat (Zaini et al., 2017). Usaha untuk menangani isu sekuriti makanan bukan sahaja merupakan tanggungjawab hak asasi manusia tetapi juga pendekatan strategik untuk mengurangkan kemiskinan dan menggalakkan pembangunan yang mampan (Ridzuan et al., 2025).

Faktor sosioekonomi memainkan peranan yang sangat penting dalam menentukan keterjaminan makanan. Di Malaysia, ketidaksamaan pendapatan dan perbelanjaan antara wilayah, seperti di Selangor, menonjolkan cabaran yang dihadapi oleh isi rumah berpendapatan rendah dalam mendapatkan makanan yang berpatutan dan berkhasiat (Ridzuan et al., 2025). Kos sara hidup yang tinggi, kekurangan program bantuan yang mencukupi serta ketidaksamarataan sosioekonomi merupakan faktor-faktor yang menyumbang kepada ketiadaan sekuriti makanan dalam kalangan kumpulan rentan, termasuk isi rumah B40 (Mat & Amir, 2019). Justeru, langkah untuk menangani isu-isu sosioekonomi ini amat penting bagi memperbaiki status keterjaminan makanan dan mengurangkan kadar kemiskinan. Oleh itu, makalah ini bertujuan untuk melihat komponen sekuriti makanan yang boleh dijadikan teras dalam merangka strategi pengurangan masalah kemiskinan masyarakat Malaysia.

Makalah ini menggunakan kaedah kualitatif iaitu melalui dapatan daripada sumber sekunder. Kaedah menganalisis dokumen digunakan untuk menyemak dan menilai dokumen sama ada yang bercetak atau yang berbentuk elektronik ke atas bahan-bahan seperti artikel jurnal, laporan kajian, dasar-dasar, laporan statistik, buku dan laporan akhbar. Tujuannya adalah melihat perspektif, tafsiran dan penilaian tentang topik khusus yang dikaji oleh penulis-penulis yang berkaitan dalam karya mereka dan seterusnya membina pandangan tentang topik tersebut.

SEKURITI MAKANAN DAN KEMISKINAN DI MALAYSIA

Ketiadaan sekuriti makanan merupakan isu yang signifikan di Malaysia, khususnya dalam kalangan isi rumah berpendapatan rendah. Kajian menunjukkan bahawa tahap sekuriti makanan mempunyai hubungan yang rapat dengan paras pendapatan isi rumah, di mana isi rumah yang lebih miskin menghadapi kadar ketiadaan sekuriti makanan yang lebih tinggi (Ahmed & Siwar, 2013). Faktor-faktor seperti saiz isi rumah yang besar, tahap pendidikan yang rendah dan bilangan tanggungan yang tinggi turut memburukkan keadaan ini (Ahmed & Siwar, 2013). Kemelesetan ekonomi yang dicetuskan oleh pandemik COVID-19 telah menyerlahkan lagi kerentanan sistem sekuriti makanan dan pemakanan negara. Ini menjadikan isu ini sebagai satu keutamaan yang lebih mendesak dalam agenda pembuat dasar (Kh'ng et al., 2022).

Sekuriti makanan di Malaysia berhadapan dengan pelbagai cabaran yang bersifat pelbagai dimensi dan memerlukan pendekatan menyeluruh serta strategik bagi memastikan akses yang berterusan terhadap makanan berkhasiat untuk semua lapisan rakyat. Malaysia berdepan dengan cabaran besar dalam memastikan keselamatan makanan, terutamanya disebabkan oleh kebergantungan yang tinggi terhadap import makanan. Pada tahun 2023, jumlah import makanan negara telah mencecah RM78.7 bilion, sekali gus memperlihatkan ketergantungan Malaysia terhadap pasaran global (Zulkifli et al., 2025).

Peralihan ekonomi negara daripada berasaskan pertanian kepada perindustrian telah memberi kesan ketara terhadap sekuriti makanan, apabila tanah pertanian banyak ditukar guna untuk pembangunan industri serta peningkatan pergantungan terhadap import makanan (Martadha Mohamed & Akmal Damin, 2015). Disamping itu, kemerosotan produktiviti pertanian dan ketidaksamarataan pendapatan telah memburukkan lagi isu ketiadaan sekuriti makanan yang membawa kepada masalah kekurangan zat serta isu kesihatan seperti kanak-kanak bantut (stunting) dan obesiti (Zulkifli et al., 2025).

Pandemik COVID-19 turut memburukkan sistem makanan negara dengan anggaran bahawa hampir 30% populasi Malaysia mengalami ketiadaan sekuriti makanan semasa tempoh tersebut

(Zulkifli et al., 2025). Di samping itu, faktor persekitaran seperti perubahan iklim, penebangan hutan dan eksploitasi sumber alam menimbulkan ancaman serius terhadap pengeluaran makanan (Zulkifli et al., 2025);(Mustafa et al., 2024). Ketidakseimbangan antara sekuriti makanan dan kelestarian alam sekitar telah mengakibatkan isu seperti kemerosotan alam sekitar, kekurangan sumber air serta kehilangan biodiversiti (Abdullah Kasim et al., 2023). Oleh itu, menangani cabaran ini memerlukan intervensi strategik kerajaan bagi mempromosikan amalan pertanian lestari dan mengurangkan kebergantungan kepada import (Abdullah Kasim et al., 2023).

Usaha meningkatkan usaha keterjaminan makanan di Malaysia meliputi pengembangan pengeluaran makanan domestik, penambahbaikan produktiviti pertanian dan pelaksanaan pendekatan sistem makanan yang lestari (Zulkarnain et al., 2025). Pelan Tindakan Keselamatan Makanan Negara 2021–2025 bertujuan mewujudkan sistem makanan yang mampan dengan memperkukuh pengeluaran makanan tempatan dan mengurangkan kebergantungan kepada import (Zulkarnain et al., 2025). Pertanian bandar juga digalakkan sebagai sumber alternatif makanan bagi penduduk bandar dengan sasaran pengeluaran sebanyak 8,800 metrik tan menjelang tahun 2025 (Chong et al., 2024).

Namun demikian, untuk mencapai tahap sekuriti makanan yang baik juga menuntut penyelesaian terhadap faktor sosioekonomi seperti kemiskinan dan ketidaksamarataan pendapatan. Kajian menunjukkan bahawa sekuriti makanan isi rumah mempunyai korelasi yang signifikan dengan tahap pendapatan di mana isi rumah berpendapatan rendah lebih mudah terdedah kepada ketiadaan sekuriti makanan (Kh'ng et al., 2022). Oleh itu, pembuat dasar digalakkan untuk melaksanakan dasar berkaitan pendapatan bagi mengurangkan kemiskinan dan meningkatkan kualiti pemakanan dalam kalangan masyarakat berpendapatan rendah (Kh'ng et al., 2022).

Dasar dan intervensi strategik juga menjadi elemen penting dalam usaha pembasmian kemiskinan. Justeru, bagi memperkukuh sekuriti makanan dan mengurangkan kadar kemiskinan, Malaysia telah melaksanakan pelbagai dasar serta strategi yang menyeluruh. Dasar Agromakanan Negara 2021–2030 bertujuan untuk meningkatkan tahap sara diri makanan, menyokong golongan petani serta menggalakkan amalan pertanian lestari melalui penggunaan teknologi dan pendidikan (Tohit et al., 2025). Namun begitu, cabaran seperti ketidaktentuan iklim, kekangan tanah pertanian serta keperluan terhadap dasar yang lebih komprehensif dan bersepadu masih wujud (Tohit et al., 2025). Selain itu, strategi pengurangan risiko bencana (*Disaster Risk Reduction*, DRR) terutamanya ketika bencana banjir turut memainkan peranan penting dalam mengekalkan sekuriti makanan serta mengelakkan kesan sosial dan ekonomi yang buruk (Shukri et al., 2023).

Selain itu, pelaburan strategik dalam penyelidikan dan pembangunan (R&D) pertanian, kemajuan teknologi serta kerjasama antara agensi kerajaan, sektor swasta dan organisasi antarabangsa amat penting bagi membina ketahanan sistem makanan negara (Azri et al., 2025). Dengan mengadaptasi pendekatan holistik yang menggabungkan amalan pertanian lestari, pengurangan kebergantungan terhadap import dan pengukuhan sistem makanan tempatan, Malaysia berpotensi untuk memastikan sekuriti makanan yang mampan dalam menghadapi pelbagai cabaran global dan domestik yang semakin meningkat (Zulkifli et al., 2025).

HASIL DAN PERBINCANGAN

Analisis terhadap dasar dan dokumen strategik kebangsaan yang berkaitan dengan sekuriti makanan di Malaysia termasuk Dasar Sekuriti Makanan Negara 2021–2025 dan Rancangan Malaysia Kedua Belas (RMK-12), memberikan pemahaman yang menyeluruh tentang status

semasa sekuriti makanan negara. Dokumen-dokumen ini menunjukkan komitmen kerajaan dalam memperkukuh sekuriti makanan melalui pendekatan sistematik yang memberi tumpuan kepada aspek kebolehcapaian, ketersediaan, penggunaan dan kestabilan bekalan makanan.

Dasar Sekuriti Makanan Negara 2021–2025 menggariskan satu kerangka yang teratur dengan fokus kepada kesiapsiagaan dan daya tahan terhadap cabaran sekuriti makanan, khususnya dalam konteks perubahan iklim, perubahan ekonomi dan krisis global seperti pandemik COVID-19. Dasar ini menekankan kepentingan amalan pertanian lestari, kepelbagaian sumber makanan serta kemajuan teknologi dalam pengeluaran makanan (Le et al., 2024; Kasim et al., 2023). Penekanan terhadap aspek kesiapsiagaan dalam dasar ini amat penting kerana ia bertujuan menghasilkan penyelesaian jangka pendek dan ketahanan jangka panjang dalam sektor pertanian negara.

Begitu juga, Rancangan Malaysia Kedua Belas (RMK-12) mengintegrasikan objektif sekuriti makanan dengan matlamat sosioekonomi yang lebih luas termasuk usaha pembasmian kemiskinan yang berjalan seiring dengan inisiatif sekuriti makanan. RMK-12 menyoroti peranan sistem makanan lestari dalam memastikan setiap rakyat mempunyai akses kepada makanan yang mencukupi, selamat dan berkhasiat dengan memberi tumpuan khusus kepada komuniti yang terpinggir (Hassan, 2024). Ia turut mengiktiraf hubungan antara sekuriti makanan, Kesihatan dan pemakanan dengan matlamat menghubungkan produktiviti pertanian secara langsung kepada inisiatif yang menangani masalah kekurangan zat makanan dalam kalangan populasi rentan.

Selain itu, Matlamat Pembangunan Mampan (*Sustainable Development Goals – SDG*), khususnya SDG 2: Tiada Kelaparan (*Zero Hunger*) selaras dengan strategi nasional Malaysia. Pelan tindakan SDG 2 bertujuan untuk menghapuskan kelaparan, mencapai sekuriti makanan dan pemakanan yang lebih baik serta mempromosikan pertanian mampan. Penglibatan Malaysia dalam agenda global ini mencerminkan komitmen negara untuk menangani ketiadaan sekuriti makanan sebagai komponen penting dalam pembangunan mampan sekali gus memperkukuh keselarasan dengan komitmen antarabangsa serta menekankan kepentingan kerjasama pelbagai pihak berkepentingan (Rabbi et al., 2021).

Di samping itu, laporan daripada UNICEF dan Jabatan Perangkaan Malaysia (DOSM) turut memberikan pandangan yang bernilai mengenai keadaan semasa kemiskinan dan pemakanan di Malaysia. Laporan-laporan ini menunjukkan bahawa terdapat jurang yang ketara dalam tahap sekuriti makanan antara pelbagai kumpulan sosioekonomi termasuklah populasi rentan seperti kanak-kanak dan komuniti Orang Asli yang turut mengalami kadar ketiadaan sekuriti makanan dan kekurangan zat yang lebih tinggi (Sulaiman et al., 2021). Penilaian UNICEF mendapati kadar kekurangan zat dan pertumbuhan terbantut (*stunting*) yang membimbangkan akan diburukkan lagi oleh tekanan sosioekonomi semasa (Sulaiman et al., 2021).

Tambahan pula, laporan statistik DOSM mendedahkan bahawa turun naik harga makanan yang seringkali dikaitkan dengan keadaan ekonomi dan gangguan rantai bekalan makanan global turut memberi kesan langsung terhadap tahap sekuriti makanan isi rumah (Abdullah et al., 2024). Peningkatan harga makanan dan hubungannya dengan peningkatan ketiadaan sekuriti makanan menekankan keperluan mendesak untuk merealisasikan langkah dan dasar yang bersifat adaptif bagi menangani tekanan ekonomi ini serta mengurangkan impaknya terhadap isi rumah berpendapatan rendah.

Sinergi antara dasar nasional dan laporan sekunder ini menunjukkan cabaran semasa yang dihadapi dalam mencapai sekuriti makanan di Malaysia serta keperluan yang berterusan untuk pelaburan dalam amalan pertanian mampan, program kesedaran pemakanan dan rangkaian perlindungan

sosial (*social safety nets*) bagi melindungi segmen masyarakat yang paling rentan (Hassan, 2024; Marinsah et al., 2025). Dalam menghadapi cabaran ini, pendekatan bersepadu yang menggabungkan pembangunan dasar, penglibatan pihak berkepentingan dan inisiatif berasaskan komuniti adalah penting untuk mencapai keterjaminan makanan dan pengurangan kemiskinan secara serentak di Malaysia.

Sekuriti Makanan sebagai Asas Strategi Pengurangan Kemiskinan di Malaysia

Sekuriti makanan membentuk asas utama kepada strategi pengurangan kemiskinan di Malaysia, sebagaimana yang diiktiraf oleh pelbagai sarjana dan penganalisis dasar. Hubungan yang saling berkait antara sekuriti makanan dan usaha pembasmian kemiskinan menunjukkan korelasi penting di mana peningkatan dalam ketersediaan dan kebolehcapaian makanan dapat meningkatkan peluang kehidupan serta kesejahteraan golongan berpendapatan rendah.

Menelusuri evolusi dasar sekuriti makanan di Malaysia, dapat diperhatikan bahawa negara ini, bersama-sama 185 negara lain, telah berikrar untuk mengurangkan kadar kelaparan sekurang-kurangnya sebanyak 50% sebagaimana yang dipersetujui dalam *International Food Summit* 1996. Secara asasnya, dasar-dasar Malaysia lebih menumpukan kepada kecukupan sendiri dalam pengeluaran padi dan kurang memberi perhatian terhadap aspek yang lebih luas dalam sekuriti makanan seperti akses pemakanan dan kemampuan ekonomi (Alam et al., 2015; Alam et al., 2017). Fokus ini telah menghadkan keberkesanan intervensi dasar yang bertujuan menangani isu sekuriti makanan sebagai sebahagian daripada strategi pengurangan kemiskinan. Tambahan pula, kekurangan dasar khusus yang disasarkan terhadap sekuriti makanan telah menyumbang kepada peningkatan ketiadaan sekuriti makanan khususnya dalam kalangan komuniti terpinggir seperti masyarakat Orang Asli, yang menghadapi tahap kerentanan yang tinggi terhadap isu pemakanan (Chong et al., 2018; Hassan, 2024).

Program inovatif seperti inisiatif Zon Pembangunan Ekonomi Ummah (ZPEU) yang diperkenalkan oleh Lembaga Zakat Negeri Kedah (LZNK) membuktikan potensi dalam mengintegrasikan keterjaminan makanan dengan pembasmian kemiskinan. Program ZPEU memberi tumpuan kepada pertanian padi pintar dan projek agroekonomi yang bertujuan untuk meningkatkan taraf hidup asnaf sekali gus memupuk keterjaminan makanan, pembangunan modal insan dan kelestarian ekonomi (Majid et al., 2024). Pendekatan yang bersifat holistik ini telah menggabungkan teknologi, pendidikan dan penglibatan komuniti yang menawarkan model pembangunan mampan dan boleh dicontohi serta dilaksanakan dalam pelbagai konteks lain.

Penekanan terhadap kepelbagaian pertanian (*agricultural diversification*) disokong oleh bukti empirikal yang menunjukkan bahawa amalan tanaman pelbagai jenis mampu meningkatkan kesejahteraan isi rumah dan status pemakanan (Faye et al., 2025). Dalam konteks luar bandar, pendekatan kerjasama komuniti dan pertanian berasaskan masyarakat telah menunjukkan kesan positif yang ketara terhadap sekuriti makanan dan pengurangan kadar kemiskinan. Hal ini membuktikan bahawa tindakan kolektif dalam kalangan komuniti tani boleh menjadi asas penting dalam memperkukuh sekuriti makanan dan meningkatkan daya tahan ekonomi luar bandar (Faye et al., 2025).

Dari sudut perundangan dan tadbir urus, adalah penting untuk mengiktiraf hubungan antara sekuriti makanan dan kerangka perundangan. Tadbir urus yang berkesan serta perlindungan undang-undang di peringkat nasional boleh memastikan pelaksanaan dasar sekuriti makanan mampu memberi manfaat kepada golongan berpendapatan rendah (Aziz et al., 2023). Pendekatan

tadbir urus bersepadu sebegini amat penting untuk kejayaan pelaksanaan Dasar Agromakanan Negara 2021–2030 (NAP 2.0) yang memberi penekanan kepada penggunaan teknologi moden dan amalan pertanian mampan (Kasim et al., 2023).

Dalam menangani cabaran ketiadaan sekuriti makanan khususnya dalam kalangan isi rumah berpendapatan rendah, pendidikan muncul sebagai elemen penting untuk mengurangkan kesan kemiskinan. Kajian menunjukkan bahawa peningkatan peluang pendidikan dapat memperkukuh pengetahuan dan kemahiran komuniti dalam bidang pertanian serta ekonomi seterusnya meningkatkan kestabilan pendapatan dan kecukupan pemakanan (Nisa, 2023). Oleh itu, faktor sosioekonomi seperti pendidikan dan akses kepada sumber perlu diberi perhatian utama dalam merangka program pengurangan kemiskinan yang turut menangani isu sekuriti makanan secara menyeluruh.

SINERGI DASAR, KOMUNITI DAN PENDIDIKAN DALAM MENANGANI ISU SEKURITI MAKANAN DAN KEMISKINAN

Dalam menangani isu sekuriti makanan dan kemiskinan khususnya dalam kalangan kumpulan rentan di Malaysia, pendekatan pelbagai dimensi amat diperlukan. Strategi ini boleh dikategorikan kepada beberapa aspek utama iaitu pemerksaan komuniti, penambahbaikan dasar, kepelbagaian pertanian serta pengukuhan modal sosial.

Salah satu strategi yang berkesan adalah melibatkan inisiatif berasaskan komuniti yang menggalakkan pemerksaan kolektif dalam kalangan petani kecil. Kajian menunjukkan bahawa pengukuhan jaringan rakan-rakan dan kerjasama dapat meningkatkan kesejahteraan isi rumah termasuk dalam aspek kepelbagaian diet dan pengurangan kadar kemiskinan (Faye et al., 2025). Di Malaysia, penggalakan pertanian tempatan melalui Kerjasama setempat dapat meningkatkan kestabilan pengeluaran makanan, khususnya bagi komuniti rentan yang bergantung kepada sektor pertanian sebagai sumber pendapatan utama. Inisiatif seperti kebun komuniti dan pertanian bandar telah diperkenalkan di Malaysia bagi mengurangkan ketiadaan sekuriti makanan di kawasan bandar dan ini membuktikan potensi tindakan akar umbi dalam menangani isu sekuriti makanan (Awang et al., 2024).

Selain itu, penglibatan pelbagai pihak berkepentingan amat penting bagi menangani cabaran sistemik yang berkaitan dengan sekuriti makanan. Kerajaan perlu memainkan peranan penting dalam melaksanakan dasar dan peruntukan kewangan untuk menangani isu keterjaminan makanan melalui kerangka perundangan yang tersusun dengan baik (Alam et al., 2018). Bentuk tadbir urus kolaboratif yang menggabungkan input daripada komuniti tempatan, pakar pertanian dan pembuat dasar adalah penting bagi mereka bentuk intervensi yang berkesan. Dasar Agromakanan Negara 2021–2030 (NAP 2.0) berperanan memodenkan serta memperluas sektor agromakanan bagi memastikan aksesibiliti dan kelestarian makanan, sejajar dengan piawaian sekuriti makanan antarabangsa (Kasim et al., 2023).

Kepelbagaian dalam amalan pertanian juga merupakan salah satu pendekatan penting. Kajian menunjukkan bahawa variasi tanaman dapat meningkatkan daya tahan terhadap perubahan iklim dan kejutan ekonomi sekali gus memperkukuh sekuriti makanan bagi isi rumah berpendapatan rendah (Alam et al., 2015; Firdaus et al., 2020). Dasar awam perlu menggalakkan penanaman pelbagai jenis tanaman makanan dan bukan hanya tertumpu kepada tanaman ruji seperti padi sahaja. Hal ini dapat menyumbang kepada pemakanan yang lebih seimbang dan kestabilan ekonomi dalam kalangan petani terutamanya di kawasan luar bandar yang berdepan dengan kadar kemiskinan lebih tinggi (Alam et al., 2019). Pendekatan ini dapat memastikan ketersediaan

makanan dan peningkatan status pemakanan yang baik dalam kalangan populasi rentan (Kh'ng et al., 2022).

Selain itu, pengukuhan modal sosial (*social capital*) memainkan peranan penting dalam menangani gangguan sekuriti makanan. Penubuhan rangkaian sosial dalam komuniti dapat memupuk daya tahan dan keupayaan penyesuaian dalam mengurus cabaran berkaitan sistem makanan. Kajian menunjukkan bahawa komuniti yang mempunyai ikatan sosial yang kukuh lebih berupaya mengharungi krisis seperti kekurangan bekalan makanan atau kemelesetan ekonomi. Hubungkait sosial ini juga dapat meningkatkan akses kepada sumber, memperkukuh strategi daya tindak masyarakat dan akhirnya membawa kepada keterjaminan makanan yang lebih baik (Nosratabadi et al., 2020).

Tumpuan terhadap pendidikan dan program kesedaran awam juga amat penting bagi mengurangkan kesan ketiadaan sekuriti makanan. Inisiatif pendidikan yang menumpukan kepada pemahaman tentang pemakanan, kaedah pengeluaran makanan serta pengurusan sumber yang bijak dapat memperkasakan keluarga untuk membuat keputusan yang lebih berinformasi berkaitan dengan tabiat pemakanan dan pengeluaran makanan mereka (Sulaiman et al., 2021). Mengintegrasikan usaha pendidikan ini dalam program yang menyasarkan isi rumah berpendapatan rendah boleh meningkatkan ketahanan masyarakat berhadapan dengan ketidakstabilan harga makanan serta memperbaiki tahap pengambilan pemakanan secara keseluruhan.

KESIMPULAN

Usaha menangani ketiadaan sekuriti makanan bukan sahaja dapat memenuhi keperluan segera masyarakat tetapi juga sejajar dengan Matlamat Pembangunan Lestari (SDG) jangka panjang. Pendekatan yang berasaskan pertanian mampan dan lestari boleh menyumbang secara signifikan kepada usaha pengurangan kemiskinan, di samping memperkukuh daya tahan komuniti dan alam sekitar (Rabbi et al., 2021). Hubungan rapat antara kelestarian pertanian, sekuriti makanan dan pembasmian kemiskinan menunjukkan keperluan kepada pendekatan pelbagai dimensi yang dapat memperkukuh ketahanan komuniti luar bandar, meningkatkan ketersediaan makanan serta menambah baik keadaan sosioekonomi masyarakat.

Dalam kerancangan pelaksanaan usaha menangani sekuriti makanan dan kemiskinan di Malaysia khususnya dalam kalangan kumpulan rentan, tidak dapat dinafikan amat memerlukan pendekatan pelbagai dimensi. Langkah ini perlu merangkumi pemerksaan komuniti, penglibatan pelbagai pihak berkepentingan, kepelbagaian pertanian, pengukuhan modal sosial serta pendidikan berasaskan kesedaran pemakanan. Strategi-strategi yang saling berkait ini mampu meningkatkan tahap sekuriti makanan di samping menangani isu kemiskinan secara menyeluruh dalam pelbagai segmen masyarakat Malaysia.

Sebagai kesimpulan, sekuriti makanan perlu dilihat sebagai komponen penting dalam strategi pengurangan kemiskinan di Malaysia. Pendekatan yang komprehensif merangkumi kepelbagaian pertanian, dasar yang komprehensif, pelaburan strategik dalam sektor pertanian, pemerksaan pendidikan, program inovatif yang mengintegrasikan pembangunan sosioekonomi dengan amalan mampan, serta pelaksanaan amalan pertanian lestari amat diperlukan untuk menangani cabaran yang saling berkait antara ketiadaan sekuriti makanan dan kemiskinan. Melalui pendekatan holistik ini, Malaysia berpotensi memperkukuh kesejahteraan, meningkatkan keadilan sosial, serta memastikan ketahanan ekonomi dan sosial masyarakat secara dinamik dan berterusan.

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SMART SENSING FOR SMART FAMILIES: THE ROLE OF SPR BASED BIOSENSOR TECHNOLOGY IN ENHANCING REPRODUCTIVE HEALTH AND DEMOGRAPHIC QUALITY IN MALAYSIA

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ABSTRACT

As Malaysia navigates the challenges of declining fertility rates, rising infertility, and shifting family planning trends, the need for innovative, data-driven health solutions becomes increasingly urgent. Biosensor technology emerges as a transformative tool in supporting reproductive health and sustaining a high-quality population. With the ability to detect and monitor key reproductive biomarkers such as hormones, proteins, and infection indicators in real time, biosensors empower individuals and healthcare providers with accurate, timely, and personalized insights. Among these technologies, Surface Plasmon Resonance (SPR)-based biosensors are particularly promising for reproductive health applications due to their high sensitivity, label-free detection, and real-time analysis capabilities. In this context, SPR biosensors employing MoS₂-COOH-functionalized gold thin films as sensing elements represent a significant advancement in biosensing performance, particularly for the detection of low-abundance reproductive proteins. The integration of MoS₂ (molybdenum disulfide) nanosheets functionalized with carboxylic groups (–COOH) enhances the biocompatibility, surface reactivity, and analyte binding efficiency of the gold thin film substrate used in SPR systems. This hybrid material significantly improves sensor sensitivity and specificity by increasing the density of active binding sites for target protein biomarkers. In reproductive health, this allows for high-precision detection of critical proteins such as luteinizing hormone (LH), follicle-stimulating hormone (FSH), anti-Müllerian hormone (AMH), human chorionic gonadotropin (hCG), and other pregnancy- or fertility-related markers, even at extremely low concentrations. This enhanced detection capability is particularly vital in early-stage diagnosis of infertility, hormonal imbalances, and gestational complications, thereby enabling timely medical intervention and personalized treatment strategies. Additionally, such SPR platforms can support assisted reproductive technologies (ART) by providing real-time hormonal monitoring and

improving embryo transfer timing. They also assist in family planning efforts through accurate ovulation tracking and early pregnancy detection, empowering individuals with better reproductive control and decision-making. Furthermore, the potential miniaturization and portability of MoS₂-COOH–gold SPR biosensors make them ideal for deployment in rural or resource-limited clinical settings in Malaysia, aligning with the goal of equitable healthcare access across the population. On a broader scale, the data generated from such biosensors can feed into public health surveillance systems, enabling data-driven planning and resource optimization. This paper explores the transformative potential of biosensor technology, focusing on MoS₂-COOH–gold SPR sensors in enhancing fertility assessment, monitoring pregnancy health, supporting ART, and advancing family planning strategies in Malaysia. The work was revealed that the sensitivity enhancement by MoS₂-COOH–gold-based modification is superior compared to other types of self-assemble monolayer (SAM). Additionally, the SPR setup with MoS₂-COOH single layer exhibits the highest sensitivity with an increase of 34.13 °/RIU compared with 11-MUA, 3-MPA, and mix thiol with an increase of 11.77 °/RIU, 25.46 °/RIU and 2.62 °/RIU respectively. By embedding advanced SPR biosensing platforms into the national reproductive health framework, Malaysia can significantly improve reproductive outcomes, strengthen demographic sustainability, and realize the aspirations of Vision 2030 for a resilient, healthy, and high-quality population.

Keywords: Biosensor, SPR, MOS2-COOH, Reproductive Health.

032-026

ASSOCIATION OF SOCIO-DEMOGRAPHIC FACTORS WITH KNOWLEDGE AND PRACTICE OF EXCLUSIVE BREASTFEEDING AMONG ANTENATAL MOTHERS IN SELANGOR

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ABSTRACT

Exclusive breastfeeding (EBF) for the first six months is recommended by the World Health Organization to ensure optimal infant health and development. In Malaysia, EBF rates remain below the national target of 70%, highlighting the need to examine factors influencing maternal knowledge and practice. This study aimed to assess how sociodemographic factors relate to antenatal mothers' knowledge and practice of EBF and to examine how factors such as race, education level, and employment status are related to what mothers know and how they practice EBF. A cross-sectional survey was conducted at a community health clinic in Tanjong Karang, Selangor, between August and October 2024. A total of 150 antenatal mothers completed a structured questionnaire comprising 20 knowledge items and five practice questions. Descriptive statistics summarized the respondents' socio-demographic characteristics, and multiple linear regression identified significant associations between these factors and respondents' knowledge and practice. Overall, 65% demonstrated good knowledge of exclusive breastfeeding (EBF), while 95.3% reported correct practice. The study found that 65% of respondents had good knowledge of EBF, while 95.3% practiced it correctly. Knowledge was significantly associated with race and employment status, whereas practice was linked only to race. Education level did not have any meaningful effect. Although most mothers followed correct breastfeeding practices, the differences in knowledge highlight the need for tailored education. Special attention should be given to mothers who are unemployed or from racial groups with lower understanding. Clear, practical, and community-based education during antenatal care can help strengthen knowledge and support long-term breastfeeding success.

Keywords: Exclusive Breastfeeding, Breast Feeding, Lactation, Community Health.

INTRODUCTION

Exclusive breastfeeding (EBF) refers to feeding an infant solely breast milk without formula, water, or other foods for the first six months of life, except for prescribed vitamins or medications. The World Health Organization (WHO) recommends EBF during this period, followed by continued breastfeeding alongside complementary foods until at least two years of age or beyond (WHO, 2023). EBF provides optimal nutrition, enhances immunity, reduces infection risk, offers long-term protection against illness, and supports cognitive development. For mothers, it promotes faster postpartum recovery and reduces the risk of breast and ovarian cancers (WHO, 2025). In

recognition of these benefits, global targets, such as the WHO Global Nutrition Targets, aim to achieve a minimum of 50% EBF prevalence in infants under six months by 2025 (Pan American Health Organization [PAHO], 2023).

Despite these recommendations, global EBF rates remain below target, with only about 41% of infants under six months exclusively breastfed. Many infants receive suboptimal feeding in early life. Evidence indicates that integrated interventions delivered through healthcare systems, community engagement, and home-based strategies can improve both early initiation and EBF rates in low- and middle-income countries (Sinha et al., 2017). In Malaysia, breastfeeding initiation within the first hour after birth is still below optimal levels. The National Health and Morbidity Survey (NHMS) 2022 reported that only 62% of infants born in the preceding 24 months were breastfed within the first hour (Institute for Public Health, 2023). Furthermore, while many mothers intend to practice EBF, only 47.4% sustain it for the full six months postpartum (Shohaimi et al., 2022). Practices also differ across ethnic groups, reflecting Malaysia's multi-ethnic population. Understanding the socio-demographic influences on breastfeeding decisions is crucial for designing effective interventions.

Maternal knowledge is a key determinant of both the initiation and continuation of EBF. Women who are well-informed and confident in their breastfeeding skills are more likely to initiate early and maintain exclusivity. In contrast, limited knowledge or cultural misconceptions may hinder optimal practices. Socio-demographic factors such as education, employment, and cultural background often intertwined with ethnicity can influence breastfeeding behavior. For example, higher education levels are frequently associated with greater awareness of breastfeeding benefits, whereas employed mothers may face challenges sustaining EBF without workplace support. Cultural beliefs may also shape practices; in some communities, colostrum is discarded or formula introduced prematurely. Studies from Nigeria and the United States highlight that EBF knowledge and intentions vary by region, education, and ethnicity, with some groups expressing a strong desire to breastfeed yet lacking adequate knowledge or support.

In Malaysia, earlier studies suggest that while awareness of EBF is relatively high, actual duration often falls short of recommendations. Research in Sarawak, East Malaysia, has identified persistent misconceptions and inadequate understanding among some mothers, influencing feeding decisions. Perceived milk insufficiency, time constraints, and work demands are common barriers, even among healthcare professionals (Hashim, Ishak, & Muhammad, 2020). Conversely, support from family and healthcare providers increases the likelihood of maintaining EBF.

This study aimed to assess the level of knowledge and practice of EBF among antenatal mothers in Selangor, Malaysia, and to examine socio-demographic factors associated with these outcomes.

It was hypothesized that higher education and being unemployed would be associated with greater knowledge and practice, while cultural background might also influence results. The findings aim to inform culturally sensitive, targeted interventions to improve EBF uptake and strengthen support within Malaysia's maternal healthcare services.

METHODOLOGY

Study Design and Setting

This cross-sectional descriptive study was conducted at a public community health clinic in Tanjong Karang, Selangor, Malaysia, which serves a semi-urban population and provides antenatal care alongside other maternal and child health services. Data collection took place from August to October 2024. Eligible participants were recruited during routine antenatal visits. Ethical approval was obtained from the institutional ethics committee and the Selangor State Health Department. Written permission to conduct the study was granted by the clinic management, and informed consent was obtained from all participants.

Sampling method

The study population comprised antenatal mothers aged 18 years or older, at any gestational stage, and receiving antenatal care at the clinic. Exclusion criteria included illiteracy or any condition that prevented completion of the questionnaire. A total of 150 participants were recruited via convenience sampling, based on feasibility within the study period and clinic attendance. The sample size was deemed sufficient for exploration analysis and provided at least 10 cases per variable for regression modelling.

Reliability and validity

Data were gathered using a structured, self-administered questionnaire adapted from the Knowledge and Attitude Breastfeeding Questionnaire (KA-BFQ) developed and validated by Che Muzaini et al. (2016) for postpartum mothers in Malaysia. The KA-BFQ comprises 47 knowledge items and 23 attitude items, with reported Cronbach's alpha values of 0.85 and 0.79, respectively.

For this study, selected KA-BFQ items were modified to suit the antenatal context, focusing on knowledge and intended practices. Two maternal health experts reviewed the content for contextual relevance. The questionnaire was prepared in Malay and English, and a pilot test with 15 antenatal mothers assessed clarity and comprehension. Minor wording changes were made accordingly. Internal consistency for the knowledge section in this study was acceptable (Cronbach's alpha = 0.78).

Data Collection

Clinic nurses identified eligible participants during antenatal sessions. The researcher explained the study, obtained consent, and provided the questionnaire. Completion time was approximately 15–20 minutes. Questionnaires were checked for completeness, and any missing responses were clarified immediately. Anonymity was maintained through participant ID codes.

RESULTS

Multiple linear regression indicated that race ($\beta = 0.295$, $p = 0.002$) and employment status ($\beta = 0.218$, $p = 0.031$) were significant predictors of knowledge, explaining 15.4% of the variance (adjusted $R^2 = 0.154$, $F(3, 146) = 9.34$, $p < 0.001$). For practice, only race ($\beta = 0.312$, $p = 0.001$) was a significant predictor, explaining 11.8% of the variance (adjusted $R^2 = 0.118$, $F(3, 146) = 7.01$, $p < 0.001$).

Participant Characteristics

A total of 150 antenatal mothers participated in the study. Ages ranged from 18 to 45 years, with a mean of approximately 30 years. Almost half (46.7%) were in their twenties, and one-third were in their thirties. The majority were Malay (53.3%), followed by Indian (26.7%) and Chinese (20.0%). Most participants (86.7%) were multiparous with prior breastfeeding experience, and 13.3% were primigravida. More than half (56.7%) had completed secondary school, 30.0% held a diploma, 10.0% had a bachelor's degree, and 3.3% a master's degree. The majority were not employed (65.3%). Most were in the second trimester (56.0%) or third trimester (45.3%). These characteristics provided a multi-ethnic sample with varied educational and employment backgrounds, allowing subgroup comparisons.

Table 1. Socio-Demographic Characteristics of Participants (N = 150)

Characteristic	Category	n (%)
Age (years)	< 20	5 (3.3)
	21–25	40 (26.7)
	26–30	42 (28.0)
	31–35	30 (20.0)
	36–40	25 (16.7)
	41–45	8 (5.3)
Ethnicity	Malay	150 (53.3)
	Chinese	30 (20.0)
	Indian	40 (26.7)
Pregnancy history	Primigravida (no prior births)	20 (13.3)
(EBF experience)	Multiparous (≥ 1 prior birth): with prior EBF experience	130 (86.7)
Education level	Secondary school (SPM)	85 (56.7)
	Diploma	45 (30.0)
	Bachelor's degree	15 (10.0)
	Master's/ postgraduate	5 (3.3)
Employment status	Employed	52 (34.7)
	Not employed (homemaker/unemployed)	98 (65.3)
Gestational trimester	1st trimester (< 12 weeks)	16 (10.7)
	2nd trimester (13–24 weeks)	84 (56.0)
	3rd trimester (25–36 weeks)	68 (45.3)

Knowledge of Exclusive Breastfeeding

Overall, participants demonstrated high knowledge about exclusive breastfeeding. The mean score was 16.5 out of 20 ($SD \approx 2.5$), with 65% categorized as having good knowledge (≥ 17 correct answers), 25% moderate (10–16 correct answers), and 5% poor (< 10 correct answers). Awareness of the recommended EBF duration and its benefits was almost universal. Nearly all respondents (98.7%) recognized that breastfeeding is important for infant health, and over 91% stated that they intended to feed their baby breast milk only for the first six months. A small minority (7.5%)

preferred mixed feeding (breast milk with formulas or water) during the first six months, while no one intended to give formula alone.

On specific knowledge items, almost all respondents understood that colostrum should be given to the newborn. However, 1–2% indicated uncertainty or planned to discard it, reflecting the persistence of cultural misconceptions among a small number of participants. Regarding the timing of initiation, 97.3% knew breastfeeding should ideally begin within one hour of delivery. A small proportion (8%) believed that giving plain water to a newborn in the first days was an acceptable incorrect practice, more common among those with lower education levels.

Knowledge about breastfeeding during maternal or infant illness was slightly lower: approximately 80% correctly indicated that breastfeeding should continue even if the mother or baby is unwell, suggesting a need for greater emphasis on this point in antenatal education.

Differences by Socio-Demographic Factors

All ethnic groups demonstrated high awareness, with Indian mothers recording the highest mean scores (~17/20), followed closely by Malay mothers (~16.5/20). Chinese mothers scored slightly lower (~15.5/20), with some indicating a preference for mixed feeding. These differences made race a significant predictor in regression analysis. Mothers with diploma or degree qualifications had marginally higher mean scores than those with only secondary school education, though the difference was small and not statistically significant (ANOVA $p > 0.05$). In terms of employment, mothers who were employed scored marginally higher than those who were unemployed, with a greater proportion able to answer all items correctly. This association was statistically significant in regression analysis ($p = 0.041$).

In summary, knowledge of EBF in this cohort was strong, with only a few misconceptions related to colostrum use, early supplementation with water, and breastfeeding during illness. The results suggest that existing antenatal education in this setting is effective, but targeted reinforcement could benefit specific subgroups.

Exclusive Breastfeeding Practice

Exclusive breastfeeding practices and intentions among participants were highly positive. Based on the practice score classification, 95.3% (143 out of 150) achieved the maximum score of 5, indicating adherence to all recommended practices. Only seven respondents scored below the maximum, each deviating from one or two practices such as introducing water or formula before six months or delaying initiation beyond one hour. None reported plans to use formulas alone or introduce solid foods before six months.

Most respondents (88.7%) said they would give colostrum to their newborn, while 11.3% were unsure or answered “maybe,” and none planned to discard it. This shows a positive change from older practices that viewed colostrum negatively. A large majority (91.3%) planned to start breastfeeding within one hour of birth, which is much higher than the global average of 48% (UNICEF, 2023). Those who expected delays mentioned reasons such as caesarean delivery or medical issues.

None of the mothers reported giving prelacteal feeds like water or honey. Multiparous mothers confirmed they had not done so with previous children, and primiparous mothers also said they would not. For exclusive breastfeeding, all primiparous mothers and 95% of multiparous mothers intended to breastfeed only for the first six months. Some multiparous mothers had used formula earlier in past pregnancies but now aimed to continue breastfeeding longer. Only two mothers (1.3%) planned mixed feeding from the start due to low milk supply, and both had already received counselling from clinic staff.

Differences by Socio-Demographic Factors

Perfect practice scores were most common among Malay and Indian mothers, while five out of the seven mothers with scores below the maximum were Chinese. These participants often mentioned early return to work or cultural norms that encouraged early supplementation. Race was the only significant predictor of practice in regression analysis ($p = 0.003$). Practice scores were high across all education levels, with no significant differences observed, as even mothers with only secondary education achieved near-maximum scores. In terms of employment, although overall practice scores did not vary greatly, employed mothers were more likely to use expressed breast milk or introduce formula after returning to work, usually between two and three months postpartum.

Overall, the high practice scores suggest that most mothers in this setting not only possess strong knowledge of EBF but are also prepared to follow recommended practices. The minimal gap between knowledge and intended practice indicates that antenatal education and support in this clinic are effectively translating into behavioral commitment.

Inferential Analysis: Predictors of Knowledge and Practice

Multiple linear regression analyses were conducted to identify socio-demographic predictors of exclusive breastfeeding (EBF) knowledge and practice scores, with race, education level, and employment status entered simultaneously. All model assumptions were met.

The knowledge model was statistically significant, $F(3, 76) = 5.283$, $p = 0.002$, explaining 57.3% of the variance ($R^2 = 0.573$, adjusted $R^2 = 0.340$). Race ($\beta = 0.317$, $p = 0.004$) and employment status ($\beta = 0.244$, $p = 0.041$) were significant predictors, with Indian mothers and employed mothers showing higher knowledge scores. Education level was not significant ($\beta = 0.041$, $p = 0.729$).

The practice model was also significant, $F(3, 76) = 3.386$, $p = 0.022$, explaining 41.8% of the variance ($R^2 = 0.418$, adjusted $R^2 = 0.283$). Race was the only significant predictor ($\beta = 0.332$, $p = 0.003$), with Indian mothers more likely to achieve the full practice score and Chinese mothers slightly less likely. Education level ($\beta = -0.094$, $p = 0.440$) and employment status ($\beta = -0.042$, $p = 0.731$) were not significant predictors of practice.

Table 3. Multiple Linear Regression Predicting EBF Knowledge Score

Predictor	B (Unstandardized)	SE B	Beta (Standardized)	t	p-value
Constant	1.299	0.143	–	9.066	<0.001
Race (numeric code)*	0.120	0.040	0.317	3.008	0.004 **
Education level (code)**	0.131	0.036	0.041	0.348	0.729
Employment (1 = employed, 0 = not)	0.126	0.061	0.244	2.074	0.041 **

Notes: The dependent variable was the total knowledge score (0–20, normalized). Race was coded as 1 = Malay, 2 = Chinese, 3 = Indian; a positive B value indicates a higher knowledge score with a higher race code (i.e., Indian > Chinese > Malay). Education level was coded as 1 = SPM, 2 = Diploma, 3 = Bachelor's degree, 4 = Master's degree. Significant predictors ($p < 0.05$) are shown in bold.

Practice Model

The regression model for practice scores was statistically significant, $F(3, 76) = 3.386$, $p = 0.022$, explaining 41.8% of the variance ($R^2 = 0.418$, adjusted $R^2 = 0.283$). Race was the only significant predictor. Using Malay mothers as the reference group, the coefficient for race was positive ($\beta = 0.332$, $p = 0.003$), showing that Indian mothers were more likely to achieve the full practice score, whereas Chinese mothers were slightly less likely. Education level and employment status were not significantly associated with practice scores ($\beta = -0.094$, $p = 0.440$). Employment had a small negative coefficient ($\beta = -0.042$, $p = 0.731$), indicating that employed mothers were slightly less likely to achieve the maximum practice score, though the difference was not statistically significant.

Summary of Findings

These results indicate that ethnicity plays a consistent and significant role in both knowledge and practice of EBF among antenatal mothers in this setting. Employment status contributes positively to knowledge but not to practice, while education level has no statistically significant effect on either outcome. The findings suggest that cultural factors and workplace circumstances may shape EBF-related knowledge and behaviors more strongly than formal education.

Table 4. Multiple Linear Regression Predicting EBF Practice Score

Predictor	B (Unstandardize d)	SE B	Beta (Standardized)	t	p-value
Constant	1.232	0.142	—	8.663	<0.001
Race (1=Malay, 2=Chinese, 3=Indian)	0.121	0.039	0.332	3.055	0.003 **
Education level (ordinal)	-0.028	0.036	-0.094	-0.777	0.440
Employment (1 = employed)	-0.021	0.060	-0.042	-0.345	0.731

Notes: Dependent variable is practice score (0–5). $R^2 = 0.418$, Adjusted $R^2 = 0.283$, $F(3,76) = 3.386$, $p = 0.022$. ** $p < 0.01$.

DISCUSSION

This study aimed to assess the association between socio-demographic factors and the knowledge and practice of exclusive breastfeeding (EBF) among antenatal mothers attending a semi-urban clinic in Selangor. The findings showed that overall knowledge and practice levels were high, but there were notable differences by race and employment status. The regression analysis highlighted that race/ethnicity and employment status were significant predictors of knowledge, whereas only race predicted practice. Indian mothers scored higher for both knowledge and practice, while Chinese mothers were slightly less likely to achieve the maximum practice score. These differences may reflect variations in cultural beliefs, breastfeeding norms, and exposure to targeted health education within different ethnic communities in Malaysia.

Employment status was positively associated with knowledge, suggesting that employed mothers may have greater access to health information through workplace initiatives, social networks, or digital platforms. However, employment did not translate into higher practice scores, which could be due to time constraints, workplace limitations, or a lack of practical breastfeeding support after childbirth. The absence of a significant association between education level and either knowledge or practice indicates that formal education alone may not be sufficient to improve EBF outcomes. This underscores the importance of antenatal education programmes that provide practical skills and address cultural and contextual barriers, rather than relying solely on general educational attainment.

These findings support the need for tailored breastfeeding promotion strategies that consider cultural context and occupational demands. Interventions should focus on sustaining knowledge gains and translating them into consistent practice, especially for groups with lower practice scores despite adequate knowledge.

Knowledge of Exclusive Breastfeeding

Two-thirds of participants demonstrated good knowledge of EBF, consistent with other Malaysian studies reporting high awareness in community settings. Wee and Rosli (2023) found that most mothers in Terengganu understood the importance of EBF, and Jalil et al. (2024) reported similar findings in urban and semi-urban clinics. The almost universal recognition of “breast milk only

for six months” in the present study suggests that antenatal clinics and public health campaigns in Selangor are successfully conveying key messages.

Interestingly, education level was not a significant predictor of knowledge. This aligns with Jalil et al. (2024), who argued that targeted antenatal education can minimize differences linked to formal educational attainment. Even mothers with only secondary schooling in our study achieved high scores, suggesting that health promotion efforts have effectively reached a broad audience.

Ethnic variation in knowledge was observed, with Indian mothers scoring slightly higher than Malay and Chinese mothers. Cultural practices and community norms may contribute to these differences. Jalil et al. (2024) highlighted how social beliefs influence breastfeeding perceptions, and in some Chinese communities, early supplementation with formula remains common despite good awareness of EBF. Employment status was also significant; employed mothers had higher knowledge scores, potentially due to access to workplace health education or broader information networks.

Exclusive Breastfeeding Practice

Practice scores were exceptionally high, with 95.3% of respondents ($n = 150$) meeting all recommended practice indicators. This high adherence aligns with findings from previous research, suggesting that antenatal education in this setting is effective in promoting breastfeeding behaviors. Such a strong practice rate indicates that most mothers are well-informed and motivated to follow EBF guidelines, although targeted support may still be required for specific groups with lower uptake. This level of adherence surpasses national averages for actual EBF duration (Shohaimi et al., 2022), though it must be noted that these were antenatal intentions rather than postpartum behaviors. High intention rates may be influenced by the effectiveness of antenatal education and, for multiparous mothers, positive prior breastfeeding experiences.

Ethnicity was the only significant predictor of practice scores, with Chinese mothers more likely to anticipate early supplementation often due to work-related factors or cultural preferences. These findings are consistent with previous Malaysian studies that report cultural differences in infant feeding practices (Jalil et al., 2024; Wee & Rosli, 2023). Education and employment status were not significant predictors, suggesting that once mothers are committed to EBF, structural or cultural factors rather than individual socio-demographics may determine their ability to maintain the practice.

Comparison with Regional and International Findings

The patterns observed here parallel findings from Vietnam, where Nguyen et al. (2022) found that intentions to practice EBF were high antenatally but were often challenged postpartum by return-to-work pressures and perceived milk insufficiency. Similarly, Mishuk (2024) reported that in certain communities, traditional beliefs and family influence could override maternal knowledge. The persistence of misconceptions about colostrum and water supplementation among a small minority in our sample suggests that culturally tailored messaging remains important.

Implications for Practice and Policy

Antenatal health education programmes are effective and should continue with clear, evidence-based messages, especially for mothers in early pregnancy and those with little breastfeeding knowledge. Cultural differences call for tailored health promotion using language-specific materials and community leader involvement to address misconceptions. Although employment was not directly linked to exclusive breastfeeding (EBF), working mothers often worry about continuing after returning to work. Policies such as longer maternity leave, flexible hours, and better lactation facilities (Basrowi et al., 2024) can support them. Peer support, through antenatal discussions or groups, can boost mothers' confidence and help them manage challenges.

Strengths and Limitations

This study achieved a high response rate with diverse participants and a validated tool. By focusing on antenatal mothers, it assessed pre-delivery intentions, an important stage for shaping later behaviour. A validated and tested questionnaire supported reliable findings, and including mothers with prior breastfeeding experience gave further insight.

The study also has limitations. For first-time mothers, reported practices reflected intentions rather than actual behaviour, which may be biased. The cross-sectional design prevents drawing causal conclusions. Regression analysis was based on the full sample ($n = 150$), but results may still be influenced by unmeasured factors. Conducting the study in a single semi-urban clinic limits generalisation, as mothers in rural or urban areas may differ. In addition, only three socio-demographic predictors were analysed, without considering factors such as self-efficacy, family support, or media influence.

Future Research

Longitudinal studies following mothers from pregnancy through at least six months postpartum are needed to determine whether antenatal intentions are sustained and to identify reasons for any deviations. Incorporating qualitative methods, such as in-depth interviews, would help explore the cultural, social, and practical barriers influencing EBF decisions, especially among subgroups with lower adherence.

Future studies should examine additional predictors, including maternal confidence (self-efficacy), perceived family and partner support, exposure to media campaigns, and mental health. Research involving multiple clinics across urban, semi-urban, and rural settings in both West and East Malaysia would allow for broader generalizability and identification of regional patterns. Intervention studies could test the effectiveness of culturally tailored education, workplace support programmes, or structured postnatal follow-up in sustaining EBF practices among employed mothers and those with previous challenges.

CONCLUSION

Mothers in this semi-urban Malaysian clinic showed high knowledge of exclusive breastfeeding (EBF) and strong intentions to follow recommended practices. Ethnicity was linked to both knowledge and practice, while employment influenced knowledge but not practice, and education

level showed no effect. These results stress the importance of culturally adapted antenatal education and targeted support for groups with lower knowledge, such as Chinese mothers and unemployed mothers. To maintain high EBF rates, ongoing postpartum support, peer networks, and workplace-friendly policies are needed. Achieving this will support Malaysia's goal of at least 50% EBF at six months by 2026.

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INTERVENSI TIGA DIMENSI DALAM MENANGANI KEMISKINAN BANDAR: SUATU MODEL BERASASKAN KOMUNITI

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ABSTRAK

Kemiskinan bandar merupakan isu multidimensi yang merentas aspek kewangan, pendidikan dan kesihatan, serta mencerminkan ketidakaksamaan akses terhadap sumber pembangunan. Kajian ini bertujuan membangunkan model solusi berasaskan komuniti yang menyeluruh melalui pendekatan intervensi tiga dimensi utama bagi menangani kemiskinan dalam kalangan komuniti rentan bandar. Dapatan kajian sebelum ini telah mengenal pasti enam indikator utama yang menyumbang kepada kemiskinan bandar, yang kemudiannya dikelompokkan kepada tiga dimensi utama iaitu dimensi ekonomi, pendidikan dan kesihatan. Berteraskan analisis tersebut, tiga model solusi telah dibangunkan iaitu Model Solusi Ekonomi, Model Solusi Pendidikan dan Model Solusi Kesihatan. Setiap model dirangka dengan pendekatan modular, yang merangkumi latihan, bimbingan serta penglibatan keluarga dan komuniti sebagai sistem sokongan bersepadu. Model Solusi Ekonomi memberi penekanan kepada latihan kemahiran, keusahawanan dan pengurusan keluarga bagi meningkatkan keupayaan kewangan isi rumah. Model Solusi Pendidikan pula memberi fokus kepada pembangunan pelajar dan persekitaran pembelajaran yang kondusif, serta peranan ibu bapa dalam menyokong kejayaan akademik anak-anak. Sementara itu, Model Solusi Kesihatan menekankan pengamalan gaya hidup sihat, kesedaran kesihatan mental dan penjagaan persekitaran. Ketiga-tiga model ini dibangunkan secara integratif bagi mengakhiri kitaran kemiskinan antara generasi melalui strategi yang bersifat komuniti-sentris dan kontekstual. Model ini turut memperlihatkan potensi untuk disesuaikan dalam pelaksanaan dasar dan program pembangunan sosial, khususnya dalam strategi pengurangan kemiskinan bandar yang berfokus dan inklusif. Keseluruhannya, model ini menyarankan satu pendekatan alternatif yang bersifat praktikal dan responsif terhadap keperluan sebenar komuniti, serta boleh dijadikan kerangka rujukan bagi pembuat dasar, agensi pelaksana dan organisasi masyarakat sivil.

Kata Kunci: Kemiskinan, Bandar, Intervensi, Komuniti.

1.0 PENGENALAN

Kemiskinan bandar merupakan fenomena sosial yang semakin mencabar dan memerlukan perhatian khusus dalam landskap pembangunan negara. Berbeza dengan kemiskinan luar bandar yang lazimnya dikaitkan dengan kekurangan sumber semula jadi atau infrastruktur asas, kemiskinan di kawasan bandar mempunyai manifestasi yang lebih kompleks. Ia bukan sahaja melibatkan kekurangan pendapatan, tetapi turut mencerminkan pelbagai bentuk ketidaksaksamaan yang saling memperkuat seperti keterbatasan akses kepada perumahan yang selamat, pendidikan berkualiti, perkhidmatan kesihatan yang mampu milik, jaringan keselamatan sosial yang mencukupi serta peluang ekonomi yang adil dan saksama.

Urbanisasi yang pesat di Malaysia telah mewujudkan tekanan yang besar ke atas struktur sosial dan ekonomi bandar. Peningkatan kos sara hidup yang mendadak, meliputi harga makanan, sewa rumah, kos pendidikan dan perkhidmatan kesihatan telah meletakkan beban yang berat kepada isi rumah berpendapatan rendah. Walaupun terdapat peluang ekonomi yang lebih luas di bandar, ketidakseimbangan agihan pendapatan dan jurang sosial telah menyebabkan kelompok rentan terperangkap dalam keadaan ketidakcukupan yang kronik.

Menurut Jabatan Perangkaan Malaysia (2023), pendapatan garis kemiskinan (PGK) terkini menetapkan bahawa isi rumah yang memperoleh pendapatan bulanan di bawah RM2,589 dikategorikan sebagai miskin. Data terkini menunjukkan bahawa sebahagian besar penghuni perumahan awam berada dalam kategori ini (Lim, 2020). Fenomena ini membuktikan bahawa kemiskinan bandar bukan sahaja realiti statistik tetapi juga cabaran nyata dalam kehidupan harian sebahagian besar masyarakat bandar yang terus bergelut dengan survival asas.

2.0 PERMASALAHAN KAJIAN

Kajian ini berasaskan kepada pengenalpastian enam indikator utama yang menjadi cerminan kepada realiti hidup masyarakat bandar yang berdepan kemiskinan pelbagai lapis. Indikator-indikator ini bukan sahaja berfungsi sebagai penunjuk simptom kemiskinan, malah juga mencerminkan struktur ketidaksaksamaan sistemik yang berlaku dalam masyarakat.

Tiga indikator berada dalam dimensi ekonomi, iaitu: (i) ketiadaan perlindungan sosial dan simpanan (81.80%), (ii) pendapatan isi rumah yang rendah (69.35%), serta (iii) beban hutang isi rumah yang tinggi (66.13%). Ketiga-tiga indikator ini menggambarkan betapa rapuhnya kedudukan ekonomi isi rumah bandar, khususnya dalam menghadapi sebarang bentuk kejutan ekonomi seperti pandemik atau inflasi.

Dua indikator berada dalam dimensi kesihatan, iaitu: (i) masalah hilang keupayaan atau sakit kronik (65.44%) dan (ii) kekurangan zat makanan (27.42%). Keadaan ini memperlihatkan bagaimana kekangan ekonomi memberi kesan langsung kepada kemampuan komuniti miskin bandar untuk mendapatkan penjagaan kesihatan dan pemakanan yang mencukupi, seterusnya menjejaskan kesejahteraan fizikal dan mental mereka.

Satu lagi indikator berada dalam dimensi pendidikan, iaitu kadar tahun persekolahan yang rendah (21.66%). Ini menggambarkan sama ada keciciran dalam pendidikan formal atau keterbatasan dalam akses kepada pendidikan berkualiti, yang menjadi penghalang utama kepada mobiliti sosial dan peningkatan taraf hidup generasi akan datang.

Gabungan keenam-enam indikator ini melambangkan wujudnya satu kitaran kemiskinan yang bukan sahaja sukar untuk diatasi tanpa intervensi yang menyeluruh, malah berpotensi untuk diwariskan dari satu generasi ke generasi seterusnya. Oleh itu, keperluan kepada satu model intervensi berasaskan komuniti yang holistik dan pelbagai dimensi adalah amat mendesak dalam usaha memutuskan kitaran kemiskinan bandar ini.

Kajian oleh Khazanah Research Institute (2020) menunjukkan bahawa golongan B20 mencatatkan peratusan tertinggi dalam penyakit tidak berjangkit (NCD) seperti diabetes dan darah tinggi, yang secara langsung berkait dengan status ekonomi yang rendah. UNICEF & UNFPA (2020) pula menyorot bahawa 45.0% isi rumah yang diketuai wanita tidak mempunyai simpanan mencukupi semasa pandemik COVID-19. Dalam bidang pendidikan, keciciran pelajar dalam kalangan isi rumah berpendapatan rendah berlaku disebabkan kekurangan peranti, capaian internet dan sokongan keluarga (UNICEF, 2018; Abdullah, 2021). Dalam dimensi ekonomi, ketiadaan perlindungan sosial turut dikenal pasti sebagai halangan utama dalam membina daya tahan keluarga miskin bandar terhadap krisis ekonomi (Hasfazli & Ramli, 2021).

3.0 METODOLOGI KAJIAN

Kajian ini menggunakan pendekatan deskriptif kualitatif berasaskan data sekunder yang diperoleh daripada *Kajian Memperkasakan Kehidupan Komuniti Bandar* (Abdul Latif et al., 2023), disokong oleh data daripada laporan rasmi agensi kerajaan, organisasi antarabangsa seperti UNICEF dan UNFPA, serta literatur akademik terkini. Pemilihan indikator kemiskinan dilakukan melalui analisis skor permasalahan tertinggi yang dilaporkan komuniti, di mana enam indikator utama dikenal pasti merangkumi ketiadaan perlindungan sosial dan simpanan, pendapatan isi rumah yang rendah, beban hutang yang tinggi, masalah hilang keupayaan atau penyakit kronik, pengambilan makanan yang tidak mencukupi, dan tempoh tahun persekolahan yang rendah. Keenam-enam indikator ini kemudiannya dikelompokkan kepada tiga dimensi utama iaitu ekonomi, pendidikan dan kesihatan.

Pembangunan model solusi dilaksanakan melalui proses triangulasi dapatan, iaitu menggabungkan hasil analisis data sekunder, rujukan literatur semasa, dan adaptasi daripada pendekatan intervensi sedia ada yang telah terbukti berkesan dalam konteks pembangunan komuniti bandar. Setiap dimensi dibangunkan dalam bentuk modular, yang merangkumi latihan dan bimbingan khusus serta penglibatan aktif keluarga dan komuniti sebagai sistem sokongan.

Pelaksanaan model disusun secara berfasa, bermula dengan pembentukan pasukan pelaksana dan pemilihan peserta, diikuti oleh pelaksanaan modul dan latihan amali, serta bimbingan dan pemantauan berterusan. Pemantauan dilaksanakan secara sistematik bagi mengukur keberkesanan intervensi, manakala penilaian hasil digunakan untuk membuat penambahbaikan sebelum pelaksanaan berskala lebih besar atau penerapan dalam dasar pembangunan sosial.

4.0 DAPATAN DAN PERBINCANGAN

4.1 DIMENSI KEMISKINAN BANDAR

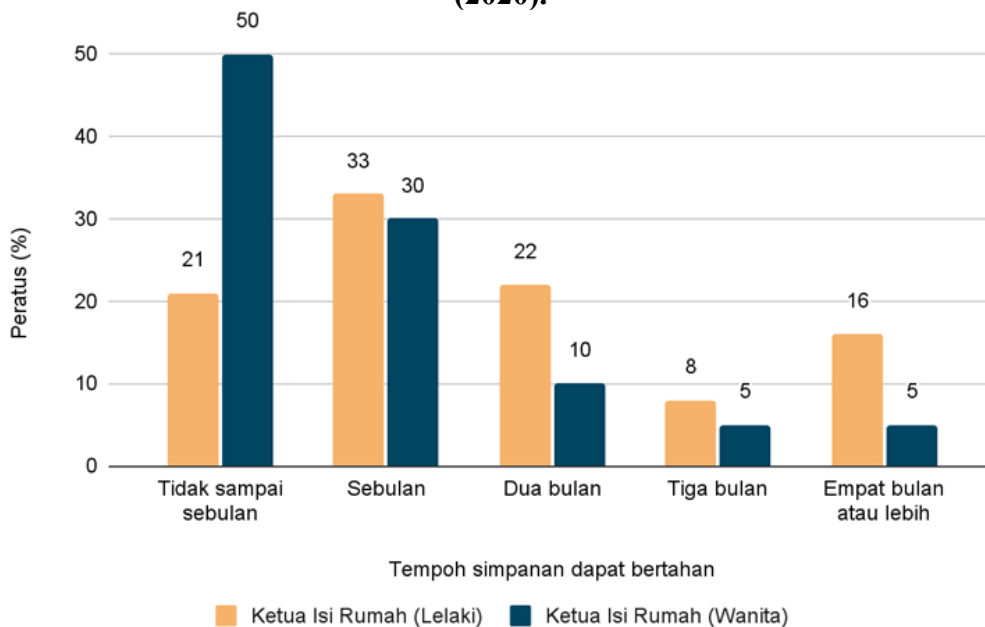
Hasil analisis mendalam terhadap dapatan *Kajian Memperkasakan Kehidupan Komuniti Bandar* (Abdul Latif et al., 2023) menunjukkan bahawa kemiskinan bandar harus difahami melalui tiga

dimensi utama yang saling berkait dan saling mempengaruhi, iaitu ekonomi, pendidikan, dan kesihatan. Setiap dimensi ini mempunyai indikator tersendiri yang mencerminkan cabaran kompleks komuniti miskin bandar serta menjelaskan bagaimana faktor-faktor tersebut berinteraksi dalam membentuk kitaran kemiskinan multidimensi.

4.1.1 DIMENSI EKONOMI

Sebahagian besar isi rumah miskin bandar hidup tanpa simpanan kecemasan dan perlindungan sosial, menjadikan mereka amat rentan terhadap sebarang krisis ekonomi seperti pandemik atau kenaikan mendadak kos sara hidup. Ketiadaan simpanan dan perlindungan sosial seperti caruman Kumpulan Wang Simpanan Pekerja (KWSP) atau insurans menafikan peluang mereka untuk mempunyai benteng kewangan dalam menghadapi kecemasan. Dapatan ini selari dengan UNICEF & UNFPA (2020), yang merekodkan 76.0% isi rumah yang diketuai wanita tidak mempunyai simpanan langsung semasa Perintah Kawalan Pergerakan (PKP). Hasfazli dan Ramli (2021) turut menegaskan bahawa golongan miskin bandar secara umumnya kurang pendedahan kepada instrumen kewangan formal, yang menyebabkan mereka lebih mudah terperangkap dalam hutang jangka panjang.

Rajah 1: Tempoh simpanan yang dapat bertahan. Sumber daripada UNICEF & UNFPA (2020).

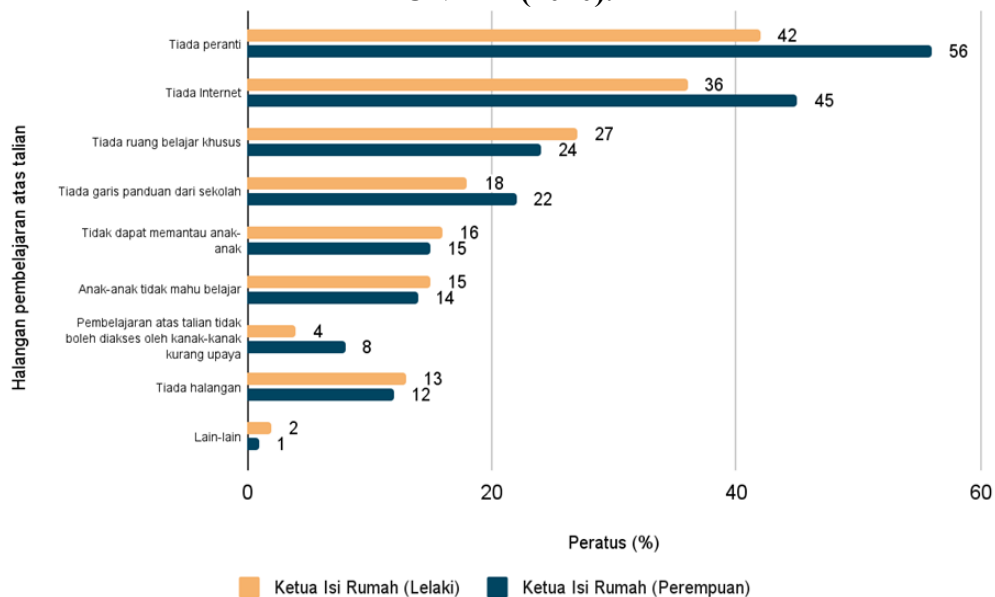


4.1.2 DIMENSI PENDIDIKAN

Tahap pendidikan yang rendah dalam kalangan ketua isi rumah dan ahli keluarga mengehadkan peluang pekerjaan yang lebih baik. Ramai responden hanya menamatkan pendidikan sehingga peringkat sekolah menengah rendah atau setara, dan sebahagiannya tidak menamatkan pendidikan asas. Tahap literasi dan numerasi yang rendah membataskan keupayaan mereka untuk mengakses pekerjaan dengan pendapatan stabil, terutamanya dalam sektor formal yang memerlukan kemahiran khusus. UNICEF (2018) serta Kementerian Pendidikan Malaysia (2019) mendapati jurang pencapaian akademik antara pelajar miskin bandar dan rakan sebaya mereka kekal besar, dipacu oleh kekurangan persekitaran pembelajaran kondusif, bahan pembelajaran yang

mencukupi, dan sokongan akademik keluarga. Abdullah (2021) menambah bahawa “kemiskinan digital” iaitu kekurangan peranti dan capaian internet stabil, telah menjadi faktor baharu yang memperdalam jurang pendidikan ini.

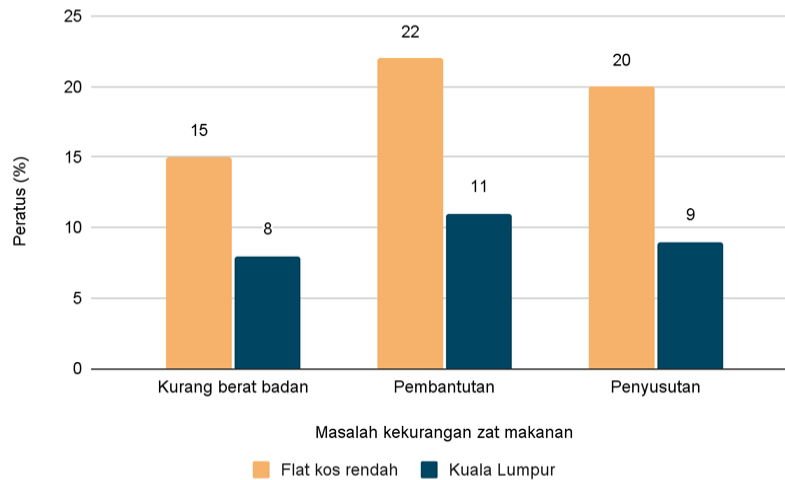
Rajah 2: Halangan-halangan pembelajaran atas talian. Sumber daripada UNICEF & UNFPA (2020).



4.1.3 DIMENSI KESIHATAN

Komuniti miskin bandar terdedah kepada masalah kesihatan kronik seperti penyakit jantung, diabetes, dan masalah pernafasan, selain risiko kehilangan upaya bekerja akibat kecederaan atau penyakit berpanjangan. UNICEF & UNFPA (2020) melaporkan bahawa keluarga berpendapatan rendah lebih cenderung memotong perbelanjaan makanan berkhasiat dan rawatan kesihatan semasa krisis kewangan. Laporan Khazanah Research Institute (2020) turut mengaitkan status ekonomi rendah dengan prevalens tinggi penyakit tidak berjangkit (NCD) di Malaysia, termasuk hipertensi dan diabetes, yang seterusnya mengurangkan produktiviti isi rumah. Faktor persekitaran seperti keadaan perumahan yang sesak dan kebersihan yang kurang terjaga menambah risiko jangkitan penyakit, sekali gus menjejaskan kesejahteraan keseluruhan komuniti.

Rajah 3: Peraturan masalah kekurangan zat makanan dalam kalangan kanak-kanak berumur bawah 5 tahun. Sumber daripada UNICEF (2018).



4.2 PEMBANGUNAN MODEL SOLUSI

Proses pembangunan model solusi berasaskan komuniti ini dirangka secara sistematik melalui beberapa fasa yang saling berkaitan, berasaskan dapatan empirikal daripada *Kajian Memperkasakan Kehidupan Komuniti Bandar* (Abdul Latif et al., 2023), pengetahuan sedia ada daripada literatur terkini, serta penyesuaian terhadap keperluan setempat komuniti sasaran. Pendekatan ini mengaplikasikan kaedah triangulasi, menggabungkan dapatan lapangan, rujukan model yang terbukti berkesan, dan pandangan pakar bagi memastikan model yang dihasilkan bersifat relevan, praktikal, dan mampan.

Penyusunan modul dalam setiap model solusi mengambil kira keutamaan masalah, potensi sumber komuniti, dan tahap kesediaan peserta. Kajian lepas oleh Kabeer (2015) mengenai intervensi komuniti menegaskan bahawa penyelarasan antara latihan kemahiran, sokongan sumber, dan pembinaan jaringan sosial adalah kunci kepada kejayaan model pemberdayaan komuniti. Oleh itu, setiap dimensi dalam model ini dirangka bukan sahaja untuk menangani isu secara terpisah, tetapi juga untuk saling melengkapi bagi membina kapasiti komuniti secara holistik.

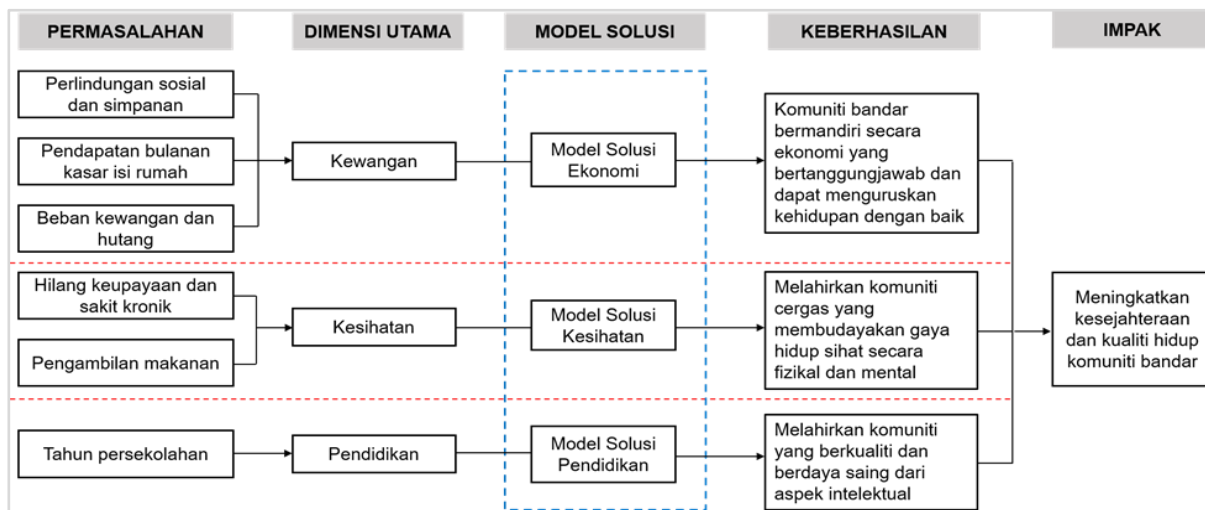
Berdasarkan dapatan yang menunjukkan interaksi kompleks antara dimensi ekonomi, pendidikan, dan kesihatan, satu rangka intervensi menyeluruh dibentuk melalui pembangunan tiga model solusi bersepadu:

1. **Model Solusi Ekonomi** – Memperkukuh daya tahan kewangan melalui modul Pembangunan Insan, Pengurusan Perniagaan, dan Pengurusan Keluarga, lengkap dengan latihan amali dan sokongan modal bagi peserta berpotensi. Pendekatan ini seiring dengan cadangan UNICEF (2018) bahawa program ekonomi komuniti perlu menggabungkan komponen kemahiran dan sokongan modal bagi mencapai keberkesanan jangka panjang.
2. **Model Solusi Pendidikan** – Mempertingkatkan pencapaian pelajar dan penglibatan ibu bapa melalui modul Literasi & Numerasi Asas, Pembangunan Diri, dan Pengurusan Keluarga, disokong oleh kemudahan pembelajaran, peranti, dan akses internet. Abdullah (2021) menegaskan bahawa keberkesanan intervensi pendidikan digital memerlukan penglibatan ibu bapa secara langsung, khususnya dalam keluarga berpendapatan rendah.

3. **Model Solusi Kesihatan** – Meningkatkan amalan gaya hidup sihat melalui modul Pengurusan Kesihatan Fizikal, Kesihatan Mental, dan Kebersihan Persekitaran, dengan pendekatan praktikal dan kempen kesedaran komuniti. Khazanah Research Institute (2020) menyokong intervensi kesihatan komuniti yang menggabungkan kesedaran pemakanan, pengesanan awal penyakit, dan kebersihan persekitaran sebagai cara paling berkesan mengurangkan beban NCD dalam komuniti berpendapatan rendah.

Ketiga-tiga model ini digerakkan secara bersepadu untuk memberi kesan menyeluruh, memastikan peningkatan kualiti hidup yang berterusan, dan **mencegah pewarisan kemiskinan dalam jangka panjang**.

Rajah 4: Carta alir pembangunan model solusi



5.0 CADANGAN DASAR

Berdasarkan dapatan kajian yang mengenal pasti enam indikator utama kemiskinan bandar yang meliputi kerentanan ekonomi (tiada simpanan/perlindungan sosial, pendapatan rendah, beban hutang tinggi), kekangan pendidikan (tempoh persekolahan rendah, kemiskinan digital), dan masalah kesihatan (penyakit kronik, kekurangan zat makanan), beberapa cadangan dasar telah dirumuskan. Cadangan ini bertujuan memperkukuh kapasiti individu, keluarga, dan komuniti secara holistik bagi mengatasi kemiskinan multidimensi secara berkesan.

5.1 PENGARUSUTAMAAN PENDEKATAN PELBAGAI DIMENSI DALAM DASAR PENGURANGAN KEMISKINAN BANDAR

Dapatan menunjukkan 81.80% isi rumah tiada perlindungan sosial atau simpanan, 69.35% berpendapatan rendah, dan 66.13% menanggung beban hutang tinggi (Abdul Latif et al., 2023; UNICEF & UNFPA, 2020). Dalam masa yang sama, faktor pendidikan dan kesihatan yang saling mempengaruhi mengukuhkan lagi kitaran kemiskinan.

Sehubungan itu, kerajaan dan pembuat dasar disarankan untuk menginstitusikan pendekatan pelbagai dimensi yang menggabungkan intervensi ekonomi, pendidikan, dan kesihatan dalam dasar pengurangan kemiskinan bandar. Tiga kerangka intervensi yang dibangunkan dalam kajian ini iaitu Model Solusi Ekonomi, Model Solusi Pendidikan, dan Model Solusi Kesihatan, boleh

disepadukan dalam program agensi kerajaan tempatan dan NGO. Penekanan perlu diberi kepada pembangunan modal insan, pemerkasaan kemahiran keusahawanan, penglibatan ibu bapa dalam pendidikan, dan pembinaan jaringan sokongan komuniti secara berterusan.

5.2 INSENTIF PERLINDUNGAN SOSIAL BERSASAR BAGI ISI RUMAH RENTAN

Isu ketiadaan simpanan (81.80%) dan beban hutang yang tinggi (66.13%) meletakkan komuniti miskin bandar dalam kedudukan rapuh terhadap kejutan ekonomi (Hasfazli & Ramli, 2021). Justeru, skim perlindungan sosial perlu dipertingkatkan dengan memperkenalkan skim simpanan padanan (*matching savings*) dan bantuan kewangan bersyarat (*conditional cash transfer*) yang disasarkan kepada isi rumah rentan.

Pelaksanaan insentif ini perlu mematuhi prinsip ketelusan dan keberkesanan jangka panjang. Selain itu, insentif kewangan boleh dihubungkan dengan latihan peningkatan kemahiran bagi memastikan penerima bantuan dapat meningkatkan daya tahan ekonomi secara mampan, sejajar dengan cadangan UNICEF (2018) bahawa bantuan kewangan yang disertakan komponen kemahiran lebih berimpak dalam jangka masa panjang.

5.3 PENINGKATAN AKSES KEPADA PENDIDIKAN DIGITAL INKLUSIF

Dapatan menunjukkan 21.66% responden mempunyai tempoh persekolahan rendah, dan ramai pelajar miskin bandar menghadapi kekangan peranti serta capaian internet (UNICEF, 2018; Abdullah, 2021). Hal ini menghalang peluang mereka untuk bersaing dalam pasaran kerja masa hadapan.

Kerajaan disarankan untuk memperkasa pendidikan digital melalui penyediaan peranti elektronik, capaian internet stabil, dan ruang pembelajaran kondusif yang boleh diakses di peringkat komuniti. Pendekatan ini mesti disokong oleh penglibatan aktif ibu bapa sebagai pemudah cara pendidikan di rumah, selaras dengan cadangan Abdullah (2021) bahawa sokongan keluarga adalah faktor kritikal dalam kejayaan pembelajaran digital. Inisiatif ini juga perlu diintegrasikan dengan program sokongan komuniti seperti pusat pembelajaran setempat dan mentor akademi

6.0 RUMUSAN

Kajian ini membuktikan bahawa kemiskinan bandar di Malaysia bukan sekadar persoalan kekurangan pendapatan, tetapi mencerminkan ketidaksaksamaan sistemik yang bersifat berlapis dan saling mengukuhkan. Analisis terhadap enam indikator utama merangkumi dimensi ekonomi (ketiadaan simpanan/perlindungan sosial, pendapatan rendah, beban hutang tinggi), dimensi pendidikan (tempoh persekolahan rendah, kemiskinan digital), dan dimensi kesihatan (penyakit kronik, kekurangan zat makanan) mengesahkan kewujudan kitaran kemiskinan multidimensi yang cenderung diwarisi merentas generasi.

Sebagai respons strategik, kajian ini membangunkan tiga kerangka intervensi bersepadu yang berasaskan komuniti:

1. Model Solusi Ekonomi untuk memperkukuh daya tahan kewangan isi rumah.
2. Model Solusi Pendidikan bagi meningkatkan pencapaian akademik dan penglibatan ibu bapa.

3. Model Solusi Kesihatan untuk memperbaiki amalan kesihatan fizikal, mental, dan kebersihan persekitaran.

Setiap kerangka direka bentuk secara modular, menggabungkan latihan kemahiran, pembangunan kapasiti, sokongan sosial, dan pemantauan berterusan. Pendekatan ini selaras dengan cadangan literatur terkini (UNICEF, 2018; Khazanah Research Institute, 2020; Hasfazli & Ramli, 2021) bahawa intervensi komuniti yang bersepadu mampu memberi kesan yang lebih mampan berbanding pendekatan sektoral yang terpisah.

Implikasi kajian ini amat signifikan. Model intervensi yang dihasilkan boleh dijadikan kerangka rujukan praktikal bagi pembuat dasar, agensi pelaksana, NGO, dan institusi masyarakat sivil untuk mereka bentuk program pengurangan kemiskinan bandar yang bersasar dan inklusif. Lebih daripada itu, pendekatan ini mengembalikan agensi dan maruah kepada komuniti rentan menjadikan mereka bukan sekadar penerima bantuan, tetapi pemacu perubahan dalam kehidupan mereka sendiri.

Secara keseluruhannya, kajian ini menyeru kepada anjakan paradigma dalam menangani kemiskinan bandar: daripada pendekatan reaktif kepada penyelesaian yang transformasi, bersepadu, dan berasaskan bukti. Sekiranya dilaksanakan secara konsisten, kerangka intervensi ini berpotensi menghentikan pewarisan kemiskinan antara generasi dan membentuk masa depan komuniti bandar yang lebih sejahtera, bermaruah, dan berdaya saing.

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THE PERSPECTIVES OF THE COMMUNITY IN ADDRESSING THE UNMET NEEDS FOR FAMILY PLANNING/CONTRACEPTION IN KUALA SELANGOR

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ABSTRACT

Contraceptive and family planning (FP/C) methods are vital tools in promoting reproductive health, reducing maternal and child mortality, and breaking the cycle of poverty in low-income settings. However, despite their well-documented benefits and efforts to improve accessibility, the use of FP/C remains low in many poor countries, and unmet needs for family planning continue to pose significant challenges. This qualitative study aimed to explore community perspectives, perceived barriers, and potential strategies for addressing the unmet needs of FP/C. A phenomenological exploratory design was used to gain in-depth insights from the lived experiences of 11 women from the community. Participants were selected using the snowball sampling technique, and data were collected through semi-structured interviews guided by an adapted version of the interview guide from Cordero et al. (2019). Thematic analysis of the transcribed interviews led to the identification of nine key themes and 31 subthemes. The main themes that emerged included: (1) Understanding of FP/C, (2) FP/C uses, (3) Decision to unmet FP/C, (4) Acceptability, (5) Lack of awareness and knowledge of FP/C, (6) Lack of support and negative perception, (7) Deficient quality services, (8) Integration and quality of services, and (9) Community participation. The findings revealed a complex synergy of personal, socio-cultural, and systemic factors that influence the use of FP/C. These insights highlight the need for improved education, community engagement, service quality, and supportive environments that empower individuals especially women to make informed decisions about their reproductive health. Ultimately, addressing these factors is critical to reducing the unmet need for family planning and enhancing overall community health and development.

Keywords: Community, Unmet Needs, Family Planning, Contraception.

INTRODUCTION

Contraception was the used of numerous techniques to prevent a woman from getting pregnant; and according to the World Health Organization (WHO), it was usually linked to family planning; to anticipate and achieve the desired number of children by spacing and timing their pregnancies (Cambridge Dictionary, 2022; WHO, 2019).

Unmet need was women who were capable of reproducing and sexually active but did not want to have a kid and they did not use current contraceptive methods (WHO, 2020). According to World Health Organization (2020), among the 1.9 billion women of reproductive age group (15-49 years) worldwide in 2019, 1.1 billion had a need for family planning; of these, 842 million were using contraceptive methods, and 270 million had an unmet need for contraception.

Furthermore, there were two types of contraceptives which were modern and natural methods. Modern methods could be divided into four categories, hormonal, chemical, mechanical and surgical. Indigenous contraception, also known as natural or traditional family planning techniques commonly used were periodic abstinence, withdrawal, breastfeeding, herbs, postpartum abstinence, and waistbands (Moroole et al., 2020).

The community had a significant influence on practicing family planning among individuals. However, a few factors could affect individual preferences, such as a lack of knowledge, pessimistic beliefs about participation outcomes, and a lack of trust in participatory progress. (Silumbwe et al., 2020).

In addition, family planning allowed women to plan their pregnancies and decide how many children they want. Its use provided many further benefits for people, couples, communities, and society, including increased maternal and child health, educational advancements, poverty reduction, and women's empowerment (Mutumba et al., 2018).

According to Rohmah et al. (2021), unwanted pregnancy was the aftermath of contraceptive failure. Unwanted pregnancies were unhealthily conceived pregnancies that could burden mothers. 90% of undesired babies were the result of unplanned pregnancies. The complexity of social, cultural, political, and religious variables, especially for adolescents, affected the availability and usage of contraceptive techniques and exposure to contraceptive education and information (Todd & Black, 2020).

METHODS

This study employed the phenomenological exploratory qualitative study to explore the perspectives of the community, barriers and strategies in addressing the unmet need for FP/C among 11 women. Snowball sampling technique was used to identify the participants for this study. In-depth-interview were conducted using interview guides were recorded to ensure accurate transcriptions. Each participant was assigned a pseudonym for anonymity, and the transcripts were adjusted accordingly and checked with the supervisor before transcriptions were analysed. Experts in the field reviewed themes that emerged throughout data analysis to enhance trustworthiness. The original transcription and a few new themes were compared to ensure that the subjects directed the data analysis and interpretation. Transcripts were analysed using the original language in Microsoft Word format. The transcription was revised by listening and re-listening to the audio recording. The transcription is then given back to the participant for member checking. Atlas.Ti software facilitates data screening, coding and theme development processes.

The initial inductive coding process is used to label data with codes according to the subjects mentioned by participants, then identify and give headings to the codes to separate and organise

them into a final structure. This process repeated until a stable code system was established. Grouping codes with similar attributes created group codes. In this process, themes, sub-themes, categories, and subcategories were yielded. When the data were overly coded into a single theme, the theme's suitability was reevaluated to make it more specific. The produced themes were revised to ensure they were distinct and did not overlap. Selected participant quotes were translated into English while preserving speech patterns. A professional translator experienced in qualitative analysis and proficient in Malay and English verified the translations, the researcher made necessary corrections to enhance the research's credibility. This thorough process ensured the reliability and accuracy of the study's findings.

RESULT

Nine thematic areas met the selection criteria including (1) Understanding of FP/C, (2) FP/C uses, (3) Decision to unmet FP/C, (4) Acceptability, (5) Lack of awareness and knowledge of FP/C, (6) Lack of support and negative perception, (7) Deficient quality services, (8) Integration and quality of services, and (9) Community participation. (Table 4.2).

Table 4.2: Themes and sub-themes

Objectives	Themes	Sub-themes
To understand the perspectives of unmet needs for family planning/contraception among the community	Understanding of FP/C	Meaning of FP/C Types of FP/C Benefits of FP/C
	2. FP/C uses	Practices Contraceptive preferences
	3. Decision to unmet FP/C	Nonessential The demand to have children Confident and self-control Noncompliance Side effects and poor perceptions
To explore the barrier in utilizing the family planning/contraception services among community	Acceptability	Religious objections to contraception molded values
	Lack of awareness and knowledge	Awareness of FP/C Quality of information Male partner involvement Lack of outreach and educational program
	Lack of support and negative perception	Husband Family and friend Community participation and stakeholder

	Deficient quality services	a. Dedicated space for FP/C b. Long waiting time and limited time dedicated for FP/C c. Lack of follow-up and continuity care d. Poor or negative attitude of the provider e. Accessibility of services
To explore the strategies of the community in addressing the unmet need for family planning/contraception	Integration and quality of services	Quality of information Continuity of care Privacy and confidentiality Reach out program Early exposure
	Community participation	Representative roles FP/C-engaging program

1. Understanding of FP/C

Understanding of FP/C was identified as the first themes for the first objectives of this study. It was divided into three sub-themes which were the meaning, types and benefits of FP/C. Most of the participants showed an understanding of FP/C, especially in terms of the definition. Almost all of them define FP/C as determining the spacing of pregnancy. The perspectives of participants towards the type of FP/C were not comprehensive; in which most of them know about pills, injections, implants, tubal ligation, and condoms. Among the benefits of FP/C shared by the participants were to avoid unintended pregnancy, better outcomes for children, economy, and health factors.

As far as I understand, if we practice family planning, it means that we plan the distance between the children.

(P10:1 ¶ 5)

So far I know, aaa... pills, Depo injection... aaa what else? Aaa implants and another one aaa surgery...

(P7:3 ¶ 53)

2. FP/C uses

FP/C uses can be divided into two groups which are practices and contraceptives preferences. Most of the participants either did not use the FP/C method at all (4/11) or some used modern methods such as pills and condoms but failed or did not continue using them for certain reasons (6/11), while two of the participants practices traditional methods such as calendar and lactation amenorrhea method (LAM) to plan their pregnancy.

Among the seven participants who had used FP/C, all of them chose to use modern methods such as pills and condoms but they failed to continue.

I actually have no experience in using... aaa family planning.

(P3:20 ¶ 5)

Sometimes, I forget to take the pills.

(P8:3 ¶ 28)

3. *Decision to unmet FP/C*

Some of the reasons mentioned by the participants are nonessential, demand to have children, confidence and self-control, noncompliance, side effects and poor perceptions. Participants have no intention of spacing the pregnancies, and are supported by factors including distance between them and their partner. Next, the demand to have a child following the grieving after losing their newborn. Thus, to cure the sadness, the participants decided not to use FP/C. Apart from that, the age factor also influenced their decision not to use FP/C. The health problems faced during pregnancy and birth caused the participants not to use FP/C and prefer to practice traditional methods. With the help of tracking apps, the participant managed to monitor their fertility using the traditional method (calendar), making them more confident and not in their self-control and decided not to use modern FP/C. Noncompliance also leads to the decision to unmet FP/C among the participants. Participants shared that they often forgot to take the pills and decided to stop consuming the pills because they think it is a waste. There were participants who stopped taking FP/C because they experienced weight gain and emotional disturbances, and this strengthened the poor perception of FP/C due to the negative health consequences.

aaa family planning, for me, it is not necessary... aaa because I don't have any... aaa desire to distance my child...

(P3:21 ¶ 5)

aaa the first child died...so sometimes we feel like...like we need a baby...

(P5:16 ¶ 5)

I used to have problems during my pregnancy and had problems with certain medications... so I was afraid to take other medicines...

(P7:30 ¶ 101)

4. *Acceptability*

Religious factors also drove the unmet need for FP/C. Some participants believed that children are gifts from God that should not be rejected. The acceptance of FP/C is influenced by the molded values that have been formed in the community since long ago. Some participants said that FP/C is associated with sex and personal matters that make them embarrassed to discuss it openly.

I don't think it's necessary, because sustenance can come at any time... there's no need to plan.

(P4:26 ¶ 25)

One more thing, aaa sometimes women... is shy to ask. She feels embarrassed to ask... because aaa... for this family planning, people say, it is related to internal matters, embarrassed to ask outsiders...

(P6:16 ¶ 101)

5. *Lack of awareness and knowledge*

Awareness of FP/C, quality of information, male partner involvement, lack of outreach and educational programs were identified as sub-themes for these themes. Awareness and understanding are the main hindrance to the use of FP/C. Participants said that people may not know and understand family planning. Awareness and understanding are the main hindrance to the use of FP/C. Participants said that people may not know and understand family planning. Participants said that the information they received related to FP/C was insufficient, especially the range of methods available, and they were not given an opportunity to choose according to their needs. Lack of husband's involvement in FP/C service provision causes the male partner failure to understand it and to get involved in FP/C decision-making. This involvement will help in decision-making or choice and would influence the utilization of FP/C. Lack of outreach and education programs is another barrier to the dissemination of information regarding FP/C.

Some of these women don't know... don't know about family planning...

(P6:14 ¶ 101)

The info we get... actually... it's not enough.

(P1:14 ¶ 165)

When I received the explanation, the nurse didn't let my husband in. He was asked to wait outside.

(P4:16 ¶ 101)

It's rare and doesn't exist... wherever I go to any expo, or shopping complex... there is no family planning program...

(P2:53 ¶ 161)

6. *Lack of support and negative perceptions*

Most of the respondents shared that the main barrier was the support from husbands in utilizing FP/C. The negative perception from family and friends also affects the woman utilizing FP/C. Besides, there was a lack of community participants and the stakeholder in supporting the FP/C program.

It is because there is no support from the husband. My husband doesn't give permission, so... we as wife don't even look for it.

(P6:13 ¶ 101)

The opposition from family and friends when they ask "Are you planning? Don't you want children?" Like that...

(P11:2 ¶ 41)

There are no active associations in this village to organize health activities.

(P4:17 ¶ 109)

7. *Deficient quality services*

Most of the participants shared that the obstacle to the utilization of FP/C was due to the health service unable to provide a dedicated place for FP/C. They need to share space with other

services that compromise privacy and confidentiality. Participants' perception of the quality of services is affected by long waiting times and limited time dedicated for FP/C services which hinders the utilization of FP/C. Participants revealed that there was lack of follow-up and continuity care related to FP/C. Participants claimed that the poor or negative attitude of the provider was amongst the barriers to utilize FP/C. The use of FP/C depends on the accessibility of the service. According to some participants, facilities that provide FP/C services are far from where a person lives. For example, LPPKN is unavailable in rural areas.

Then the room... for consultation is quite small... with a lot of patients...

(P2:48 ¶ 148)

Then the waiting time, yes... that is undeniable... not only the government clinic, but the government hospital is also the same... some people are fed-up to wait... it took an hour to half a day to get consultation...

(P2:35 ¶ 149)

They only asked about this when I attended my child's check-up when she was one month old. For the next check-up, there are none...

(P4:13 ¶ 84)

But the way the nurses asked about this was like she's forcing me...

(P4:10 ¶ 49)

8. *Integration and quality of services*

Participants demand a clearer explanation regarding FP/C so that they understand. Some participants suggested that the healthcare provider should prepare teaching aids such as brochures or pamphlets. Some participants agreed that a doctor or specialist is the most appropriate consultant to convey information related to FP/C. According to them, information from doctors or specialists is more accurate and makes them understand more about FP/C. Quality of care can be divided into several categories which is to create continuity of care. Participants suggested that healthcare providers ask about FP/C every time people attend a check-up. The community believes that FP/C is related to personal matters that cannot be discussed openly, so most participants prefer to maintain privacy and confidentiality when receiving information about FP/C. Some participants suggested individual meetings with doctors or nurses, which allow them to feel comfortable and reassured by asking questions they don't understand about FP/C.

One of the strategies to increase the use of FP/C in the community is through health programs related to FP/C. Some participants suggested that healthcare providers conduct a campaign related to FP/C in rural areas where people may have difficulty getting FP/C services at facilities far from where they live. Participants believe that awareness about FP/C needs to be fostered from the beginning, such as prioritizing young mothers, and should be introduced at the school level. Participants suggested requiring husbands to participate during the check-up when providers provide information related to FP/C.

And if it's possible, let the consultant be a doctor or consultant who is really an expert in family planning. So, the patient will probably judge from there. Aaa maybe there are people who don't want to use this family planning, maybe when they get information from an expert, they will change their mind aaa to use family planning...

(P6:21 ¶ 117)

Because sometimes when we want to talk about family planning, sometimes it is more about privacy, you know. So, when there's a room like the two of us with the staff nurse. So, we are open to share something.

(P9:17 ¶ 189)

They can focus on programs related to family planning... near rural areas... near areas where there are many unprivileged people...

(P2:46 ¶ 193)

9. Community participation

Representative roles are essential in promoting the use of FP/C. Some participants suggested their representatives approach healthcare providers to hold FP/C-related programs in their community areas. The participation of members from various races as community representatives was also suggested to attract the community's involvement in various races' activities. Some participants suggested creating a particular slot or a class for FP/C in the community activities, such as the family day they organized.

In a community there must be some kind of female representatives, right? I think they are the ones who have to approach these health workers to give more information to the community.

(P9:15 ¶ 165)

Maybe we can also hold a special day for family planning. Aa so aa everyone who wants the information can come on that day aa...

(P8:20 ¶ 280)

DISCUSSION

Demographic Characteristics of the Participants

This present study involved eleven (11) women who were identified as unmet to FP/C age was between 21 to 47 years old; with minimal education of secondary school (SPM-Sijil Pelajaran Malaysia); had none to 5 children; and six of them were working. The methodology of the study and the number of participants in this current study was aligned with a qualitative study that focused on the utilization of FP/C; in which they used individual in-depth interviews and involved 12 participants (Law et al., 2019).

However, there were similar studies that involved quite a large number of participants by using Focus Group Discussion (FGD) where in each group, there were 7-10 participants (Dansereau et al., 2017; Cordero et al., 2019; Msoka et al., 2019; Jafrin et al., 2022).

Four of the participants had never practiced any form of FP/C before, while seven of them had used modern FP/C such as Oral Contraceptive Pills (OCPs) and condoms while one of them completely used traditional methods such as Lactation Amenorrhea Method (LAM) and calendar method. This study showed that although seven participants had previously used FP/C, only five used the modern method.

Six of them were identified as unmet to FP/C, which they were never practiced, or they used traditional methods for FP/C. This is the definition of unmet FP/C; sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child WHO (2020) or were not using a modern method to prevent pregnancy (Cordero et al., 2019).

The perspectives of unmet needs for family planning/contraception among the community

Although most of the participants were classified as unmet FP/C, their understanding regarding FP/C was satisfied; in which most of them were able to define FP/C as spacing of pregnancy, but none of them realized that FP/C could allow people to attain their desired number of children as defined by WHO (2019); Bahuguna et al. (2023); Renaut & Pettersen (2023). Even though the knowledge regarding FP/C in this study was sufficient (Lee et al., 2019), the understanding was not comprehensive; most only knew about pills, injections, implants, tubal ligation, and condoms. This was similar to a study that reported that women were only aware of FP/C at least one method, such as pills and injections (Dingeta et al., 2019; Bahuguna et al., 2023). Most participants believed FP/C could avoid unintended pregnancy and better outcomes for children, economy, and health factors, but their practice was still low (Lee et al., 2019). In conclusion, even with a deeper understanding of FP/C but it is rarely translated into practice (Yusoff et al., 2022; Renaut & Pettersen, 2023)

As for the practices, most of the participants either did not use the FP/C method at all, or some used modern methods such as pills and condoms but failed or did not continue using them for certain reasons such as noncompliance to the method or due to health factors (Cavallaro et al., 2018; Moreira et al., 2019). This study revealed that the participants who unmet FP/V are more likely to use LAM and calendar methods to plan their pregnancy. This coincided with a study reported that many participants demonstrated confidence in LAM. This has, thus, made the women reluctant to use contraceptive services as per the doctors' advice. "The doctor advised me to use breastfeeding for child spacing. That is the only method the doctor told me" (Gele et al., 2021).

While a calendar is influenced mainly by a literal calendar to track their cycle and predict fertile (ovulation) days, others use modern technology such as period or fertility apps to track (Smothers, 2018). With the help of tracking apps, the participant managed to monitor their fertility using the traditional method (calendar), making them more confident and not their self-control, and they decided not to use modern FP/C. this was supported by a study revealed that the non-user who was confident of controlling fertility through self-control and traditional methods and had a strong belief that the modern contraceptive was not the only way to achieve the benefits of family planning like limiting a number of children and spacing between them (Bahuguna et al., 2023).

This current study revealed that the most preferred method of FP/C was pills and condoms. This is due to the convenience, available without a doctor's prescription and available over the counter (Long et al., 2022), while condom was the primary pregnancy and STD/HIV prevention which is a free procedure with no health concerns (Asadi Sarvestani et al., 2017; Szucs et al., 2020).

Several reasons for the decision to unmet FP/C were discovered in this study. One of the reasons for unmet FP/C among the women in this study was the nonessential practice FP/C. The perspective of no intention of spacing the pregnancies by the participant's point of view and the long-distance relationship related to "infrequent sex".

This was supported by a study reported that "infrequent sex," was the second most reported reason for nonuse of FP/C, and it was associated with those who had higher levels of education, had more wealth, and had no children (Moreira et al., 2019) which this was similar too with the current study.

Another factor for the unmet need of FP/C is the demand to have a child following the grieving after losing their newborn. Thus, the participants decided not to use FP/C to cure the sadness. Apart from that, the age factor also influenced their decision not to use FP/C. This was similar to the study, which reported that the desire to have children was the other factor that affected the unmet need for family planning (Girma Garo et al., 2021).

The health problems faced during pregnancy and birth caused the participants not to use FP/C and prefer to practice traditional methods such as LAM and calendar were also found to be the reason for the unmet need for FP/C. This was aligned with a study that found that the most prevalent reasons for the nonuse of contraceptives were "health concerns" and was more frequently reported among older women, had higher levels of education, had more wealth, were married or living with a partner, had at least one child, and among those living in urban areas which similar with the finding in this current study (Girma Garo et al., 2021)

Noncompliance also leads to the decision to unmet FP/C among the participants. Participants shared that they often forget to take the pills and decide to stop consuming the pills because they think it is a waste. Women who do not establish a routine or fail to associate FP/C pills intake with another daily activity, such as applying make-up or brushing their teeth (Chabbert-Buffet et al., 2017). This situation is also experienced by patients who have to take medicine regularly and are convinced to stop taking medication when they fail to perform it (Mandawa & Mahiti, 2022).

The side effects and the poor perceptions were another rationale for unmet FP/C in which some participants stopped taking FP/C because they experienced weight gain and emotional disturbances, and this strengthened the poor perception of FP/C due to the negative health consequences. This was supported by studies stated that women who stop taking the pill often do so because they think it has been causing them to gain weight (Cordero et al., 2021). The reasons for rejecting hormonal contraception were problems related to physical side effects; altered [mental health](#); negative impact on sexuality; concerns about future fertility; invocation of nature; concerns about menstruation; fears and anxiety; and the [delegitimization](#) of the side effects of [hormonal contraceptives](#) (Le Guen et al., 2021).

The barrier in utilizing the family planning/contraception services among the community

There were barriers in utilizing the family planning/contraception services among the community in this study. The acceptability of using FP/C was driven by religious concerns in which some participants believed that children are divine gifts that should not be disregarded. Some individuals denied using any FP/C techniques and thought that children were a gift from God (Bhatt et al., 2021).

The molded values developed in the community have also impacted the acceptability of FP/C. The participants claimed that because FP/C is connected to sex and other private issues, they feel awkward talking about it in public. This was supported by studies by Bhatt et al. (2021), where participants mentioned that they felt awkward discussing FP/C in public.

The biggest obstacles to using FP/C are awareness and comprehension. According to participants, people might need to be aware of and comprehend family planning. This was supported by studies that stated community members believed that not utilizing FP/C or ceasing was mainly due to a lack of information (Cordero et al. 2019).

This study showed that the participants stated that they needed more information on FP/C, particularly regarding the variety of potential approaches, and that they were not given a chance to decide based on their needs. Cordero et al. (2019) stated that people should be allowed to pick a technique that best suits their needs after receiving enough information about the various options available.

Another barrier to utilizing the FP/C was the involvement of male partners. The male partner's inability to comprehend and participate in FP/C decision-making results from the husband's lack of engagement in providing FP/C services. This engagement will aid decision-making or choosing and affect how FP/C is used. This study was aligned with a study by Cordero et al. (2019) which male participation was viewed as inappropriate because FP/C services were thought to be female-focused and affected males in decision-making. Also, it stated that it believed FP/C to be a female problem.

The lack of outreach and engagement program that involves the HCP and the community was another barrier to raising awareness about FP/C. There was limited evidence about the extent of the outreach in providing FP messages and services. Whereas with the FP/C, communication, and services from the HCP through outreach programs positively and significantly affected the intention to use FP/C (Kumar et al., 2020).

Lack of support and negative perception were other barriers to utilizing FP/C. The majority of respondents acknowledged that the greatest obstacle to using FP/C was the husband's support. Some do not allow the use of FP/C, and some less engage or support it. A study by Maqboo et al. (2022) underlined that most women who have had abortions do not utilize contraception because they fear their husbands would object.

Aside from that, the woman using FP/C is also impacted by the negative perception of family and friends. The community enjoys having many kids; males and mothers-in-law are crucial in preserving tradition, including choosing how many kids to have (Cordero et al., 2019).

The involvement and the support from community participation and stakeholder regarding FP/C was insufficient. None of the participants got any information or were involved in the FP/C program conducted by their community representative, including the women's group. These involvements were essential in providing community input regarding FP/C, which will help enhance the practice of utilizing FP/C. These findings agree with a previous study showing that community members stated that participatory programs were advantageous if they facilitated the sharing of information, skills, and resources (Silumbwe et al., 2020)

The deficient quality services were discovered as other barriers to utilizing the FP/C. Most participants said that the health service's inability to offer a particular location for FP was the main barrier preventing the use of FP.

Since they must coexist with other services, confidentiality, and privacy are at risk. This was supported by a study that it was necessary to get quality FP/C services by getting a dedicated space for FP/C (Cordero et al., 2019).

Long waiting times also impacted participants' perceptions of service quality, preventing them from using FP/C. This was linked with a study by Cordero et al. (2019) in which limited time dedicated to FP/C services and long wait times were caused by giving maternity centers greater priority than FP/C clinics.

Lack of consistency and follow-up care for FP/C affected the perceptions of the quality of services. This was supported by a study by Tanabe et al. (2017), found that there was a system in place in Eastleigh that referred people to options for FP/C, but referrals were not followed up on.

Other hurdles related to the deficient quality services were bad or negative attitudes from the providers. This was supported by a study by Cordero et al. (2019) that stated that the most frequent possible barrier mentioned was the poor attitude from the HCP.

The use of FP/C is reliant on the service's availability was another factor related to the deficient quality of services. Some participants claimed that FP/C service facilities were far from where people lived, and facilities were unavailable in certain areas. The same findings from a study by Cordero et al. (2019) showed large travel distances people require to get services due to a lack of facilities.

The strategies of the community in addressing the unmet need for family planning / contraception

The strategies in addressing the unmet for FP/C were the integration and quality of service, among which is the quality of information. Participants request further explanation on FP/C so they can comprehend. Participants recommended that the healthcare practitioner create instructional materials like booklets or pamphlets. Sales et al. (2019) stated that clinics should use posters, phone calls, SMS, emails, and brochures to spread information. Some participants concurred that the need for a well-trained HCP and good client care in delivering FP/C increases the acceptability of the services.

Comprehensive and evidence-based information was also needed to ensure accurate and effective care to enable informed decision-making for the user, the male partner, and the community members to increase awareness and deal with myths or misconception which influences the utilization of FP/C (Cordero et al., 2019).

The need for continuity of care was another strategy that the participants recommended. They suggest that healthcare professionals inquire about FP/C every time a patient comes in for a checkup to continuously and constantly motivate and encourage the usage of FP/C to increase acceptance and continued practice of family planning by clients (Kassim & Ndumbaro, 2022).

Privacy and confidentiality were other areas in addressing the unmet need for FP/C in which the majority of the participant desire to retain privacy and confidentiality while getting information

regarding FP/C from the doctors or nurses because they feel that FP/C is connected to private problems that should not be addressed in public.

This was supported by a study in South Africa which reported that providing a private, dedicated FP/C room for counseling will enhance interpersonal relationships and good client care. This will also help reduce the discrimination against men and encourage the husband's involvement, especially in the FP/C decision-making (Cordero et al., 2019).

Early exposure to FP/C was the approach suggested by most participants. They agreed that FP/C awareness has to be promoted from the start, in which this FP/C information should be shared from parents to their children; need to be touched in school; need to be highlighted in the community; and the increase of support from the male partner as well as mothers-in-law which were the significant barriers to FP/C uptake (Cordero et al., 2019).

Another suggestion was that FP/C should be initiated early as during the pre-pregnancy and prenatal, to promote the utilization of FP/C as supported by AlDughaishi et al. (2023), which suggested the HCP should provide prenatal health education regarding FP/C typically just after the women getting pregnant in a relatively brief manner.

Lastly was the community's participation in addressing the unmet need for FP/C. Promoting the usage of FP/C requires representative roles, which are crucial. The participants suggested their representatives speak with healthcare professionals about hosting FP/C-related programs in their local communities. It would be easier for the community to participate if prominent community members, such as council members, religious figures, headmen, and chiefs, were involved in efforts to provide community FP/C services (Silumbwe et al., 2020). This was supported by Cordero et al. (2019) reported that the community members needed more information about side effects to make informed decisions about their FP/C use and to facilitate continuation.

FP/C reach-out and engaging program was another suggestion in addressing the utilization of FP/C. This method not only assists in the awareness of FP/C but it helps to reach directly to the community, enhance the practices and enable to overcome the issues such as the distance and the attitude of "lazy" to go to the clinic for FP/C (Cordero et al., 2019). Family planning programs need to focus on areas where progress is lacking (Cahill et al., 2018).

Another suggestion was the initiative of youth-friendly and husband-friendly FP/C corners to enhance the involvement of the young and male partners in FP/C (Bhatt et al., 2021; Silumbwe et al., 2020).

Recommendation

In this study, the researcher did not focus on communities in rural areas. The result might differ as the community's lifestyle, and the availability of the services might be slightly different compared to communities in urban areas. As a result, the findings cannot be extrapolated to rural areas in other nations with differing demographics. The study focused on the health system aspects of accessibility, acceptability, and affordability as the major utilization barrier. This issue has to be

resolved to improve the use of contraceptive techniques by both spouses. The researchers should interview people from different races in the next study, as Malaysia has a multiracial society.

CONCLUSION

All three objectives in this study, which used the qualitative method, have been achieved. There were many perspectives of unmet needs on FP/C among the community as each participant faced different experiences and opinions regarding FP/C. Also, the participants stated that many barriers that make them have a problem utilizing the FP/C services. Lastly, the participants also suggested strategies and recommendations to improve the FP/C services in Malaysia.

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033-031

**COUNTERURBANIZATION, MIGRATION, AND DEMARGINALIZATION:
RETHINKING INCLUSIVE STRUCTURAL SYSTEMS FOR VULNERABLE GROUPS
IN EMERGING ECONOMIES**

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ABSTRACT

Emerging economies are undergoing unprecedented transformations as urban growth reaches its limits and populations begin to rethink the benefits of metropolitan living. Fueling unprecedented growth, large metropolitan centers become overcrowded, overextended and, in many cases, unsustainable. Against this backdrop, counterurbanization – the deliberate or forced migration from large cities to smaller towns or rural areas – has emerged as a critical trend. Instantaneously, this migration, occurs in various forms, has exposed longstanding exclusionary practices embedded in traditional structural systems; where resources are frequently strained, and governance mechanisms may be rudimentary. This leaves vulnerable groups – ranging from low-income households, persons with disabilities to indigenous communities – face intersecting forms of marginalization when urban infrastructural investments are disproportionately allocated. These challenges, whereas conventional planning systems have not kept pace with demographic shifts, thereby reinforces spatial segregation and socioeconomic disparities. Therefore, this research examines how inclusive structural systems can be reconfigured to promote demarginalization while simultaneously harnessing the benefits of counterurbanization and migration trends in these economies. The analysis situates counterurban migration within a broader framework that recognizes both voluntary relocation as a pursuit of quality of life and forced migration as an escape from systemic urban inequities. By scrupulously reviewing pertinent literature and synthesizing theoretical insights, this research draws on interdisciplinary theories from urban planning, sociology, and developmental studies that explore the multifaceted interplay of spatial redistribution, economic opportunity, and social inclusion. It encompasses multilevel perspectives – from infrastructure and technological integration, economic revitalization and inclusive growth, social participation and community resilience, policy innovation and decentralization, as well as environmental sustainability and quality of life. From the discourse, it offers policy recommendations that advocate decentralized governance, universal design principles mainstreaming, participatory social inclusion, equipoise sustainability, and digital connectivity integration as cornerstones of inclusive systems. This research aims to contribute to academic discourse by reevaluating how contemporary migration trends can lead not only to the decongestion of cities but also to opportunities for demarginalization. Ultimately, it posits that rethinking structural systems with an emphasis on inclusiveness and equity can transform migration-induced vulnerabilities into opportunities for sustainable and resilient development in emerging economies.

Keywords: Marginalized Group, Counterurbanization, Downstream Migration, Inclusive Policy, Emerging Economies.

043-041

CABARAN MULTIDIMENSI TREND MEGA PENGANGGU (*DISRUPTIVE MEGATREND*) DALAM ISU KEPENDUDUKAN DAN KEPERLUAN PENYELESAIAN DASAR SECARA *MULTI-STAKEHOLDER*: KAJIAN KES APPGM-SDG DALAM MERANGKA DASAR MAKRO YANG EFEKTIF MELALUI PENGLIBATAN AKAR UMBI (MIKRO)

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ABSTRAK

Nilai KDNK bagi bidang penjagaan tanpa bayaran (*unpaid care work*) di Malaysia dianggarkan sebanyak RM379 bilion (Ringkasan Dasar ISIS Malaysia, 2024). Angka ini menunjukkan bahawa seramai 3.2 juta individu berpotensi untuk menyumbang sebagai tenaga kerja negara, namun tidak dapat berbuat demikian kerana terlibat sepenuh masa dalam penjagaan keluarga. Situasi ini berkait rapat dengan cabaran multidimensi yang sedang dihadapi Malaysia dalam konteks kependudukan, termasuklah keperluan menyeluruh terhadap pembangunan industri penjagaan (*care industry*) dan ekonomi penjagaan (*care economy*), ekosistem kebajikan, kesihatan mental, kemiskinan multidimensi, serta keperluan dalam sektor tidak formal. Kesemua cabaran ini berkait secara langsung dengan Matlamat Pembangunan Mampan (*Sustainable Development Goals*) dan memerlukan penyelesaian dasar yang menyeluruh serta berteraskan realiti tempatan. Dalam usaha mencari penyelesaian dasar yang berasaskan keperluan setempat, APPGM-SDG mengambil inspirasi daripada pendekatan Buku Merah oleh Tun Abdul Razak, dan memperkenalkan strategi pembentukan dasar melalui pendekatan multi-stakeholder di peringkat daerah, dengan memberi penekanan kepada pemerksaan pejabat daerah dan kepimpinan Pegawai Daerah. Inisiatif yang dikenali sebagai inisiatif intervensi dasar ini telah diangkat sebagai salah satu cadangan penyelesaian isu negara, seperti yang dibentangkan dalam Voluntary National Review (VNR) Malaysia pada tahun 2021, dan pelaksanaannya telah dimulakan oleh APPGM-SDG bersama Kerajaan Malaysia pada tahun 2024. Kertas ini menggunakan metodologi analisis data sekunder daripada dapatan penyelidikan APPGM-SDG, dan diharapkan menjadi rujukan penting dalam meneliti cabaran, penyelesaian serta amalan terbaik di peringkat daerah, khususnya dalam konteks Malaysia dan negara-negara di rantau ASEAN.

Kata Kunci: Kependudukan, SDG, Penyelesaian Dasar, Pejabat Daerah, Pendekatan Multi-Stakeholder.

1. Pendahuluan

Fenomena megatrend pengganggu (*disruptive megatrend*) dalam isu kependudukan secara dasarnya merujuk kepada perubahan demografi yang ketara, dan secara langsung mengubah struktur sosio-ekonomi dan geopolitik setempat. Fenomena ini, yang bersifat multidimensi, merangkumi penuaan penduduk, urbanisasi yang pesat, perubahan struktur keluarga dan tekanan

ekonomi memberi impak besar terhadap sistem sosial negara. Perubahan ini mengganggu kelangsungan dasar sedia ada dan mencetuskan cabaran baharu dalam aspek penjagaan, kebajikan, kesihatan mental dan keperluan asas masyarakat. Contohnya, negara-negara yang sedang berdepan populasi menua (*aging population*) kini mengalami tekanan terhadap sistem penjagaan jangka panjang, kekurangan tenaga kerja, serta peningkatan kadar tanggungan warga emas (Padeiro et al., 2023). Tekanan ini turut muncul di Malaysia, di mana negara kini sedang berhadapan dengan cabaran-cabaran sosial yang semakin meningkat (Kadir & Alam, 2025; Sharifuddin, 2025). Peningkatan jangka hayat dan penurunan kadar kelahiran menjadikan struktur umur penduduk semakin tidak seimbang, dan menuntut pembaharuan dalam dasar sosial termasuk dasar pekerjaan, penjagaan kesihatan dan perlindungan sosial. Selain itu, pengaruh urbanisasi dan migrasi dalaman pula terus mengubah pola keperluan sosial, dan secara tidak langsung mempercepatkan ketidaksamarataan antara kawasan dan memberi tekanan kepada infrastruktur bandar dan luar bandar. Pertumbuhan pesat penduduk di kawasan tertentu tanpa perancangan yang rapi boleh membawa kepada kesesakan, kekurangan akses kepada perkhidmatan asas, serta peningkatan kos sara hidup. Ini memberi kesan langsung terhadap kualiti hidup penduduk, terutamanya golongan rentan.

Cabaran-cabaran ini menuntut pendekatan dasar yang lebih adaptif, menyeluruh dan inklusif, merentasi sektor serta berpaksikan kepada data mikro dan realiti semasa rakyat. Dasar yang dirancang perlu berupaya menangani kepelbagaian konteks lokal serta menyediakan penyelesaian bersifat jangka panjang. Dalam konteks ini, *All-Party Parliamentary Group Malaysia* (APPGM-SDG), selaku sebuah badan di Parlimen Malaysia bagi tujuan mencapai penyetempatan Matlamat Pembangunan Mampan (*Sustainable Development Goals* SDG) menampilkan pendekatan alternatif dalam kajian-kajian sosial yang dijalankan. Berteraskan teori beralasan (*grounded theory*) yang menekankan pemetaan komuniti dan pengumpulan dapatan secara langsung daripada akar umbi, pendekatan ini memberi ruang kepada suara komuniti dalam mengenal pasti jurang, mengemukakan keutamaan tempatan dan merangka penyelesaian dasar yang lebih realistik dan mampan (K. Eruthairaj, 2023). Sejajar dengan itu, perangkaan dasar makro yang berlandaskan penyertaan pelbagai pihak (*multi-stakeholder*) adalah penting agar setiap cabaran dapat ditangani secara menyeluruh, adil dan berkesan selaras dengan prinsip pembangunan mampan yang inklusif dan berdaya tahan.

Kertas kerja ini membentangkan satu analisis komprehensif terhadap isu-isu sosial yang muncul kesan daripada pengaruh megatrend pengganggu, berdasarkan dapatan kajian yang dilaksanakan secara menyeluruh di peringkat akar umbi oleh APPGM-SDG. Hasil kajian ini menunjukkan bahawa kerja-kerja penjagaan, yang memiliki potensi besar untuk dikembangkan sebagai sebahagian daripada ekonomi penjagaan (*care economy*) atau industri penjagaan (*care industry*), masih belum diberikan perhatian yang sewajarnya dalam rangka dasar sosial negara. Potensi sektor ini dalam menyumbang kepada kesejahteraan sosial dan ekonomi masih belum dimanfaatkan sepenuhnya. Di samping itu, kajian turut mengenal pasti kewujudan jurang yang ketara dalam pelaksanaan sistem kebajikan sedia ada, yang seterusnya menyumbang kepada peningkatan ketidaksamarataan sosioekonomi dalam kalangan komuniti, terutamanya kumpulan rentan. Isu kesejahteraan mental yang semakin meruncing, bersama kemiskinan pelbagai dimensi yang semakin meluas, turut dikenal pasti sebagai antara cabaran utama yang memerlukan perhatian dasar yang lebih mendalam dan bersifat kritikal. Dalam usaha merangka penyelesaian yang lebih mampan dan bersifat jangka panjang, kertas ini turut menekankan keperluan untuk memperkukuh peranan Organisasi Masyarakat Sivil (*Civil Society Organisation*, CSO) sebagai rakan strategik dalam pengukuhan sistem sosial negara. Penyertaan aktif dan berstruktur oleh CSO diyakini mampu meningkatkan keberkesanan pelaksanaan dasar sosial, menjadikannya lebih responsif, inklusif serta berpaksikan kepada keperluan sebenar masyarakat di pelbagai peringkat.

Lanjutan daripada itu, bahagian seterusnya akan memberi tumpuan kepada inisiatif intervensi dasar di peringkat daerah, yang mengutamakan kerjasama erat antara pejabat pentadbiran daerah dengan pelbagai pihak berkepentingan (*multi-stakeholder*). Melalui pendekatan ini, penyelesaian dasar yang dirangka berasaskan dapatan mikro dapat diarusperdanakan secara lebih sistematik dan disesuaikan dengan konteks setempat. Proses ini melibatkan ترجمان data dan penemuan dari komuniti termasuk keutamaan tempatan, cabaran setempat dan jurang perkhidmatan ke dalam bentuk intervensi dasar yang lebih terarah dan berskala. Dengan meletakkan pegawai daerah sebagai pemudah cara utama, pendekatan ini membina saluran institusi yang menghubungkan hasil kajian akar umbi dengan mekanisme pelaksanaan dasar kerajaan. Dalam erti kata lain, keperluan dan realiti mikro yang dikenal pasti melalui pemetaan komuniti dan kajian-kajian yang dijalankan oleh APPGM-SDG akan dibentuk semula menjadi strategi dasar yang boleh diintegrasikan dalam perancangan pembangunan daerah serta dirujuk dalam penyusunan dasar sosial dan strategi pembangunan nasional. Pendekatan penglibatan pelbagai pemegang taruh dengan Pejabat Daerah sebagai pemudah cara utama telah dipraktikkan oleh mantan perdana menteri Tun Abdul Razak semasa beliau turut menyandang jawatan sebagai menteri luar bandar. Tun telah memperkenalkan program buku merah (*Rural Economic Development Book, The Red Book*). Strategi ini mengiktiraf pejabat daerah dan Pegawai Daerah sebagai struktur utama dalam pentadbiran negara selain daripada peringkat persekutuan dan negeri. Melalui pengiktirafan ini, pejabat daerah diberi status *war room* dengan kapasiti penyelarasan penyelesaian kepada keperluan masyarakat lokal. Strategi ini memperkasa peranan pejabat daerah yang dahulunya hanya berfungsi sebagai pejabat penyelarasan kutipan cukai (Teo, 2024). Dengan kerjasama pelbagai pihak seperti agensi kerajaan, organisasi masyarakat sivil, sektor swasta dan komuniti sendiri, proses ini bukan sahaja memperkukuh penyelarasan antara pihak-pihak terlibat, tetapi juga meningkatkan kebolegunaan dan keberkesanan intervensi dasar. Ia menzahirkan prinsip inklusiviti dan keberdayaan tempatan dalam merangka dasar sosial yang lebih adil dan berimpak nyata.

2. Analisis isu berkaitan kependudukan berdasarkan dapatan akar umbi

Isu serta keperluan masyarakat yang dikenalpasti APPGM-SDG dalam konteks kependudukan ini telah menjadi cabaran multidimensi trend mega pengganggu dalam membawa penyelesaian kepada masyarakat akar umbi. Kesemua isu dibawah ini mempunyai kekangan sistemik yang mendalam dan mengganggu sistem penyediaan penyelesaian negara dan disebabkan kerana kekangan sistemik ini, penyelesaian mampan dan menyeluruh tidak capai dicapai. Tambahan pula kepada trend kekangan ekonomi negara sekarang dan juga trend kependudukan ke arah penuaan, kesampaian penyelesaian telah dinyahbolehkan.

2.1 Kerja penjagaan yang terabai dalam dasar sosial

Di seluruh negara, kerja penjagaan tidak berbayar dilakukan setiap hari oleh jutaan individu, terutamanya wanita, yang menjaga anak-anak, warga emas, dan ahli keluarga yang memerlukan perhatian. Namun, kerja-kerja ini jarang dilihat sebagai sumbangan kepada ekonomi negara kerana tidak diiktiraf secara rasmi atau diberi ganjaran dalam dasar sedia ada. Hal ini menimbulkan persoalan besar tentang keadilan dalam pengiktirafan peranan sosial yang kritikal ini.

Kajian oleh ISIS Malaysia pada tahun 2024 seperti yang dibincangkan oleh Jayasooria (2024) mengunjurkan bahawa ekonomi penjagaan berpotensi menjadi pemacu pertumbuhan ekonomi negara. Nilai kerja penjagaan tidak berbayar, jika dinilai setara KDNK, boleh mencecah sehingga RM379 bilion. Jumlah ini menjadikannya subsektor perkhidmatan terbesar selepas pembuatan.

Laporan UNDP 2024 turut mengiktiraf sektor ini sebagai sumber baharu bagi penciptaan pekerjaan, pendapatan dan pertumbuhan ekonomi yang mampan.

Di Malaysia, ekonomi penjagaan sering ditakrifkan sebagai satu rangkaian aktiviti ekonomi, berbayar dan tidak berbayar, yang merangkumi penjagaan kanak-kanak, warga emas, individu berkeperluan khas, perkhidmatan kesihatan, pendidikan, kebajikan serta perkhidmatan sosial, peribadi dan domestik. Ia merentasi sektor formal dan tidak formal serta wujud dalam pelbagai bentuk pekerjaan. Menurut Jabatan Perangkaan Malaysia, sektor tidak formal merangkumi perusahaan atau badan profesional yang tidak berdaftar dengan Suruhanjaya Syarikat Malaysia dan pihak berkuasa tempatan. Penjelasan ini selari dengan definisi oleh UNDP, yang menekankan penyediaan penjagaan langsung dan tidak langsung bagi kesejahteraan fizikal, psikologi dan sosial kumpulan bergantung seperti kanak-kanak, warga emas, orang kurang upaya, pesakit dan golongan dewasa dalam usia bekerja (Peng, 2019; Teo dan Ahmad, 2024).

Tambahan pula, wacana semasa turut memperluaskan pengertian ekonomi penjagaan kepada konsep yang lebih bermakna yang dikenali sebagai '*economy of care and meaning*'. Konsep ini merangkumi dua dimensi penting yang sering diabaikan oleh pendekatan ekonomi konvensional, iaitu nilai pemberian (*gift*) dan kemurahan (*gratuity*), serta pertimbangan terhadap kebaikan bersama (*common good*). Dalam hal ini, ekonomi penjagaan tidak hanya difahami sebagai aktiviti ekonomi semata-mata, tetapi juga sebagai amalan sosial dan nilai kemanusiaan yang memerlukan pendekatan transdisiplin yang melibatkan sosiologi, antropologi dan sains politik. Pendekatan ini memperkukuh hujah bahawa kerja penjagaan harus dilihat bukan sahaja dalam konteks produktiviti, tetapi juga dalam membina masyarakat yang adil, beretika dan berdaya tahan (Carrey, 2024).

Walaupun sebahagian besar kerja ini tidak diambil kira dalam sistem penilaian ekonomi rasmi, penyelidikan antarabangsa dan tempatan kini semakin mengiktirafnya sebagai komponen penting untuk daya tahan sosial dan pembangunan negara, contohnya sumbangan suri rumah dalam pembangunan sosial (Hassan et al., 2025). Peralihan daripada ekonomi perindustrian kepada ekonomi perkhidmatan, serta perubahan sosio-demografi yang pesat, menjadikan ekonomi penjagaan semakin relevan sebagai isu dasar yang perlu diberi perhatian serius.

Dalam konteks kependudukan, perubahan seperti penuaan penduduk, penurunan kadar kelahiran dan urbanisasi memberi tekanan terhadap sistem penjagaan sedia ada. Situasi yang dipengaruhi oleh megatrend pengganggu ini meningkatkan permintaan terhadap perkhidmatan penjagaan jangka panjang dan penjagaan komuniti, terutamanya dalam kalangan kumpulan rentan di kawasan bandar dan luar bandar yang terpinggir. Tanpa dasar sosial yang bersifat responsif, beban penjagaan akan terus dipikul secara tidak formal oleh wanita dan isi rumah, seterusnya memperburuk ketidaksamarataan gender dan mengehadkan penyertaan ekonomi.

Tambahan pula, sektor penjagaan amat bergantung kepada tenaga kerja tidak formal yang kurang perlindungan sosial dan keselamatan pendapatan. Dalam kebanyakan kes, wanita terpaksa meninggalkan kerjaya atau mengehadkan peluang pekerjaan demi memenuhi tanggungjawab penjagaan. Oleh itu, penting untuk mengarusperdanakan ekonomi penjagaan dalam dasar awam dan menjadikannya sektor strategik yang menyumbang kepada pembangunan mampan, kesejahteraan sosial dan daya saing negara secara menyeluruh.

2.2 Jurang pelaksanaan dalam sistem kebajikan semasa

Sistem kebajikan di Malaysia memperlihatkan ketidaksepadanan yang ketara antara dasar yang digariskan di peringkat pusat dan realiti pelaksanaan di peringkat akar umbi. Laporan awal Dasar SDG Peringkat Parlimen oleh APPGM-SDG yang meneliti isu kemiskinan dan kebajikan mendapati bahawa pendekatan pelaksanaan yang bersifat sektoral dan terpisah telah mengakibatkan bantuan tidak sampai kepada kumpulan sasar secara berkesan. Warga emas, orang kurang upaya (OKU), ibu tunggal dan belia luar bandar antara yang paling terjejas akibat jurang sistemik ini.

Dari Laporan Awal Dasar SDG Peringkat Parlimen APPGM-SDG: Kebajikan (2024), dapatan pertama menunjukkan bahawa ramai individu yang berada dalam kedudukan rentan gagal mengakses skim bantuan kebajikan meskipun memenuhi kelayakan asas. Antara justifikasinya ialah kekurangan kesedaran dalam kalangan penerima berpotensi, khususnya OKU, terhadap wujudnya skim-skim bantuan yang tersedia. Tambahan pula, halangan pentadbiran seperti proses permohonan yang rumit, kekurangan maklumat terperinci tentang tatacara memohon, serta keperluan hadir secara fizikal ke pejabat Jabatan Kebajikan Masyarakat (JKM) telah menyukarkan lagi akses kepada bantuan. Sistem e-Kasih yang sepatutnya menjadi instrumen pemadanan bantuan juga dikritik kerana ketidakpadanan data. Terdapat individu yang layak tetapi tidak menerima bantuan, manakala mereka yang tidak layak pula terus menerima manfaat.

Isu kapasiti pelaksana turut membataskan keberkesanan penyampaian perkhidmatan. Sebagai contoh, di Pasir Mas, Kelantan, seorang pegawai kebajikan dilaporkan mengendalikan sehingga 300 kes. Situasi ini menyebabkan pemantauan di lapangan tidak dapat dijalankan secara konsisten. Di Pusat Pemulihan Dalam Komuniti (PDK), kekurangan tenaga kerja terlatih menjejaskan keupayaan memberi perkhidmatan khusus kepada OKU. Dalam sesetengah kes, pemohon terpaksa hadir secara berkala ke pejabat kebajikan walaupun berhadapan dengan kekangan fizikal dan logistik. Malangnya, bantuan juga sering disalurkan lewat.

Dapatan kedua mengenal pasti pengecualian kumpulan tertentu daripada menerima bantuan kebajikan kerana definisi rentan yang terlalu sempit. Syarat kelayakan yang terlalu ketat telah menyebabkan ramai individu dalam situasi sukar tidak dipertimbangkan. Sebagai contoh, bantuan kepada keluarga tunggal hanya tertumpu kepada ibu tunggal yang berstatus balu atau bercerai secara sah, manakala bapa tunggal terus terpinggir. Terdapat juga ibu tunggal yang dinafikan bantuan hanya kerana memiliki syarikat berdaftar atau sedikit pendapatan tambahan. Dalam sesetengah kes, keluarga yang mempunyai ahli dewasa yang bekerja dianggap tidak layak walaupun masih memerlukan sokongan dari segi penjagaan. Bantuan sering disalurkan hanya kepada OKU tetapi tidak kepada penjaga mereka yang juga menanggung beban ekonomi dan fizikal yang besar.

Golongan belia luar bandar berpendapatan rendah pula belum diiktiraf secara sistematik sebagai kumpulan rentan walaupun wujud peningkatan bukti mengenai kerentanan mereka. Ramai daripada mereka terpaksa berhenti sekolah semasa pandemik, berhadapan dengan kekurangan peluang pekerjaan serta tidak mempunyai akses kepada kemudahan pembangunan diri dan riadah. Kekosongan sosial ini menimbulkan risiko penglibatan dalam kegiatan berisiko seperti penyalahgunaan dadah dan aktiviti jenayah jalanan.

Dimensi gender turut memaparkan cabaran mendalam dalam sistem kebajikan semasa. Keganasan terhadap wanita dan kanak-kanak menjadi isu yang semakin berleluasa namun jaringan sokongan kepada mangsa kekal terhad. Ramai mangsa tidak menerima bantuan psikososial atau pemulihan

ekonomi selepas kejadian. Tanggungjawab penjagaan juga terus dibebankan secara tidak seimbang kepada wanita, terutamanya ibu tunggal yang bergelut dengan kos penjagaan kanak-kanak yang tinggi dan kekurangan pusat jagaan berdaftar. Kebergantungan kepada penjagaan tidak formal meningkatkan risiko keselamatan dan kualiti penjagaan.

Isu terakhir yang dikenalpasti dalam laporan ini berkait dengan kekurangan perkhidmatan penjagaan berpatutan bagi warga emas dan OKU. Ramai warga emas tinggal bersendirian tanpa sistem sokongan berstruktur. Keluarga pula sering menghadapi kesukaran untuk menyediakan penjagaan kerana kekangan masa dan sumber. Dalam kalangan OKU, keperluan penjagaan adalah lebih kompleks dan melibatkan keperluan seperti lampin dewasa, peralatan khas dan rawatan berkala. Namun, perkhidmatan penjagaan khusus sering kali tidak tersedia di kawasan berhampiran. Ini memaksa keluarga menanggung kos perjalanan dan logistik tambahan untuk mendapatkan perkhidmatan yang sesuai.

Jurang pelaksanaan bantuan kebajikan turut memperlihatkan variasi yang ketara antara negeri. Melalui dapatan Laporan Awal Dasar SDG Peringkat Parlimen APPGM-SDG: Kemiskinan (2024), di Sabah, jurang digital menjadi penghalang utama dalam pelaksanaan bantuan secara dalam talian. Ramai penduduk luar bandar tidak mempunyai capaian internet atau peranti digital yang sesuai. Ketidakhadiran infrastruktur asas seperti bekalan air bersih, elektrik dan jalan raya turut menyukarkan capaian kepada bantuan serta perkhidmatan asas lain. Situasi ini menambahkan dimensi geografi kepada kerentanan sosial yang wujud.

Di Semenanjung, ketidaktentuan pasaran buruh telah menyebabkan ramai individu bekerja dalam sektor informal tanpa akses kepada caruman KWSP atau perlindungan sosial. Golongan ibu tunggal dan peniaga kecil turut terdedah kepada eksploitasi dan ketiadaan sokongan berstruktur, yang menyukarkan mereka keluar daripada kitaran kemiskinan.

Secara keseluruhan, laporan awal APPGM-SDG menunjukkan bahawa sistem kebajikan negara perlu dibaiki agar lebih sesuai dengan realiti hidup komuniti rentan. Penyelesaian wajar dimulakan dari peringkat tempatan, dengan mengambil kira keperluan sebenar masyarakat dan cabaran yang berbeza antara kawasan. Struktur kependudukan yang berubah bakal memberi kesan besar terhadap keperluan penjagaan, struktur isi rumah, dan keseimbangan sokongan sosial. Oleh itu, dasar kebajikan mesti lebih fleksibel dan berasaskan data setempat, serta dibentuk dengan penyertaan komuniti. Pendekatan ini penting agar sistem kebajikan benar-benar menyokong rakyat dalam konteks perubahan masyarakat yang semakin kompleks.

2.3 Kesejahteraan mental sebagai isu sosial yang semakin kritikal

Dalam kesinambungan isu kebajikan yang dibincangkan sebelum ini, kesejahteraan mental muncul sebagai salah satu cabaran sosial yang semakin mendesak. Kajian APPGM-SDG mendapati tekanan psikososial meningkat dengan ketara terutama dalam kalangan belia dan penjaga, terutamanya selepas pandemik. Golongan ini bukan sahaja menghadapi beban emosi dan fizikal yang berat, tetapi juga kekurangan sokongan sistemik yang mampan. Kesihatan mental yang rapuh berkait rapat dengan struktur penjagaan yang tidak mencukupi, serta jurang dalam pengiktirafan dan penghargaan terhadap kerja penjagaan, yang menjadi asas kepada ekonomi penjagaan dan industri penjagaan yang lebih luas.

Dapatan daripada penyelidikan terdahulu APPGM-SDG (Abd Aziz, 2024) mengenai kesejahteraan wanita B40 menunjukkan bahawa tekanan kehidupan harian memberi kesan

mendalam kepada kesihatan mental mereka. Dalam konteks projek solusi yang dijalankan di bawah APPGM-SDG, sebahagian peserta yang merupakan usahawan komuniti menghadapi tekanan emosi akibat peranan berganda, konflik kerja-keluarga, serta kekurangan sistem sokongan penjagaan. Misalnya, seorang ibu tunggal yang menjadi responden menyatakan bahawa kehilangan pasangan dan tanggungjawab sepenuhnya ke atas anak-anak telah menjejaskan kesihatan mental dan kebolehan menguruskan perniagaan kecil. Walaupun objektif utama projek adalah pembangunan kemahiran keusahawanan, hasil pemantauan menunjukkan peningkatan signifikan dalam kesejahteraan psikologi peserta melalui sokongan sosial, interaksi komuniti yang positif, dan ruang selamat untuk berkembang.

Stigma terhadap isu kesihatan mental kekal tinggi, dan akses kepada rawatan masih terlalu terhad terutamanya di kawasan luar bandar. Chandrasekaran (2024) menyatakan bahawa Malaysia berdepan kekurangan serius dalam tenaga kerja terlatih dalam bidang kesihatan mental seperti pekerja sosial psikiatri dan penjaga kesihatan mental yang khusus. Ini memberi kesan langsung kepada kualiti perkhidmatan dan kapasiti sistem untuk merespons keperluan yang semakin meningkat. Terdapat juga keperluan kritikal untuk meningkatkan kompetensi pekerja penjagaan, termasuk pengetahuan tentang penyakit psikososial, kefahaman terhadap kerangka undang-undang seperti Akta Kesihatan Mental 2001, kemahiran komunikasi, pengurusan kes, serta kepekaan budaya, terutamanya bagi pekerja bukan warganegara. Elemen-elemen ini penting untuk memastikan perkhidmatan kesihatan mental bukan sahaja boleh diakses, tetapi juga inklusif dan berkesan.

Namun, terdapat tiga cabaran utama yang menjejaskan keberkesanan pembangunan tenaga kerja dalam sektor ini. Pertama ialah cabaran struktural, yang merangkumi kekurangan dasar latihan yang jelas, peraturan yang kompleks, infrastruktur penyediaan perkhidmatan yang terbatas, kekurangan penggunaan teknologi digital, serta isu pembiayaan yang membataskan pembangunan sistem sokongan yang menyeluruh. Kedua ialah cabaran operasional, termasuk kekurangan sumber manusia, kepelbagaian peranan pekerja sosial merentasi pelbagai agensi, dan ketiadaan kerjasama erat antara pihak formal dan tidak formal. Ketiga ialah cabaran sosial, seperti persepsi masyarakat yang masih rendah terhadap peranan pekerja sosial dan pekerja kesihatan psikiatri, serta kekangan budaya yang menyulitkan penerimaan dan pelaksanaan intervensi berkaitan.

Ketiga-tiga cabaran ini menunjukkan perlunya pendekatan dasar yang bukan sahaja bersifat makro, tetapi juga memberi tumpuan kepada solusi mikro yang mengambil kira konteks setempat. Ini termasuk mengarusperdanakan isu kesihatan mental dalam dasar sosial dan kependudukan, serta melihatnya sebagai sebahagian daripada teras ekonomi penjagaan dan keperluan membangun industri penjagaan yang berdaya tahan dan inklusif.

2.4 Kemiskinan pelbagai dimensi

Dalam landskap sosial semasa, cabaran kemiskinan semakin kompleks apabila ia saling berkait dengan isu kebajikan, kesihatan mental dan ekonomi penjagaan. Kemiskinan tidak lagi boleh difahami hanya melalui pendapatan, sebaliknya perlu dilihat sebagai keadaan kekurangan pelbagai keupayaan asas dalam kehidupan seharian. Dalam konteks ini, kemiskinan multidimensi semakin diiktiraf sebagai cabaran utama dalam konteks trend mega pengganggu berkaitan kependudukan. Tidak lagi mencukupi untuk mengukur kemiskinan hanya melalui pendapatan, pendekatan baharu melalui Indeks Kemiskinan Multidimensi (Multidimensional Poverty Index, MPI) menilai kekurangan dalam tiga dimensi utama: kesihatan, pendidikan dan taraf hidup. Kaedah Alkire-Foster yang digunakan dalam pengiraan MPI membolehkan gambaran lebih menyeluruh tentang

kemiskinan yang bersifat kompleks dan berdimensi pelbagai (Loh, 2025). Laporan MPI Global 2024 menunjukkan bahawa 1.1 bilion orang di negara membangun hidup dalam kemiskinan multidimensi, dengan separuh daripadanya adalah kanak-kanak dan 84 peratus tinggal di kawasan luar bandar. Jurang perbandaran di antara wilayah, akses kepada kemudahan asas dan keterciciran daripada peluang pendidikan serta kesihatan merupakan antara penyumbang utama pola kemiskinan yang berbeza mengikut lokasi dan populasi.

Di Malaysia, kejayaan mengurangkan kemiskinan mutlak sejak 1970 adalah signifikan, namun bentuk kemiskinan baharu terus muncul seiring perubahan struktur ekonomi dan sosial (Ridzuan et al., 2024). Isu seperti kemiskinan relatif, ketidakseimbangan wilayah dan tekanan ekonomi seperti inflasi serta pengangguran memberi kesan langsung kepada komuniti rentan. Tambahan pula, peningkatan kos sara hidup, kesenjangan digital, dan ketidakstabilan pekerjaan dalam sektor tidak formal turut memperdalamkan kerentanan isi rumah tertentu, terutamanya di kawasan bandar berpendapatan rendah dan kawasan luar bandar yang terpinggir. Golongan tertentu seperti ibu tunggal, warga emas, orang kurang upaya dan migran turut berisiko tinggi menghadapi kemiskinan pelbagai dimensi.

Dalam usaha menambah baik pendekatan pengukuran kemiskinan, APPGM-SDG telah menilai instrumen MPI kebangsaan dan mencadangkan penambahbaikan yang lebih kontekstual. Kajian ini mencadangkan peluasan rangka kerja MPI daripada empat kepada lima dimensi utama: pendidikan, kesihatan, taraf hidup, perlindungan sosial serta kohesi dan keselamatan sosial (Loh, 2025). Dapatan kajian menunjukkan bahawa 26.3 peratus responden tergolong dalam kategori miskin multidimensi, dengan mengalami kekurangan yang bersilang seperti pencapaian pendidikan yang rendah, akses kesihatan yang tidak mencukupi, keterbatasan capaian internet serta perlindungan sosial yang lemah. Jurang ketara turut dikenal pasti merentas jantina, etnik dan lokasi geografi bandar dan luar bandar.

Selain itu, beberapa pengajaran penting telah digariskan (Loh, 2025). Pertama, keperluan untuk mengiktiraf nilai instrumen kemiskinan multidimensi sebagai alat yang mendedahkan kekurangan kemampuan asas melebihi ukuran pendapatan. Kedua, keutamaan kepada penglibatan pelbagai pihak dalam merangka MPI kebangsaan yang lebih inklusif. Ketiga, keperluan untuk memberi tumpuan kepada keperluan asas golongan yang paling tercicir selaras dengan prinsip SDG. Dan keempat, keperluan untuk mengarusperdanakan pengumpulan data inklusif dan terperinci sebagai asas kepada dasar berasaskan bukti (*evidence-based policy*) dan pemantauan berkesan.

Kaedah konvensional seperti Pendapatan Garis Kemiskinan (PLI) telah mula dilengkapi dengan MPI, yang diperkenalkan dalam Rancangan Malaysia ke-11 sebagai alat ukur yang lebih komprehensif dan bersifat pelbagai dimensi. Namun begitu, pelaksanaannya masih berhadapan dengan cabaran seperti ketepatan data, pemilihan indikator yang sesuai dan keperluan kapasiti dasar untuk menangani variasi setempat. Antara kekangan lain termasuklah kekurangan penyelarasan antara agensi, ketidaksamaan sumber antara negeri, serta kekangan kewangan dan teknikal dalam memantau dan menilai kemajuan dari semasa ke semasa.

Inisiatif semasa oleh Kementerian Ekonomi bersama UNDP untuk menambah baik MPI kebangsaan memperlihatkan usaha serius untuk menjadikan indeks ini sebagai asas kepada pembuatan dasar yang lebih responsif. Ini penting kerana kemiskinan multidimensi menuntut pendekatan dasar yang melangkaui sempadan kementerian atau sektor tertentu. Ia memerlukan penyelesaian secara bersepadu yang melibatkan pelbagai pemegang taruh, merangkumi sektor kerajaan, komuniti, swasta dan masyarakat sivil. Pendekatan ini membuka ruang kepada

pembangunan dasar yang lebih adil, inklusif dan mampu menangani cabaran kependudukan dalam jangka panjang.

Kajian-kajian APPGM-SDG seperti yang diketengahkan dalam koleksi *Community Approaches to Poverty Alleviation in Malaysia* (Tahir, 2024) turut menunjukkan kepentingan strategi pemerkasaan ekonomi tempatan melalui latihan keusahawanan, pelancongan komuniti, pertanian lestari dan pendidikan kemahiran. Pendekatan ini bukan sahaja meningkatkan pendapatan tetapi juga memperkukuh jaringan sosial dan membina ketahanan komuniti. Justeru, penglibatan CSO sebagai penghubung dasar dan komuniti menjadi kunci dalam menjayakan pendekatan kemiskinan yang bersifat menyeluruh dan akar umbi.

2.5 Peranan CSO dalam Pengukuhan Sistem Sosial Negara

Organisasi masyarakat sivil (CSO) memainkan peranan penting dalam merapatkan jurang antara dasar awam dan realiti di lapangan, khususnya dalam sektor kebajikan dan penjagaan. CSO sering kali menjadi pelengkap kepada kelemahan sistem penyampaian kerajaan dengan menyediakan sokongan langsung kepada golongan rentan termasuk warga emas, ibu tunggal, orang kurang upaya, komuniti miskin bandar dan luar bandar, serta belia yang berdepan pelbagai bentuk keterciciran. Pendekatan yang bersifat komuniti, responsif dan kontekstual membolehkan CSO mengenal pasti keperluan sebenar kumpulan sasar yang sering terpinggir dalam sistem rasmi. Dalam konteks ekonomi penjagaan dan cabaran kemiskinan pelbagai dimensi, CSO berfungsi sebagai pemudah cara yang memahami budaya tempatan, norma sosial dan keperluan khusus yang sukar ditangani melalui pendekatan dasar seragam.

Namun begitu, peranan CSO masih belum diinstitusikan secara menyeluruh dalam ekosistem dasar sosial negara. Cabaran utama termasuk kekangan pembiayaan yang stabil, kebergantungan kepada sumbangan sukarela dan dana projek jangka pendek, serta ketiadaan pengiktirafan formal. Kebanyakan CSO juga berdepan dengan kerumitan pentadbiran dan proses perundangan yang menghalang mereka daripada mengakses dana awam atau bekerjasama secara efektif dengan agensi kerajaan. Ketidadaan kerangka dasar yang menyelaraskan peranan dan fungsi CSO telah menyebabkan potensi sumbangan mereka tidak dimanfaatkan secara optimum dalam perancangan, pelaksanaan dan pemantauan dasar kebajikan serta penjagaan. Hal ini memberi kesan khususnya kepada usaha pemerkasaan belia, kerana banyak inisiatif latihan, pendidikan dan sokongan komuniti yang melibatkan belia bergantung kepada kelangsungan aktiviti akar umbi yang dipacu oleh CSO.

Sebagai langkah ke hadapan, perlu ada usaha sistematik untuk menjadikan CSO sebagai rakan strategik negara dalam pembangunan sosial. Penubuhan Malaysian CSO-SDG Alliance sejak 2015 menandakan inisiatif penting ke arah penyertaan bermakna CSO dalam kerangka SDG. Kerjasama awal dengan Unit Perancang Ekonomi (EPU) serta penglibatan aktif dalam penubuhan APPGM-SDG membuktikan peranan strategik CSO dalam mencorak arah tuju dasar negara. Sebagai sekretariat APPGM-SDG, gabungan CSO ini telah membantu membina sinergi antara pelbagai pihak termasuk Parlimen, agensi kerajaan dan komuniti akar umbi. Dalam konteks ini, CSO tidak hanya berperanan dalam advokasi dasar, tetapi turut menjalankan pelbagai bentuk advokasi lain seperti advokasi perkongsian dan jaringan, serta advokasi melalui pelaksanaan projek di peringkat komuniti (Lin, 2023).

Untuk memperkukuh peranan ini, pendidikan dan latihan kemahiran kepada CSO, khususnya yang melibatkan golongan belia, perlu diberikan keutamaan (Ng et al., 2023). Latihan dalam bidang

advokasi dasar, pembangunan kepimpinan, pengurusan projek dan penggunaan data komuniti dapat meningkatkan keupayaan CSO untuk menjadi ejen perubahan sosial yang efektif. Pelibatan aktif belia dalam inisiatif CSO turut membuka ruang kepada pembangunan kapasiti jangka panjang yang lebih mampan dan inklusif. CSO juga berpotensi menyumbang secara langsung dalam pelaksanaan Rancangan Malaysia, khususnya dalam agenda pembangunan mampan dan sistem sokongan sosial berasaskan komuniti. Justeru itu, CSO wajar diberikan ruang institusi yang lebih jelas dalam ekosistem dasar sosial negara demi mewujudkan sistem penjagaan dan kesejahteraan yang lebih adil, tangkas dan menyeluruh.

2.6 Penjajaran dengan SDG dan piawaian global

Penjajaran dasar sosial negara dengan SDG dan piawaian antarabangsa merupakan landasan penting dalam menyusun semula pendekatan dasar yang lebih adil, menyeluruh dan berpaksikan kesejahteraan manusia. Lima dapatan utama yang telah dibincangkan, iaitu kerja penjagaan, sistem kebajikan, kesihatan mental, kemiskinan pelbagai dimensi, dan peranan organisasi masyarakat sivil (CSO) menggambarkan cabaran sistemik yang memerlukan penyesuaian dasar dengan kerangka global yang terbukti berkesan dan berkeadilan.

Salah satu rujukan utama dalam kerangka global ialah *Social Protection Floors* oleh *International Labour Organization* (ILO), yang menggariskan keperluan untuk perlindungan sosial minimum sejagat. Ini termasuk akses kepada kesihatan, pendapatan asas bagi kumpulan rentan seperti kanak-kanak, warga emas dan penjaga tidak dibayar. Dasar sosial negara haruslah berteraskan prinsip keterangkuman dan keadilan sosial, bukan sekadar menyediakan bantuan jangka pendek, tetapi membina sistem yang berdaya tahan dan responsif terhadap keperluan sebenar masyarakat.

Lebih penting, pengalaman komuniti dan realiti akar umbi perlu menjadi panduan utama dalam penyusunan dasar makro. Ini termasuk suara penjaga tidak dibayar, ibu tunggal, warga emas, belia, komuniti luar bandar dan minoriti yang sering kali terpinggir dalam pelan dasar nasional. Penekanan terhadap kerja penjagaan, kesihatan mental, kebajikan, kemiskinan dan penglibatan CSO bukan sahaja selari dengan SDG, malah membentuk asas kukuh kepada reformasi dasar sosial yang lebih responsif. Jadual 2.1 merumuskan dapatan utama tersebut, jurang pelaksanaan di lapangan, serta penjajaran yang relevan dengan SDG, di mana ianya juga selari dengan kerangka global seperti yang digariskan oleh ILO.

Jadual 2.1 Penjajaran dapatan analisis dengan SDG dan Piawaian Global

Dapatan Analisis	Jurang	SDG Berkaitan
Kerja penjagaan yang terabai dalam dasar sosial	Tiada pengiktirafan formal terhadap kerja penjagaan tidak berbayar dalam dasar dan pelan pembangunan. Beban penjagaan tidak dikongsi secara saksama antara jantina dan kelas sosial.	SDG 5 (Kesamarataan Gender): Mengiktiraf dan mengagihkan beban penjagaan secara adil. SDG 8 (Pekerjaan dan Pertumbuhan Ekonomi): Memasukkan kerja penjagaan dalam sektor ekonomi formal. SDG 10 (Pengurangan Ketidaksamaan): Mengurangkan ketidaksamaan dalam akses kepada masa dan sumber. Social Protection Floors (ILO): Menjamin perlindungan sosial kepada penjaga.
Jurang pelaksanaan dalam sistem kebajikan semasa	Pelaksanaan dasar sosial bersifat tidak sekata, terhad di peringkat komuniti dan tidak responsif terhadap keperluan sebenar penerima.	SDG 1 (Tiada Kemiskinan): Memastikan perlindungan sosial efektif untuk semua. SDG 10 (Pengurangan Ketidaksamaan): Mengurangkan jurang capaian kebajikan antara kumpulan. SDG 16 (Institusi Kukuh): Meningkatkan ketelusan dan kebertanggungjawaban dalam sistem penyampaian. Social Protection Floors (ILO): Menetapkan standard minimum perlindungan sosial.
Kesejahteraan mental sebagai isu sosial yang semakin kritikal	Kekurangan dasar khusus, kekangan tenaga kerja profesional, dan stigma yang menghalang akses kepada perkhidmatan kesihatan mental.	SDG 3 (Kesihatan dan Kesejahteraan): Memastikan kesihatan mental diberi perhatian setara dengan fizikal. SDG 10 (Pengurangan Ketidaksamaan): Menyediakan intervensi menyeluruh bagi kumpulan rentan seperti belia dan penjaga.
Kemiskinan pelbagai dimensi	Fokus berlebihan kepada pendapatan sebagai penentu kemiskinan, mengabaikan dimensi lain seperti pendidikan, kesihatan, tempat tinggal, dan perlindungan sosial.	SDG 1 (Tiada Kemiskinan): Menghapuskan kemiskinan dalam semua bentuk. SDG 10 (Pengurangan Ketidaksamaan): Menangani ketidaksamaan struktur. SDG 11 (Bandar dan Komuniti Mampan): Memastikan persekitaran hidup menyokong kesejahteraan pelbagai dimensi.

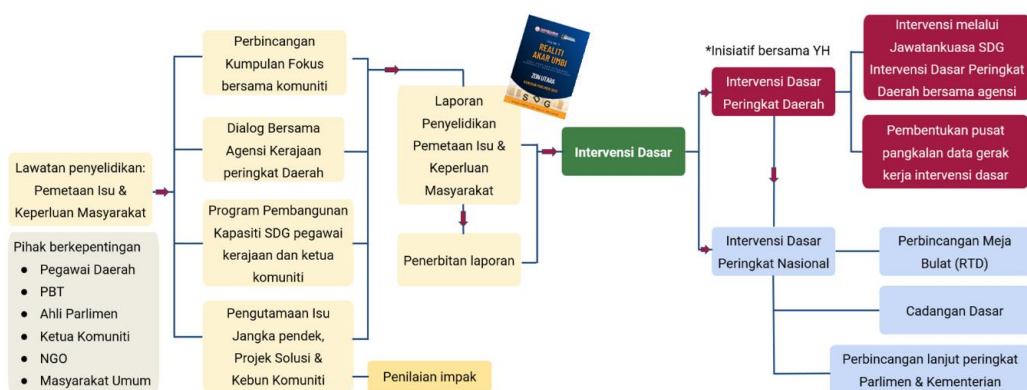
Dapatan Analisis	Jurang	SDG Berkaitan
Peranan CSO dalam pengukuhan sistem sosial negara	Tidak diiktiraf secara rasmi, kekangan pembiayaan, dan tiada mekanisme penyelarasan bersepadu dalam dasar sosial.	SDG 16 (Institusi Kukuh): Mengiktiraf peranan CSO dalam penyampaian perkhidmatan dan pemantauan dasar. SDG 17 (Perkongsian untuk Matlamat): Meningkatkan kerjasama pelbagai pihak dalam pembangunan sosial. SDG 10 (Pengurangan Ketidaksamaan): Memperkasa CSO sebagai penyampai suara komuniti yang terpinggir.

3. Penyelesaian dasar secara *multi-stakeholders*, sebuah metodologi APPGM-SDG

Cabaran dan keperluan multidimensi yang dibentangkan di atas, yang kini menjadi trend mega serta pengganggu utama kepada pembangunan mampan negara, memerlukan penyelesaian yang sistemik dan holistik di peringkat penggubalan serta pelaksanaan dasar. Bagi membolehkan penyelesaian makro, APPGM-SDG telah mengadaptasi metodologi kajian berasaskan dapatan akar umbi (*grounded research*) untuk mengenal pasti isu dan meneruskan gerak kerja penyelesaian di peringkat makro.

3.1 Metodologi APPGM-SDG

Melalui metodologi pemetaan isu APPGM-SDG, perbincangan kumpulan fokus (*focus group discussion*) telah digunakan sebagai kaedah untuk memetakan isu dan keperluan komuniti. Menerusi pendekatan ini, penyelidik APPGM-SDG menjalankan perbincangan dengan komuniti akar umbi yang terkesan seperti warga emas, ibu tunggal, OKU, belia, ibu, ketua komuniti, NGO dan kumpulan lain yang berkaitan, sambil mendengar perkongsian pengalaman serta pandangan mereka. Dapatan tersebut direkodkan sebagai isu dan keperluan setempat, kemudian disahkan melalui sesi dialog bersama agensi di peringkat daerah. Hasil dapatan komuniti dan maklum balas agensi seterusnya diterbitkan dalam bentuk laporan untuk kegunaan perbincangan dasar di peringkat Parlimen dan kementerian, di samping menjadi rujukan dalam pengutamaan isu bagi pelaksanaan projek mikro pembangunan komuniti. Metodologi pemetaan isu APPGM-SDG ini diuraikan dalam Rajah 3.1 di bawah.



Rajah 3.1 Metodologi pemetaan isu APPGM-SDG (Sumber: APPGM-SDG, 2024)

Melalui metodologi ini, APPGM-SDG telah mengenal pasti lebih daripada 1,000 isu dan keperluan masyarakat sejak tahun 2020 hingga 2025. Kesemua isu dan keperluan tersebut dihindungkan dan dirangkumkan ke dalam 26 tema yang seterusnya diletakkan di bawah tiga dimensi SDG iaitu sosial, ekonomi dan alam sekitar. Senarai 26 tema ini ditunjukkan dalam Rajah 3.2 di bawah.



Rajah 3.2 26 tema isu dan keperluan masyarakat (Sumber: APPGM-SDG, 2024)

Kesemua dapatan dan penerbitan ini merupakan bukti penting dalam pembentukan tema isu yang akan menjadi asas kepada perbincangan dasar di peringkat Parlimen dan kementerian, bersama pelbagai pemegang taruh seperti agensi kerajaan dari kementerian, Ahli Parlimen, Senator serta penyelidik universiti.

3.2 Perbincangan dan penyelesaian isu sistemik di peringkat daerah.

Melalui dapatan akar umbi, kajian pemetaan isu dan keperluan masyarakat ini turut menghasilkan cadangan penyelesaian yang mampan bagi menangani isu struktural dan sistemik yang berkaitan dengan dasar. Sejak tahun 2020, pelbagai amalan terbaik dan contoh pentadbiran telah direkodkan, dan sebahagiannya telah diangkat sebagai cadangan kepada struktur pentadbiran negara. Berdasarkan pengalaman yang diperoleh APPGM-SDG, pejabat daerah dikenal pasti sebagai tumpuan utama dalam penyelesaian isu dan keperluan, serta sebagai pusat penyetempatan SDG di peringkat daerah. Pejabat daerah juga boleh berfungsi sebagai pusat intervensi dasar di peringkat daerah, yang membolehkan perbincangan antara agensi dijalankan dengan dipengerusikan oleh Pegawai Daerah. Pendekatan ini selaras dengan agenda Buku Merah yang diperkenalkan oleh Tun Abdul Razak, yang menobatkan pejabat daerah sebagai peringkat utama dalam pentadbiran negara selain persekutuan dan pentadbiran negeri. Keperluan penyelesaian antara agensi merupakan salah satu dapatan utama dalam kajian ini, dan di samping itu, kerjasama pelbagai pemegang taruh (*multi-stakeholders*) turut diiktiraf sebagai keperluan penting bagi mencapai penyelesaian kepada isu dan keperluan masyarakat.

3.2.1 Kajian Kes PPR Lembah Subang, Petaling Jaya

Keperluan perbincangan dan penyelesaian multi-stakeholders buat pertama kali direkodkan melalui kajian pemetaan isu di Parlimen Petaling Jaya pada tahun 2020. Dalam perbincangan kumpulan fokus bersama komuniti flat PPR Lembah Subang 1 (LS1), penyelidik APPGM-SDG

mengenal pasti isu sistemik iaitu perbezaan pemilikan tanah dan bangunan antara Kementerian Perumahan dan Kerajaan Tempatan (KPKT) dengan Kerajaan Negeri Selangor. Isu bersilang agensi ini telah menyebabkan pelbagai keperluan tidak dapat disampaikan kepada penduduk LS1, termasuk kutipan sampah berjadual, sewaan rumah tanpa kebenaran, kecurian elektrik dan tunggakan bayaran kos penyelenggaraan.

Bagi mencari penyelesaian, APPGM-SDG bersama Ahli Parlimen ketika itu, YB Puan Maria Chin, telah menubuhkan sebuah pasukan petugas antara agensi (*inter-agency task force*) untuk membincangkan dan menangani isu masyarakat LS1. Mesyuarat pertama yang dijalankan melalui platform *Zoom* membuahkan hasil apabila beberapa isu berjaya diselesaikan oleh agensi terlibat, termasuk kutipan sampah, kenderaan terbiar, pengurusan tempat letak kereta serta pelaksanaan program pembangunan masyarakat.

Inisiatif ini menjadi contoh amalan terbaik APPGM-SDG dan kemudiannya distrategikan semula dalam konteks keperluan di Parlimen Ipoh Barat pada tahun 2021.

3.2.2 Kajian Kes Kampung Tai Lee, Ipoh Barat

Kampung Tai Lee merupakan sebuah penempatan lama yang kini berhadapan dengan ancaman pengusiran selepas tanah yang diduduki penduduk sekian lama menjadi milikan pemaju. Isu ini telah direkodkan semasa pemetaan isu di Parlimen Ipoh Barat pada tahun 2021. Berpandukan pengalaman di Lembah Subang, APPGM-SDG bersama Ahli Parlimen telah mengadakan pertemuan dengan Datuk Bandar serta Majlis Bandaraya Ipoh dan mencapai persetujuan untuk menubuhkan sebuah pasukan petugas antara agensi.

Sebelum penubuhan pasukan tersebut, pemetaan isi rumah dijalankan di Kampung Tai Lee bagi merekod sejarah, keperluan serta aspirasi penduduk. Berdasarkan data yang terperinci, mesyuarat pertama pasukan petugas antara agensi diadakan pada tahun 2021 dengan Datuk Bandar Majlis Bandaraya Ipoh mempengerusikan perbincangan. Hasil perbincangan berkala akhirnya membawa kepada pengenalpastian tanah seluas satu ekar yang diperuntukkan bagi tujuan pembinaan rumah penempatan semula untuk penduduk kampung ini.

3.2.3 Dapatan kajian kes sebagai asas cadangan VNR 2021

Dalam proses penulisan *Voluntary National Review* (VNR) 2021, Kerajaan Malaysia telah membuka ruang penyertaan kepada APPGM-SDG bagi merangka cadangan penyelesaian mampan yang selaras dengan Matlamat Pembangunan Lestari (SDG) untuk menangani isu dan keperluan masyarakat akar umbi. Berdasarkan dapatan kajian, APPGM-SDG mengemukakan cadangan pembentukan pasukan petugas antara agensi yang turut melibatkan pelbagai pemegang taruh sebagai mekanisme penyelesaian bersepadu di peringkat komuniti. Cadangan ini selari dengan penekanan dalam dokumen VNR 2021, seperti berikut:

“In localising SDGs, in addition to working with local authorities, efforts are being made to engage with the district offices. This is to ensure an inter-agency SDG delivery taskforce is organised at the district level to enhance the role of all agencies including a multi-stakeholder group (civil society, private sector and academic networks) in addressing economic, social and environmental concerns at the grassroots level.” (Malaysia VNR 2021, hlm. 120).

Cadangan ini membawa peluang untuk memperkasa peranan pejabat daerah, agensi kerajaan peringkat daerah dan pelbagai pemegang taruh yang terlibat seperti pemimpin komuniti, badan bukan kerajaan dan korporat ke arah konsensus bersama dalam menyelesaikan isu serta keperluan masyarakat yang dikenal pasti.

4. Penubuhan Inisiatif Intervensi Dasar Multi-Agensi peringkat daerah sebagai mekanisme penyelesaian *multi-stakeholders* bagi cabaran multidimensi trend mega pengganggu dalam konteks kependudukan.

Cadangan yang diketengahkan dalam VNR 2021 telah memberi impak besar apabila Kerajaan Malaysia, melalui Belanjawan 2024, memperuntukkan dana menerusi Kementerian Kewangan dan Yayasan Hasanah untuk melaksanakan cadangan tersebut. Inisiatif ini, yang dikenali sebagai intervensi dasar, bertujuan menubuhkan pasukan petugas multi-stakeholders di 55 kawasan Parlimen seluruh negara bagi mengadakan perbincangan berkala dan bergerak ke arah penyelesaian isu.

Seterusnya, berlaku penambahbaikan dalam terma pasukan petugas dengan penjenamaan semula sebagai **Jawatankuasa SDG Multi-Agensi Peringkat Daerah (J/K SDG)**, yang kini dilaksanakan di 63 daerah pentadbiran seluruh negara. J/K SDG ini dipengerusikan oleh Pegawai Daerah dan dianggotai oleh agensi-agensi kerajaan peringkat daerah, dengan tujuan membincangkan maklum balas terhadap isu yang dikenal pasti APPGM-SDG melalui pemetaan bersama komuniti serta mencari penyelesaian menyeluruh.

J/K SDG ini mempunyai empat objektif utama:

- i. Membolehkan perbincangan antara agensi bagi isu yang melibatkan penyelesaian bersilang agensi.
- ii. Mengenal pasti kekangan spesifik isu seperti kewangan, dasar/akta, politik, persilangan agensi dan lain-lain kekangan, serta membolehkan isu-isu yang boleh diselesaikan di peringkat daerah menuju penyelesaian.
- iii. Bagi isu yang memerlukan intervensi di peringkat negeri dan persekutuan, maklum balas agensi akan direkodkan dan dibawa ke peringkat perbincangan dasar bersama Parlimen dan kementerian.
- iv. Bagi isu yang telah diselesaikan sebelum penubuhan J/K SDG atau sedang diselesaikan selepas penubuhannya, APPGM-SDG akan merekodkan amalan terbaik dan contoh penyelesaian mampan daripada proses berkenaan agar dapat dijadikan bahan rujukan bagi kawasan lain

Selain penubuhan J/K SDG, inisiatif ini turut melaksanakan dua program pembangunan kapasiti dalam konteks advokasi dasar yang menyasarkan dua pemegang taruh utama di peringkat daerah, iaitu pemimpin tempatan dan pegawai kerajaan daerah. Melalui program ini, peserta diberi pendedahan mengenai Matlamat Pembangunan Lestari (SDG), kepentingan penglibatan efektif dalam advokasi dasar, sesi libat urus, serta pengukuhan penglibatan akar umbi dalam usaha pembangunan daerah.

Tambahan kepada agenda di atas, sebuah kajian kemiskinan multidimensi sedang dijalankan di 55 lokasi seluruh negara dengan melibatkan lebih 2,500 isi rumah. Kajian ini menilai tahap kemiskinan multidimensi dalam lima dimensi utama, iaitu pendidikan, kesihatan, taraf hidup, perlindungan sosial, serta kesepaduan sosial dan keselamatan.

Selain itu, inisiatif ini juga akan menerbitkan dokumen amalan terbaik dalam tadbir urus negara di peringkat daerah dan negeri sebagai contoh kepada kawasan lain, sekaligus membolehkan perkongsian pembelajaran antara agensi.

Keseluruhan gerak kerja ini digerakkan melalui pelantikan Penyelaras Tempatan (Local Coordinator, LC), iaitu individu daripada 55 lokasi inisiatif yang bekerjasama rapat dengan pejabat daerah dan komuniti akar umbi. LC berperanan sebagai peneraju inisiatif di setiap kawasan serta memainkan peranan penting dalam komunikasi bersama Pegawai Daerah, pejabat daerah, agensi kerajaan, NGO, dan komuniti akar umbi. Peranan mereka bukan sahaja menggerakkan inisiatif, tetapi juga memantau dan merekod amalan terbaik dalam proses penyelesaian isu serta keperluan di peringkat lokal.

Peranan LC sebagai peneraju turut diperkasa oleh APPGM-SDG dengan mengetuai dan menyelaras kerjasama bersama rakan APPGM-SDG lain di peringkat tempatan seperti pemimpin kejrangan, rakan projek mikro (rakan solusi), ejen belia SDG dan organisasi nasional dalam pergerakan SDG di Malaysia. Antara bentuk pembangunan kapasiti yang diberikan ialah pendedahan kepada pelbagai disiplin penyelidikan, kepimpinan tempatan, pembangunan sosial, perniagaan sosial, struktur intervensi dasar serta penilaian impak.

Kesemua objektif inisiatif ini dirangka berdasarkan pengalaman lima tahun APPGM-SDG dalam menangani keperluan komuniti akar umbi serta penglibatan dasar bersama agensi di pelbagai peringkat. Keunikan APPGM-SDG terletak pada kedudukannya di Parlimen Malaysia dan sokongan dana yang membolehkan pelaksanaan gerak kerja ini. APPGM-SDG mempunyai peluang meluas untuk bermesyuarat dengan agensi di pelbagai peringkat termasuk Parlimen, kementerian, wilayah, negeri dan pentadbiran daerah. Kerjasama rentas peringkat ini membolehkan APPGM-SDG menganjurkan sesi mesyuarat dan perbincangan isu masyarakat secara langsung ke arah penyelesaian dalam bidang kuasa agensi masing-masing. Kedudukan APPGM-SDG dan tahap penglibatannya diuraikan dalam Rajah 4.1 di bawah.



Rajah 4.1 Kedudukan APPGM-SDG dan peringkat penglibatan bersama kerajaan (Sumber: APPGM-SDG, 2025)

5. Cabaran dalam pelaksanaan dan mitigasi

Inisiatif ini pada mulanya menghadapi pelbagai cabaran dari segi permohonan kelulusan, jangka masa kebenaran, tatacara pengendalian dan pengenalpastian penyelaras tempatan yang betul. Disebabkan keunikan inisiatif ini, cabaran yang dihadapi juga adalah daripada pelbagai pihak berkepentingan yang terlibat dalam inisiatif ini.

5.1 Perolehan kebenaran bagi perjalanan inisiatif intervensi dasar

Cabaran utama bagi gerak kerja ini ialah keperluan mendapatkan kebenaran bertulis. Ia bermula dengan surat sokongan daripada Kementerian Ekonomi, diikuti dengan proses memperoleh kebenaran di peringkat kerajaan negeri, sebelum kebenaran di peringkat daerah dapat diberikan oleh Pegawai Daerah. Tempoh keseluruhan proses ini mengambil masa lebih enam bulan. Namun, dengan komitmen pegawai APPGM-SDG yang berterusan melalui sesi pertemuan bersama pentadbiran serta pembentangan awal, gerak kerja di peringkat daerah akhirnya dapat dimulakan.

5.2 Perubahan dalam pentadbiran daerah

Cabaran lain yang timbul ialah penukaran Pegawai Daerah semasa proses permohonan kebenaran, yang menyebabkan proses tersebut tertangguh dan memerlukan perjumpaan semula dengan Pegawai Daerah baharu sebelum kebenaran dapat diperolehi. Walaupun berlaku kelewatan, komitmen LC dalam menetapkan mesyuarat serta kemahiran komunikasi dan usaha membina hubungan baik dengan pegawai di pejabat daerah akhirnya membuka jalan penyelesaian kepada cabaran ini.

5.3 Kebergantungan kepada pelbagai pemegang taruh dalam menjayakan inisiatif

Ini merupakan salah satu cabaran utama yang berterusan bagi inisiatif ini kerana kejayaannya bergantung kepada pelbagai pemegang taruh yang tidak mempunyai tanggungjawab langsung terhadap objektif inisiatif. Setiap pihak mempunyai mandat dan agenda tersendiri yang kadangkala tidak sejajar dengan keutamaan gerak kerja inisiatif ini. Perbezaan keutamaan ini boleh menimbulkan kelewatan, kekangan dalam membuat keputusan, atau tahap komitmen yang tidak konsisten. Oleh itu, usaha berterusan diperlukan untuk menyelaraskan peranan, membina konsensus, dan menggalakkan rasa pemilikan bersama agar matlamat inisiatif dapat dicapai secara kolektif.

5.4 Dinamik politik dan pemahaman SDG

Perbezaan pentadbiran dan dinamik politik antara persekutuan dan negeri turut menjadi cabaran utama kepada pelaksanaan inisiatif. Dinamik fahaman ini, ditambah dengan salah tanggapan bahawa SDG merupakan agenda Barat, sering menimbulkan persoalan dan keraguan semasa sesi pembentangan inisiatif di pelbagai peringkat. Walau bagaimanapun, kedudukan APPGM-SDG sebagai sebuah badan di bawah Parlimen Malaysia yang bersifat dwipartisan serta bebas daripada pengaruh parti politik membolehkan hubungan dan komunikasi yang lebih berkesan dibina dalam ruang politik yang mencabar ini.

6. Impak daripada inisiatif intervensi dasar

6.1 Membawa perbincangan dasar ke peringkat tempatan

Penilaian impak sesebuah dasar adalah pada keberkesanan dasar tersebut semasa pelaksanaannya di peringkat akar umbi. Malaysia mempunyai banyak dasar yang mampan, namun dari segi pelaksanaan, dasar-dasar ini berhadapan dengan tekanan birokrasi, tahap penerimaan kerajaan negeri serta konflik antara akta, enakmen dan undang-undang kecil.

Melalui inisiatif ini, perbincangan dasar sedang dibawa ke peringkat Parlimen dan kementerian dengan input daripada pelaksana dasar, iaitu agensi kerajaan peringkat daerah. Anggota agensi di peringkat daerah mempunyai banyak input berkaitan kekuatan, kelemahan serta cadangan penambahbaikan kepada dasar sedia ada atau input bagi pembentukan dasar dan akta baharu. Melalui Mesyuarat Jawatankuasa SDG peringkat daerah, input ini dikumpulkan dan diguna pakai sebagai bahan penyelidikan bagi membawa impak positif dalam advokasi dasar di peringkat kementerian.

6.2 Modul kebangsaan dan pembelajaran mengenai advokasi dasar untuk pemimpin komuniti tempatan.

APPGM-SDG, melalui pengalaman akar umbi, telah membangunkan modul latihan advokasi dasar bagi kumpulan sasar, pemimpin komuniti tempatan dan pegawai kerajaan peringkat daerah di 55 kawasan seluruh negara (Rujuk Buku Panduan Modul Program Pembangunan Kapasiti Intervensi Dasar di Peringkat Daerah: Siri 1 – Pemimpin Tempatan, dan Buku Panduan Modul Program Pembangunan Kapasiti Intervensi Dasar di Peringkat Daerah: Siri 2 – Agensi Daerah). Tujuannya adalah untuk meningkatkan keupayaan mereka agar mereka dapat menyertai secara berkesan dalam sesi libat urus dan proses membuat keputusan pembangunan peringkat daerah.

Penggubalan modul ini adalah berasaskan usaha yang bermula daripada projek Solusi mikro kita di Cheras yang memulakan usaha menggabungkan persatuan penduduk bagi menangani secara sistematik isu kemajuan terlampau di Cheras. Usaha yang bermula pada tahun 2022 telah melihat banyak Gerak kerja Pembangunan kapasiti dan hari ini, Gerakan ini didaftarkan sebagai Kuala Lumpur Resident Action for Sustainable Development yang mempunyai penglibatan 74 persatuan penduduk, 6 NGO dan 1 universiti (KLRA+SD, 2025).

Modul ini sedang dijalankan bagi memperkasa kira-kira 1,650 pemimpin tempatan dan pegawai Kerajaan peringkat daerah, yang pastinya akan memberi impak positif terhadap perancangan pembangunan mampan di peringkat daerah melalui input berasaskan fakta serta pandangan yang lebih berkesan daripada pemimpin setempat.

6.3 Kajian tambahan mellaui inisiatif ini bagi impak dasar

APPGM-SDG, melalui pengalaman di peringkat akar umbi, telah membangunkan modul latihan advokasi dasar bagi kumpulan sasar iaitu pemimpin komuniti tempatan dan pegawai kerajaan peringkat daerah di 55 kawasan seluruh negara. Tujuan utama modul ini adalah untuk meningkatkan keupayaan mereka supaya dapat menyertai secara berkesan dalam sesi libat urus serta proses membuat keputusan pembangunan di peringkat daerah.

Penggubalan modul ini berasaskan usaha yang bermula daripada projek Solusi Mikro di Cheras, yang mempelopori pendekatan menggabungkan persatuan penduduk bagi menangani secara sistematik isu pembangunan pesat di kawasan tersebut. Usaha yang bermula pada tahun 2022 telah menghasilkan pelbagai gerak kerja pembangunan kapasiti, dan pada masa ini gerakan tersebut telah didaftarkan sebagai Kuala Lumpur Resident Action for Sustainable Development, dengan penglibatan 74 persatuan penduduk, 6 NGO dan sebuah universiti (*Rujukan: <https://www.klrapius.org/aboutus/history>*).

Modul ini kini sedang dilaksanakan bagi memperkasa kira-kira 1,650 pemimpin tempatan dan pegawai kerajaan peringkat daerah, yang dijangka memberi impak positif terhadap perancangan pembangunan mampan di peringkat daerah melalui input berasaskan fakta serta pandangan yang lebih berkesan daripada pemimpin setempat.

6.4 Kajian MPI untuk mendedahkan keperluan sebenar komuniti terpinggir di negara

Kajian Kemiskinan Multi-dimensi (MPI) sedang dijalankan melalui inisiatif ini pada skala kebangsaan, merangkumi 55 lokasi dan melibatkan lebih 2,500 isi rumah sebagai responden. Dengan metodologi yang telus dalam pelaksanaan dan pengumpulan data, kajian ini dijangka menghasilkan set data komprehensif untuk dibentangkan kepada Kerajaan Persekutuan, United Nations Development Programme (UNDP) Malaysia, Oxford Poverty and Human Development Initiative (OPHI), Yayasan Hasanah, GLC/GLIC serta pihak berkepentingan utama lain. Hasil kajian ini diharapkan dapat memberi impak positif kepada dasar berkaitan kemiskinan serta memberi manfaat kepada kumpulan sasaran yang terlibat (rujuk Buku Panduan Modul Latihan Kajian Kemiskinan Multidimensi dalam Kalangan Komuniti di 55 Kawasan Parlimen di Malaysia Berasaskan Multidimensional Poverty Index (MPI)).

Selain itu, APPGM-SDG juga sedang meneroka kemungkinan untuk mengadakan sesi susulan bersama isi rumah yang terlibat bagi mengenal pasti serta memenuhi keperluan mendesak mereka secara lebih berkesan.

7. Kesimpulan

Malaysia sebagai sebuah negara sedang membangun sedang berhadapan dengan pelbagai cabaran ekonomi sejagat yang memberi impak negatif terhadap kependudukan negara. Isu-isu yang diberi perhatian dalam penulisan ini termasuk ekonomi penjagaan ke arah penjagaan jangka panjang (*long term care*), ekosistem kebajikan yang semakin tenat, kesihatan mental yang masih kurang diberi fokus, kemiskinan multidimensi yang semakin meruncing, serta isu berkaitan sektor informal yang belum diiktiraf turut terkesan oleh cabaran tersebut. Trend mega pengganggu ini dapat diperhatikan secara konsisten di kebanyakan negara membangun, dan penyelesaiannya menuntut penglibatan pelbagai pihak berkepentingan melalui pendekatan '*multi-stakeholders*' dalam membina ekosistem penyelesaian yang bersepadu terhadap isu-isu kependudukan.

Kajian kes APPGM-SDG menawarkan pendekatan yang unik melalui penglibatan pelbagai pihak berkepentingan, di samping memberikan nilai tambah dari segi pengetahuan, penyelidikan dan dapatan langsung daripada pelaksana dasar di peringkat akar umbi. Pendekatan ini berupaya menghasilkan penyelesaian mampan terhadap trend mega pengganggu dalam konteks kependudukan. Usahasama antara kerajaan, badan bukan kerajaan dan komuniti akar umbi ini diharapkan dapat menjadi pedoman kepada semua pihak sebagai model penyelesaian mampan bagi membangunkan dasar kependudukan negara yang lebih holistik.

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065-057

UNDERSTANDING PERIOD POVERTY THROUGH EXPERT LENSES: CONTRIBUTING FACTORS AND HEALTH IMPACTS IN THE MALAYSIAN CONTEXT

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ABSTRACT

Period poverty is an emerging public health concern in Malaysia, referring to the lack of access to menstrual hygiene products, clean water, safe facilities, and adequate menstrual health education. This study explores healthcare experts' perspectives on the root causes and health consequences of period poverty, aiming to inform strategies for health system preparedness and gender equity. A focus group discussion (FGD) was conducted with five experts, including Family Medicine Specialists, an Obstetrics and Gynaecology specialist, and a national policy maker. The session was guided by a semi-structured protocol and analysed using a hybrid thematic approach, combining both deductive and inductive methods. Findings were organised into two core domains: factors contributing to period poverty and health consequences. Experts identified four major contributors to period poverty, namely, financial hardship, limited access to menstrual products and hygiene infrastructure, insufficient menstrual education, and social stigma. Health complications such as urinary tract infections, skin rashes, fungal infections, and reproductive tract infections were commonly observed, along with psychosocial effects including reduced self-esteem, social withdrawal, and increased absenteeism from school or work. The discussion highlighted that women from low-income or remote communities face compounded barriers that compromise both personal dignity and physical health. These findings highlighted the need for inter-ministry or inter-agency collaboration to improve menstrual health services and support systems. By addressing period poverty through informed health policy and service delivery, Malaysia can move toward a more inclusive and resilient healthcare system that supports women's health and national development goals.

Keywords: Period Poverty, Menstrual Hygiene, Health System Preparedness, Gender Equity, Health Security.

066-060

AN EXPLORATION ON KNOWLEDGE TOWARDS POST PARTUM INTRAUTERINE CONTRACEPTIVE DEVICE AMONG CONTRACEPTIVE PROVIDERS IN HOSPITAL CANSELOR TUANKU MUHRIZ (HCTM), WILAYAH PERSEKUTUAN KUALA LUMPUR, MALAYSIA

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ABSTRACT

Objective:

Postpartum intrauterine contraceptive devices (PPIUCD) have emerged as a promising contraceptive method for women during the postpartum period. This method provides women with a highly effective, long-acting form of contraception while taking advantage of the immediate postpartum period. Hence, this study assesses the level of knowledge among contraceptive providers, training in improving counselling practices and recommendation strategies on PPIUCD in the Obstetrics & Gynaecology Department at Hospital Canselor Tuanku Muhriz (HCTM), Cheras, Wilayah Persekutuan Kuala Lumpur, Malaysia.

Methods:

This cross-sectional study evaluated the knowledge level of PPIUCD among 158 healthcare providers in the Obstetrics & Gynaecology Department at HCTM, conducted from December 1, 2023, to February 28, 2025 (15 months). Participants were selected using purposive convenience sampling and included medical officers, nurses, and health assistants. Data were collected using a structured questionnaire adapted from Abebaw Y et al. (with permission). Statistical analysis was performed to identify factors associated with outcome.

Keywords: Postpartum Intrauterine Contraceptive Devices, Contraception.

078-066

EDUCATIONAL ASPIRATION AND URBAN POVERTY AMONG SECONDARY STUDENTS IN KUALA LUMPUR: PRELIMINARY FINDINGS

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ABSTRACT

Education and poverty are critical global issues and are listed among the Sustainable Development Goals (SDGs), which seek to ensure a sustainable future and improve quality of life. In Malaysia, quality education has been a central pillar in addressing socio-economic inequality. Nevertheless, the growing educational disparities among students from urban poverty areas such as Kuala Lumpur could hinder their educational aspirations. Educational aspiration is a critical determinant of long-term socio-economic mobility, particularly for youth in urban poor communities. Students from disadvantaged backgrounds often face barriers not only from financial hardship but also from the influence of their immediate social environment. With this background, this study investigates the impact of urban poverty, peer influence, and social media on parental involvement and how these factors collectively influence the educational aspirations of young adults. A quantitative survey was conducted using a stratified probability sampling approach involving 100 secondary school students in the Federal Territory of Kuala Lumpur. Descriptive statistics and multiple regression analyses were conducted using SPSS Version 29 to identify patterns and relationships among variables. Preliminary findings revealed that urban poverty significantly and negatively predicted both educational aspiration ($\beta = -0.378$, $p < 0.001$) and parental involvement ($\beta = -0.301$, $p = 0.003$). Social media influence positively predicted educational aspiration ($\beta = 0.195$, $p = 0.049$) and parental involvement ($\beta = 0.272$, $p = 0.007$), while peer influence was not significant in either model ($p > 0.05$). These results indicate the vital role of structural barriers, such as economic hardship, alongside the potential of digital engagement in supporting educational goals. The results also align with Bronfenbrenner's Ecological Systems Theory, highlighting the impact of exosystems (urban poverty) and mesosystems (social media) on youth development. These outcomes have implications for educational and social policy, particularly in reducing inequality and enhancing parental involvement in urban poor communities.

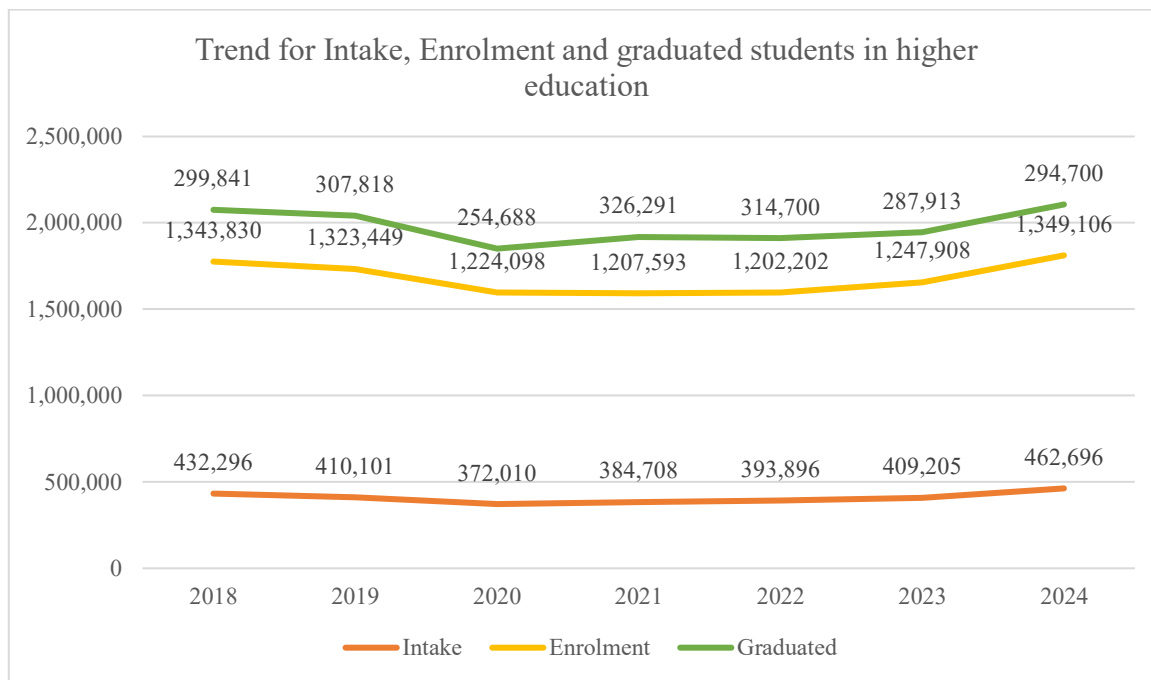
Keywords: Educational Aspiration, Urban Poverty, Parental Involvement, Peer Influence, Social Media Influence.

INTRODUCTION

BACKGROUND

It has been highlighted by the Ministry of Higher Education due to a lack of students to enrol in tertiary education. The enrolment in tertiary education declined from the year 2018 to 2022. Figure 1 shows a decline trend of student enrolment into higher education from 1,343,830 in 2018 to 1,202,202 in 2022. However, from 2023 to 2024, there was an upward trend in enrolment, particularly in 2024, when the number of students surged from 1,202,202 in 2022 to 1,349,106 in 2024.

Figure 1: Intake, enrolment and graduated students in higher education from the year 2018–2020. (Source: Ministry of Higher Education, 2025)



Malaysia is in the process of urbanisation with a growing population in urban areas. The household expenditure has increased to 1.7 times that of rural areas, which is about a 4.2% increase in urban areas compared to only 3.7% in rural areas (DOSM, 2022). In urban areas, it went from RM5,007 to RM5,675 for household expenditure annually, while in rural areas, it went from RM3,051 to RM3,409. This shows a huge difference for the population living in rural and urban areas, which could cost more due to an increase in expenditure, especially in housing, electricity, water, gas and fuels. Other statistics collected by DOSM (2022) indicate the highest average amount spent every month on household consumption is in Wilayah Persekutuan Putrajaya at RM8,897, followed by Wilayah Persekutuan Kuala Lumpur at RM7,823 and lastly Selangor at RM6,770 per month. Table 1 indicates that there is an increase in absolute poverty in Malaysia, as the pre-crisis level was 5.6, whereas the post-crisis level was 6.2 per cent. The absolute poverty in urban regions also increased by 0.7 per cent between 2022 and 2019, which is a percentage rate varying at 3.8. Absolute poverty is being defined as those in society that cannot afford even the basic necessities like food, shelter and clothing to sustain themselves (Hila, 2019). Mukundan (2019) points out that 30 per cent of those living in the cities experience poverty conditions. Poverty has become a barrier to education

because it leads to various problems, and one of them is the non-availability of the internet and the tools to study at home.

Table 1: Absolute poverty by strata in 2019 and 2022. (Source: Ministry of Economy, Department of Statistics Malaysia, 2022)

Year	2019 (%)	2022 (%)
Areas		
MALAYSIA	5.6	6.2
URBAN	3.8	4.5
RURAL	12.4	12.0
Race		
BUMIPUTERA	7.2	7.9
CHINESE	1.4	1.9
INDIANS	4.8	5.4

PROBLEM STATEMENT

This study examines the educational aspiration of secondary school students in the Federal Territory of Kuala Lumpur based on urban poverty, peer influences, social media influences and parental involvement. In recent years, the UCSI Poll Research Centre (2023) has administered a poll to find out what SPM leavers plan for the future, and the results show that 51% want to continue studying into tertiary education and 10% are not sure about their future. The reason they refuse further studies is because they want to work before further studies, which amounted to 34% out of 1000 respondents. 32% stated that tertiary education fees are expensive, and 34% of the respondents chose to be involved as influencers associated with social media. The lack of human capital and human resources would cause inadequate skilled manpower for economic growth. The skilled workforce in Malaysia is only 28%, while the targeted percentage is 35% (“Deputy HR minister”, 2023). SPM leavers joining the gig economy causes a lower number of skilled manpower, and this could cause a skills mismatch in human resources.

RESEARCH OBJECTIVES

- To examine the impact of urban poverty, peer influence and social media on the educational aspirations of young adults
- To examine the impact of urban poverty, peer influence and social media on parental involvement

RESEARCH QUESTIONS

- Do urban poverty, peer influence and social media have an effect on the educational aspirations of young adults?
- Do urban poverty, peer influence and social media have a positive impact on parental involvement?

RESEARCH HYPOTHESES

H1:0 (Null): There is no significant effect of urban poverty, peer influence, and social media on students' educational aspiration.

H1:1 (Alternative): There is a significant effect of urban poverty, peer influence, and social media on students' educational aspiration.

H2:0 (Null): Urban poverty, peer influence, and social media have no significant effect on parental involvement.

H2:1 (Alternative): Urban poverty, peer influence, and social media have a significant effect on parental involvement.

SIGNIFICANCE

The study will contribute to the research about educational aspiration, particularly among the youths in secondary schools living in the urban poverty region. A literature gap exists when it comes to educational aspiration and parental involvement and encompasses the factors of urban poverty, peer influence and social media influence. The government bodies like the Ministry of Education and the Ministry of Higher Education will benefit from this research because there will be increased information on the level and passion of secondary school students for education, which leads to the transformation of young adults into the workforce. In addition, the Ministry of Human Resources can get information about the outcomes to establish additional employment positions among the graduates. Moreover, young adults are supposed to be under the custody of parents with regard to surveillance and supervision to elevate their educational expectations. In addition, educators should mentor the learners in a manner that would enable them to possess enough knowledge about success in life beyond high school.

LITERATURE REVIEW

THEORY

This study is supported by Bronfenbrenner's ecological systems framework (1979) as it is conceptualised by a few layers of environment. It consists of a four-layer framework that is vital for individual development, which are microsystems, mesosystems, exosystems, and macrosystems. Microsystems is the innermost of the layers and is crucial since it deals with the immediate environment, which will influence the individual, like home, school and the neighbourhood. Mesosystems refers to the connection between layers of microsystems to each other (home to school and neighbourhood). This is significant because most of the development of the young child is carried out in this layer, specifically by the parents. The exosystem is another level in this framework that does not directly influence the children, but the events that occur shall influence them in their growth. This level consists of the workplace of the parents, local government, school board and any decision that upper management has already made will influence the growth of the children. The widest level of this framework is the macrosystem, which consists of social, economic and cultural effects which could cause cascading impacts on other levels below this layer. Previous research by Marjoribanks (1997), Antony (2022), Kocayoruk (2016), and Singh et al. (2022) indicated that Bronfenbrenner's ecological model is relevant in children's development and that the children's development occurred at multiple levels. Marjoribanks (1997) supported the Bronfenbrenners's ecological model, as it found that the environment of family culture has a positive impact on adolescents' aspirations. Antony's (2022)

study found that the first layer, which is the microsystem, is important, especially at the family level. The researcher stated that resilience of a child can be developed at a young age through parents and school surroundings. Moreover, teachers play important roles in the first layer, as children are able to develop their resilience through given homework and peer relationships. Kocayoruk's (2016) study found that the interaction between two levels in the framework would affect the development of children, which are microsystems and mesosystems. It showed that the interaction between parents and school is vital, as higher interaction between them causes an increase in the academic achievement of children. Singh et al. (2022) found that the first layer of the framework is important for children's development. This includes anticipation from parents and teachers towards children, which causes higher educational aspiration in children. The direct involvement of teachers and parents increases the youth development.

EDUCATIONAL ASPIRATION

Education is vital for the development of an individual, and by being educated, an individual's life can be transformed through getting better jobs and becoming successful. The higher the level of education, the higher the country's income (Jamir & Ezung, 2017). This shows that by being educated, the level of poverty can be decreased and affect the growth of the economy by increasing the living standard of the individual. A past study by Borah et al. (2023) stated that educational aspiration refers to the achievement goals set by an individual for their future. Aspiration can be influenced by various factors, including family, teachers, peers, and so on. Due to concerns raised by the Ministry of Higher Education regarding the fact that many youths decide not to pursue studies after SPM, many steps have been taken to inspire youth to further their studies. This includes the processing fees of UPUOnline fully paid by MOHE, fully funded for firstborns from B40 families to enter tertiary education, by implementing hybrid learning for youth that want to be flexible while working and studying at the same time, and allowing intake into Vocational Education and Training (TVET) with only basic results so that youths are able to more easily further their studies in higher education.

URBAN POVERTY

Hila (2019) stated that urban poverty was used to explain the economic and social problems occurring in the cities to create a divide between both the benefited and the deprived people. Othman et al. (2021) also indicated that perception of poverty has a positive association with academic optimism. Students in the urban poor environment are more ambitious in education, and they also excel in study.

PARENTAL INVOLVEMENT

Ntekane (2018) stated that parents should be involved in the education of their children and participate in school attendance, like joining parents' meetings and school committees, so that they can find out more information about how their children are doing in school. According to Tehlan and Zha (2018), the involvement by parents is crucial, and when they play a greater role in their children's education at school, the educational aspiration of students also enhances. Satar et al. (2020) observe that a parent that works has less to do with their children because of a lack of time. The parents of high-income families are found to exhibit greater involvement with their children in the field of education and be more participatory in different activities like reading, attending numerous events, and seeking opinions of schoolteachers about their performance grades.

METHODOLOGY

RESEARCH DESIGN AND METHOD

This study used a quantitative survey research design, as it is appropriate to describe trends and relationships among variables by using numeric data from a population (Creswell & Guetterman, 2019). By using quantitative data, it provides more respondents, and it will assist in viewing the data in larger pictures compared to qualitative data (Ahmad et al., 2019).

POPULATION AND SAMPLING

This study used data provided by 100 urban poor secondary school learners in the Federal Territory of Kuala Lumpur. The schools have been picked randomly in the Kuala Lumpur region. The researchers procured the list of Form 4 students that was previously grouped under B40 families of the Federal Territory of Kuala Lumpur Education Department. The researchers of the research then randomly chose the schools where a high number of B40 students are studying in order to collect the data. Using the list that was compiled, 4 secondary schools have been picked to take part in the poll. Data were obtained through the cooperation of each school counsellor to be administered to 25 Form Four students per school who happened to be from B40 families.

SURVEY RESPONDENTS

The respondents from the survey showed almost an equal percentage of male and female, with 43% and 57%, respectively, who were randomly selected by their counsellors from each school. Malay respondents were the majority in this study at 81%, while Chinese made up 9%, Indian respondents comprised 6%, and other ethnicities accounted for only 4%. In the demographic section of the survey, there were also questions on the class stream of students and household income of their families. Almost half of the respondents were from other class streams (47%), while the remainder were from the science stream (11%), accounting stream (20%) or arts stream (22%). All of the respondents belonged to B40 families, and exactly half of them earned less than RM2559, 30% earned between RM2560 and RM3439, 13% earned between RM3440 and RM4309, and 7% earned between RM4310 and RM5249. Among the 100 students, more than 50% were not sure about what to do after SPM. Meanwhile, 22% of them chose to pursue TVET, and 11 out of 100 students chose to attend community college. The lowest percentage was for the option to enrol in matriculation.

INSTRUMENTATION

A self-reported questionnaire was utilised as an instrument to measure urban poverty, peer influence, social media influence, and parental involvement in educational aspiration. The questions and responses have been adjusted and changed for the study, and it is premised on an analysis of urban poverty and educational aspiration studies. These items were adapted to meet five constructs that include urban poverty, peer influence, social media influence, parental involvement and educational aspiration. Educational aspiration consists of 9 items that were adapted and modified from Cuy and Salinas (2019) and Aminudin et al. (2023); peer influence from Armsden and Greenberg (1987), Warner-Wilson and Arbel (2000), and Smith and Chonody (2010); social media influence from Van Whyk (2013), Gupta and Bashir (2018), and Bello and

Hamzat (2020); parental involvement from Naseema and Gafoor (2001), Majerus (2011), Chan et al. (2012), and Kimaro and Machumu (2015); and urban poverty was adapted from Chinedu (2022). Items under each construct were refined to fit the secondary school setting with the guidance of five experts in the field. All the constructs had desirable reliabilities based on the threshold of 0.80 as social science constructs (i.e., 0.80 for educational aspiration, 0.75 for peer influence, 0.78 for social media influences, 0.82 for parental involvement, and 0.78 for urban poverty) (Taber, 2017).

DATA COLLECTION

The participants included in this survey study were 4 B40 students in 4 secondary schools in Kuala Lumpur. The Form 4 students are provided with self-administered questionnaires with the assistance of the counsellors using the sample populations selected. The collection of data was carried out manually by the researcher, and it was handed to four secondary schools, which were retrieved after the respondents had filled in the questionnaires. It provides a high level of response rate by doing it manually through administering the questionnaires to every school.

DATA ANALYSIS

The data that were collected from the survey questionnaires were analysed by using descriptive statistics and multiple regression with SPSS Version 29 to identify patterns and relationships among variables.

RESULTS

DESCRIPTIVE STATISTICS

The descriptive statistics presented in Table 2 showed that the educational aspiration of secondary school students was high relative to the other construct ($M = 3.80$, $SD = 0.56$). The participation of parents ($M = 3.58$, $SD = 0.53$) and influence by peers ($M = 3.14$, $SD = 0.48$) were also of a moderate character. The constructs of social media influence ($M = 2.79$, $SD = 0.50$) and urban poverty ($M = 2.25$, $SD = 0.61$) had somewhat insignificant values as compared to others, which shows that students did not believe that anything urban-related has the ability to influence them to a significant degree in their academics and aspirations.

Table 2: Descriptive statistics for constructs

Constructs	Mean	Standard Deviation
EDUCATIONAL ASPIRATION	3.80	0.56
PEER INFLUENCE	3.14	0.48
SOCIAL MEDIA INFLUENCE	2.79	0.50
PARENTAL INVOLVEMENT	3.58	0.53
URBAN POVERTY	2.25	0.61

MULTIPLE REGRESSION ANALYSIS

The research employs multiple linear regression to assess the influence of urban poverty, peer influence and social media influence on two dependent variables: educational aspiration and parental participation. According to table 3, the findings indicated that urban poverty ($p < 0.05$)

and social media influence ($p < 0.05$) had a significant effect in predicting the educational aspiration of the students, whereas peer influence ($p > 0.05$) was revealed to be insignificant. In the case of parental involvement as a dependent variable, two predictors are significant, namely, urban poverty ($p < 0.05$) ($\beta = -0.301$), social media influence ($p < 0.05$) ($\beta = 0.272$) and peer influence ($p > 0.05$) ($\beta = 0.085$). The educational aspiration model and parental involvement model gave the model fit (R^2) as 14.7% and 13.3%, respectively, indicating that it is acceptable. All the values of VIF are less than 5, and this implies that there is no multicollinearity problem, and it further demonstrates that the models are stable.

Table 3: Multiple regression results for educational aspiration and parental involvement

Dependent Variable	Independent Variables	β	p-value	R^2	VIF
EDUCATIONAL ASPIRATION	Urban poverty	-0.378	<0.001	0.147	1.071
	Peer influence	-0.017	0.858		1.030
	Social media influence	0.195	0.049		1.072
PARENTAL INVOLVEMENT	Urban poverty	-0.301	0.003	0.133	1.071
	Peer influence	0.085	0.382		1.030
	Social media influence	0.272	0.007		1.072

HYPOTHESIS TESTING

H1:0 (Null): There is no significant effect of urban poverty, peer influence, and social media on students' educational aspiration.

H1:1 (Alternative): There is a significant effect of urban poverty, peer influence, and social media on students' educational aspiration.

The results, based on multiple regression analysis, showed that urban poverty ($\beta = -0.378$, $p < 0.001$) and social media influence ($\beta = 0.195$, $p = 0.049$) had a significant impact on educational aspiration, while peer influence ($\beta = -0.017$, $p = 0.858$) was not significant. Since at least one predictor is significant, the null hypothesis is rejected.

H2:0 (Null): Urban poverty, peer influence, and social media have no significant effect on parental involvement.

H2:1 (Alternative): Urban poverty, peer influence, and social media have a significant effect on parental involvement.

The results, based on multiple regression analysis, showed that two predictors had a significant impact on parental involvement, which are urban poverty ($\beta = -0.301$, $p = 0.003$) and social media influence ($\beta = 0.272$, $p = 0.007$). Peer influence ($\beta = 0.085$, $p = 0.382$) had no significant impact on parental involvement. Therefore, the null hypothesis is rejected, as at least one predictor had a statistically significant impact.

DISCUSSIONS

This study presents information on relationships between urban poverty, peer influence, social media influence, educational aspiration, and parental involvement concerning secondary school in Kuala Lumpur.

The regression result showed that there was a significant negative impact of poverty in the urban areas on educational aspiration ($\beta = -0.378$, $p < 0.001$). This corroborates the existing literature that economic adversity can restrict the motivation, resources, and perceived higher educational opportunities of students. It conforms to the Ecological Systems Theory by Bronfenbrenner, which maintains that the family income level and neighbourhood environment (microsystem and exosystem) influence the aspirations of the students.

Social media influence was found to have a significant positive effect on educational aspiration ($\beta = 0.195$, $p = 0.049$). This suggests that, when used constructively, social media platforms may expose students to educational opportunities, role models, and motivational content, potentially enhancing their academic goals. However, peer influence was not a significant predictor ($\beta = -0.017$, $p = 0.858$), implying that, in this sample, peer interactions did not directly impact aspirations.

For parental involvement, urban poverty again showed a significant negative effect ($\beta = -0.301$, $p = 0.003$), consistent with the literature suggesting that financial hardship can reduce parents' ability to actively engage in their children's education due to time, resource, and stress constraints. Conversely, social media influence positively affected parental involvement ($\beta = 0.272$, $p = 0.007$), possibly due to improved communication channels between parents, schools, and educational communities. Peer influence was again found to be non-significant ($\beta = 0.085$, $p = 0.382$), indicating that peers' behaviours and attitudes towards education may not strongly influence parental engagement in this context.

These results support Bronfenbrenner's perspective that multiple environmental systems interact to shape a student's educational trajectory. Urban poverty operates at the exosystem level, indirectly constraining opportunities, while social media operates at the mesosystem level, potentially bridging communication and providing resources that support aspirations and parental engagement.

The findings highlight the need for targeted interventions addressing structural barriers created by urban poverty. Educational stakeholders should consider programmes that leverage social media for academic and parental engagement purposes. However, peer influence requires further investigation, as its lack of significance in this study may be attributable to cultural, contextual, or measurement factors.

CONCLUSION

This study examined the impacts of urban poverty, peer influence, and social media influence on educational aspiration and parental involvement among 100 secondary school students in the Federal Territory of Kuala Lumpur. The multiple regression results revealed that urban poverty had a significant negative relationship with educational aspiration as well as parental involvement. This indicates that challenges in socio-economic conditions can lower the motivation of students towards their academic achievement and limit the engagement of parents in education, which causes a decrease in the educational aspiration of children. Social media influence showed a significant positive impact on both educational aspiration and parental involvement, suggesting

that digital platforms offer opportunities for communication between parents and children to increase their educational aspiration. The last predictor was peer influence, which did not have any significant impact on either educational aspiration or parental involvement. This shows that peer influence may not have a significant impact on shaping the development or affecting the educational aspiration of an individual. This study also supports Bronfenbrenner's Ecological System Framework, where the mesosystem (social media influence) and exosystem (urban poverty) have more impact than other layers. The findings demonstrate how structural barriers, such as lower household income that could affect the ability for parents to provide for their children, still exist in urban poor neighbourhoods, and how new digital platforms may be useful in educational settings.

RECOMMENDATIONS

A few recommendations can be made based on this study's findings. Firstly, the policy intervention to address the issues of urban poverty, especially in the Kuala Lumpur area. Government and NGOs should prioritise urban areas affected by poverty to reduce disparities and inequalities, especially in education, to support the learning of students. To increase the parental involvement of families from urban poor areas, schools should facilitate workshops enabling parents to engage with their children by considering their time constraints and lack of resources that could be faced by the low-income families. Parental involvement can be strengthened by harnessing the social media platforms through sharing information and virtual meetings between parents, teachers, and students, especially for parents that face time constraints due to working. Furthermore, although this study found that peer influence was not significant in relation to educational aspirations, this may be due to the small sample size used for analysis. Peer influence could be explored further by using a bigger sample, which may yield positive effects on the educational aspiration of students. For further research, this study could be expanded to a larger population across other states to examine the relationships between the predictors selected.

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079-068

SHIFTING FROM INDIVIDUAL TO FAMILY THERAPY: A NECESSARY PARADIGM FOR MALAYSIA'S MENTAL HEALTH FUTURE

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ABSTRACT

This paper advocates embedding activism within Malaysia's mental health field through family therapy, offering a crucial shift from the traditional individual-focused model. In a multicultural society where family is central to identity and well-being, mounting pressures from urbanisation, academic demands, shifting gender roles, and digital disruption have destabilised family dynamics. The prevailing reliance on psychiatric medication and individual therapy often overlooks the broader relational and cultural contexts of psychological distress. Family therapy, although still underdeveloped locally, offers a holistic, relational approach that recognises intergenerational patterns, family structures, and emotional systems unique to Malaysian society. However, its advancement is hindered by barriers, including minimal integration into postgraduate curricula, limited opportunities for real-life observation and training, inadequate supervision, insufficient institutional support, and lack of advocacy to engage governmental bodies. Cultural stigma, rigid hierarchies, difficulty inviting family members, and fears of exposing family issues further deter engagement. To catalyse change, family therapy must be formally integrated into academic and clinical systems. This includes supervised practicum, culturally sensitive training, minimising language barriers across races, and accessible certification pathways. Equally important, family therapists must adopt activist-informed practices, becoming advocates who challenge dominant narratives, promote inclusivity, and engage in social reform. Activism in family therapy is a moral and professional responsibility. Strengthening this field requires collaborative efforts, including policy reform, inter-agency collaboration, and public education. By adopting a systemic approach, Malaysia can move toward a more resilient, relationally grounded, and culturally responsive future for mental health.

Keywords: Family Therapy Activism, Shift From Individual Therapy, Systemic Approach, Malaysia.

090-075

CONTRACEPTION PRACTICE AMONG HIGH-RISK POSTPARTUM WOMEN: DOES DESIRE TO AVOID PREGNANCY MATTERS?

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ABSTRACT

Background: High risk postpartum women, including those with chronic medical conditions, advanced maternal age, or prior adverse obstetric outcomes are at increased risk of maternal and fetal complications in subsequent pregnancies. Effective contraception during the postpartum period is essential to prevent unintended pregnancies. While intention to avoid pregnancy is a key determinants of contraceptive behaviours, its influence among these women is not well understood. This study aimed to assess the association between intention to avoid pregnancy and contraceptive practice among high risk postpartum women, also to identify factors influencing fertility intentions. Methods: A cross sectional study was conducted among 405 postpartum women attending maternal and child health clinics across Terengganu within 12 months after delivery. Postpartum women classified as high risk defined by the Society for Maternal-Fetal Medicine (SMFM) guidelines were recruited through simple random sampling. Data were collected via structured interviewer- administered questionnaires base on Desire to Avoid Pregnancy (DAP), whereby fertility intention was categorized as high, moderate, low and none. Multivariable logistic regression was performed to examine the independent effect of intention to avoid pregnancy on contraception use, adjusting for confounders such as parity, partner involvement and prior contraceptive use. Result: Most women did not use any method of contraception despite their strong desire to avoid pregnancy. This was reflected by average DAP score 2.95, highest intention to avoid pregnancy however did not use contraception. Meanwhile, women with lowest intention to avoid pregnancy (average DAP score 2.39) may opted low efficacy contraception such as condom. Barriers to contraceptive use included fear of side effects, lack of partner support, and cultural restrictions. Conversely, higher education prior contraceptive use and supportive partner involvement were strong predictors of contraceptive uptakes. Conclusion: Intention to avoid pregnancy is a significant predictor of contraceptive uptake among high-risk postpartum women, but gaps remain between them. Strengthening family planning interventions should include strategies to empower women in decision making, also integrate partner and

community engagement. Counselling and improved access for contraceptive methods are essential to support high-risk women in their reproductive intentions, thereby reducing adverse maternal and prenatal outcome.

Keywords: Intention, Contraception Practice, High-Risk Postpartum Women.

INTRODUCTION

Contraception stands as a linchpin in global reproductive health and rights, contributing significantly to the reduction of maternal mortality, prevention of unsafe abortions, and promotion of women's empowerment worldwide. As of 2022, approximately 1.1 billion women of reproductive age had a need for family planning with 874 million using contraceptive methods. However, nearly 164 million continued to experience unmet needs reflecting persistent inequities in access and utilization across regions (World Health Organization [WHO] 2022). Globally, contraceptive prevalence among married or partnered women is about 65%, though this varies widely exceeding 70% in high-income regions but falling below 35% in some low- and middle-income countries (United Nations 2022). Southeast Asia demonstrates comparatively higher contraceptive performance with use of contraception estimated at 65% and demand satisfaction around 90%, yet national disparities remain evident. Thailand reports approximately 75% contraceptive use, Indonesia over 57%, while Philippines lags behind at about 40% (Institute for Health Metrics and Evaluation [IHME] 2022). Malaysia presents a unique case whereby despite a well-established public health system and widespread awareness, contraceptive prevalence remains relatively low at 34–40%, and unmet need is substantial at nearly 20–27% (United Nations Population Fund [UNFPA] Malaysia 2023; (National Population and Family Development Board [LPPKN] 2022). Recent national data further highlight that one in three pregnancies in Malaysia is unplanned (LPPKN 2022), underscoring both service delivery gaps and challenges in aligning reproductive intentions with actual contraceptive behavior.

High-risk postpartum women are those with medical comorbidities or obstetric complications, face elevated risks of adverse outcomes if unintended or closely spaced pregnancies happen. Although contraception can reduce maternal morbidity and improve perinatal health, uptake among this group remains low due to barriers such as limited awareness, cultural influences, and gaps in service delivery. In Malaysia, despite the availability of maternal health services, contraceptive use among high-risk women continues to lag behind national targets. These demographic trends not only reveal the uneven landscape of contraceptive use but also emphasize the urgent need for context-specific research that explores how personal intentions, socio-cultural dynamics, and systemic factors shape family planning practices, thereby informing more responsive and equitable reproductive health strategies.

The objective of this study is to examine the use of contraception among high-risk postpartum women who express a desire to avoid pregnancy, with a focus on identifying patterns of contraceptive uptake, associated sociodemographic and clinical factors, and barriers to effective utilization. Through assessing the alignment between fertility intentions and actual contraceptive practices, the study aims to highlight gaps in postpartum family planning services that may leave this vulnerable group at risk of unintended or closely spaced pregnancies. Furthermore, the research seeks to evaluate the role of healthcare counselling, accessibility of contraceptive methods, and personal influences on decision-making, thereby providing insights into both systemic and individual determinants of contraceptive behavior.

This study is guided by the research question of whether high-risk postpartum women who express a desire to avoid pregnancy are effectively using contraception, and what factors influence the consistency and choice of their contraceptive methods. Specifically, it seeks to explore whether there is a significant alignment between stated fertility intentions and actual contraceptive practices, and to what extent sociodemographic, clinical, and health system factors shape this relationship. The underlying hypothesis is that despite a clear desire to avoid pregnancy, contraceptive uptake among high-risk postpartum women remains suboptimal, largely due to barriers such as limited access, inadequate counselling, and personal influences. It is further hypothesized that women who receive timely contraceptive counselling and have better access to a range of family planning methods are more likely to adopt effective contraception, thereby reducing their risk of unintended or closely spaced pregnancies.

LITERATURE REVIEW

The postpartum period is a critical stage in a woman's reproductive life, presenting unique challenges in family planning and contraceptive use. The intention of pregnancy, whether planned or unplanned, plays a crucial role in shaping contraceptive behaviors¹. Understanding the relationship between pregnancy intention and contraceptive use is essential, especially among high-risk women, to promote better reproductive health outcomes and reduce maternal and infant morbidity and mortality². The postpartum period is a critical window for addressing contraceptive needs. However, it is often neglected in reproductive health programs. Understanding the patterns of contraceptive use during the postpartum period among high-risk women can provide valuable insights into the challenges and opportunities for improving family planning services.

The concept of pregnancy intention

Pregnancy intention refers to whether a woman desires to become pregnant at a specific time or not. Intention can be classified as intended, unsure/ambivalent, or unintended^{3,4}. Several studies have shown that unintended pregnancies are associated with adverse maternal and child health outcomes^{5,6}. Identifying women's intentions regarding pregnancy is a crucial first step in understanding contraceptive use patterns and postpartum reproductive decisions⁷⁻

9. Numerous studies have investigated the association between pregnancy intention and contraceptive use, revealing complex interactions between these factors among postpartum women, particularly those identified as high-risk¹⁰⁻¹².

Contraception and high-risk women

While the definition of high-risk may vary across studies, it often encompasses women with medical complications, socio-economic disadvantages, or previous adverse pregnancy outcomes. High-risk women often face barriers to accessing and using contraceptives effectively. This may be due to limited knowledge, financial constraints, cultural factors, or

lack of support. In 2022, a study by Yeh PT et al. showed that high-risk women are more likely to experience contraceptive failure and unintended pregnancies compared to low-risk populations¹³. In contrast, some studies suggest that high-risk women may be more motivated to use contraceptives to prevent unintended pregnancies, given the potential risks associated with subsequent pregnancies^{14,15}. Exploring the factors that influence contraceptive use among high-risk women postpartum is vital for developing targeted interventions for safe motherhood.

Pregnancy Intentions and Use of Contraception

Predicting pregnancy intentions and contraception use among high-risk postpartum women involves considering factors like age, socioeconomic status, underlying medical illness, relevant obstetrics complications, knowledge of contraceptives and their adverse effects, partner attitudes, cultural beliefs, and more. These factors can help forecast a woman's likelihood of planning another pregnancy or choosing contraception. Through examining these predictors, researchers can create models to understand and anticipate high-risk postpartum women's decisions regarding pregnancy and contraception. This knowledge can guide healthcare interventions to enhance maternal and reproductive health outcomes in this specific group.

Predicting pregnancy intentions and contraception use among high-risk postpartum women involves considering a range of predictors. These factors include socioeconomic status, such as income, education level, and employment status, can predict the ability and willingness to access and afford contraceptives and family planning services 16-18. Partner's Attitudes and Involvement is another key consideration. The attitudes and support of a woman's partner or spouse can play a significant role in predicting her pregnancy intentions and contraception use¹⁹. Meanwhile, cultural and religious beliefs may impact a woman's views on family planning, pregnancy, and contraception²⁰. Likewise, previous contraceptive use may also shape a woman's satisfaction with previous methods, consequently influence her future contraceptive choices ²¹. Hence, knowledge of contraception which is a woman's level of knowledge about different contraceptive methods, their effectiveness, and their side effects is another key factor that can influence her contraceptive choices. Finally, health status especially the presence of pre-existing medical conditions, chronic illnesses, or high-risk factors can crucially impact a woman's pregnancy intentions and the contraceptive methods she chooses.

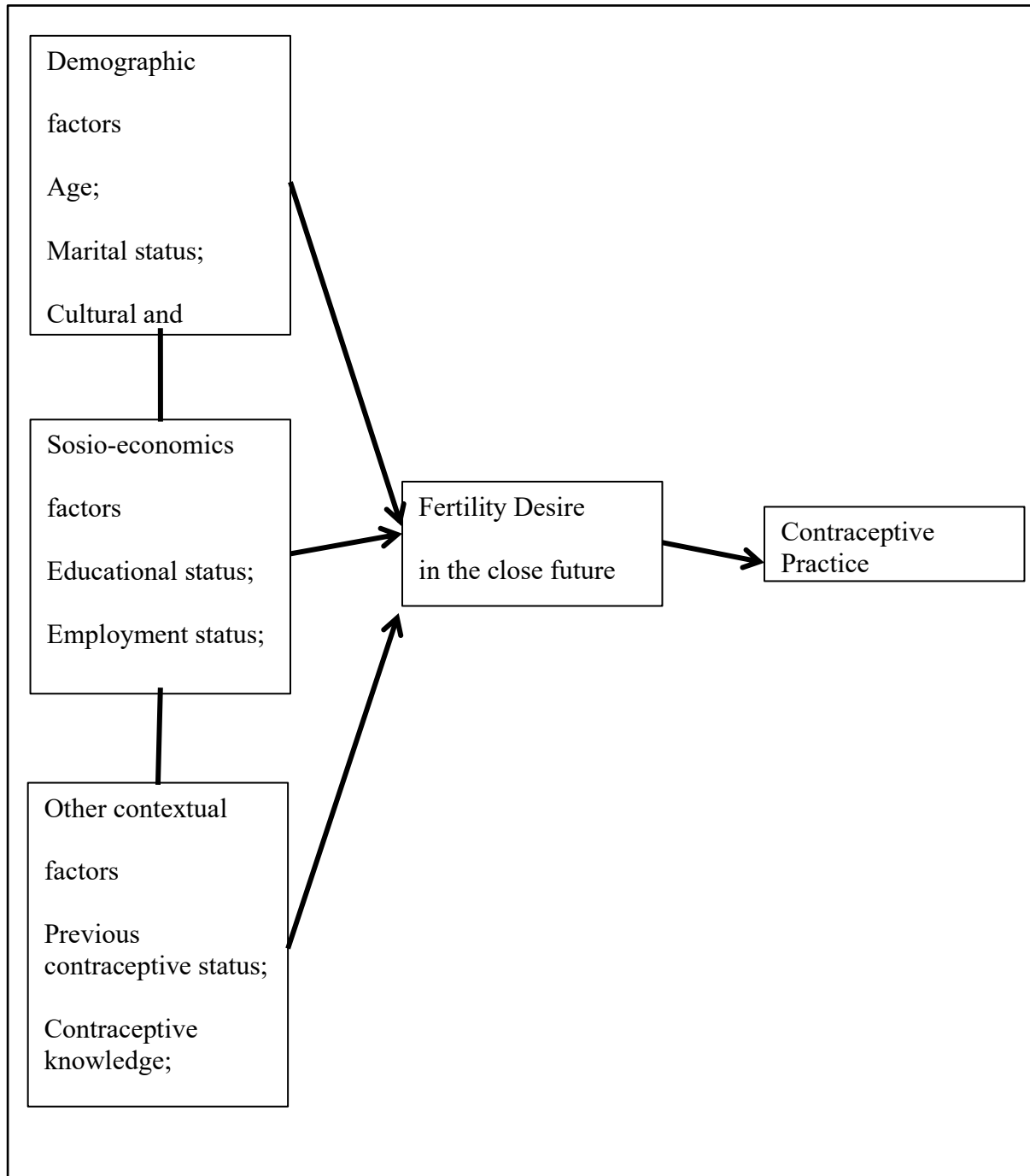


Figure 1: Conceptual framework for factors associated with fertility desire among high risk postpartum women.

METHODOLOGY

Study Design

This study was done in two phase with phase 1 was validation of Desire to Avoid Pregnancy (DAP) questionnaire, and phase 2 of study on survey of high risk postpartum women via on site-recruitment from participating health facilities. Both phase of study were done with cross-sectional

design. The validation process followed international guidelines for linguistic validation, content validation, face validation, construct validation, and reliability assessment (2, 6). The DAP Scale was initially developed and validated using Item Response Theory (IRT), which offers the advantage of item-level precision and latent trait estimation. However, in this study, the Classical Test Theory (CTT) approach to validation offers several key benefits. First, CTT is the most commonly applied framework in early-stage scale validation. Second, CTT is less demanding in terms of sample size, allowing for a more practical approach to recruiting the targeted population of women with high-risk pregnancies. Third, CTT provides essential information about item performance (e.g., item-total correlations, internal consistency), making it well-suited for identifying problematic items and establishing initial construct validity in a new cultural context. Lastly, the classical approach to psychometric evaluation is widely used and more readily understood by a broader range of researchers and practitioners, offering results that are relatively more accessible and intuitive.

Study Population and Sampling

This study included married postnatal women (aged 18–50) with high-risk pregnancies, as defined by the Society for Maternal-Fetal Medicine (SMFM) guidelines (7). A total of 405 participants were recruited to achieve a stable dimension reduction for factor analysis of the 14-item scale (8). These women represent a particularly vulnerable group for being at higher risk for maternal and neonatal complications in the event of a new pregnancy due to existing medical conditions. In this study, participants were recruited from 16 government Maternal and Child Health Clinics (MCHCs) across Terengganu, incorporating 2-3 MCHCs from each district to ensure representative sampling. Eligible women were purposively sampled during clinical follow-up visits occurring from one month to one year postpartum.

Inclusion and Exclusion Criteria

Eligible participants were married women aged ≥ 18 years, attending postnatal follow-ups from one month to one year postpartum with prior high-risk pregnancies due to maternal medical conditions (e.g., diabetes, hypertension, cardiovascular disease, chronic renal disease, autoimmune diseases, morbid obesity, HIV, sickle cell disease), obstetric complications (e.g., preterm birth, preeclampsia, fetal demise, intrauterine growth restriction), or a history of cesarean section, instrumental delivery, or multiple pregnancies. Women were excluded if they were currently pregnant, unwilling to participate, unable to provide informed consent, had mental health conditions affecting questionnaire comprehension, or were unable to communicate in Malay or English.

Participant Recruitment

Participants were recruited consecutively from postpartum follow-up clinics at the participating government health facilities. Research assistants introduced the study to eligible

women, obtained written informed consent, and facilitated completion of the self-administered questionnaire during face-to-face interactions.

Variables definitions

The independent variables includes i) Socio-demographic factors: Age, education level, marital status, income, and employment status; ii) Health-related factors: Pre-existing medical conditions,

history of complications during pregnancy or childbirth, and access to healthcare services; iii) Knowledge and awareness: on contraceptive methods, family planning education, and sources of information; iv) Social support: Presence of a partner or family support in decision-making regarding contraceptive use. Meanwhile dependent variables refers to pregnancy intention which was planned, mistimed, or unintended nature of a pregnancy at six months post-delivery. Also contraceptive practice refers to the utilization of contraceptive methods by high-risk women during postpartum period. It includes the types of contraceptives used, frequency of use, and adherence to recommended usage.

Statistical Analysis

All analyses were conducted using XLSTAT software (15) and RealStatistics (16) software package for EFA and reliability testing. Descriptive statistics were used to summarise participant characteristics.

Ethics Approval

The Ethics Committee of Universiti Sultan Zainal Abidin granted ethical approval for this study (Ref. UniSZA/UHREC/2024/611). This research was registered under the National Medical Research Register (NMRR) (Ref.NMRR ID-24-00570-HY4 (IIR) through the Clinical Research Centre (CRC). Then, a permission letter from the director of Terengganu Health State was obtained. All participants provided informed consent before they participated in the study.

RESULTS

Descriptive Statistics

A total of 405 high risk postpartum women were included in the analysis (see Table 1). The largest proportion of them were in the 30 to 34 years age group (34.32.0%), followed closely by those aged 35 to 39 years (28.15%). Majority of participants were Malay ethnicity (99.75%), meanwhile small proportion (0.25%) was others. In terms of education level, 53.32% of women had secondary education or below, while 46.68% had tertiary education. More than half of these women (58.77%) were not working. Income distribution showed that 77.05% of women were in the lowest 20% income group (B40), while 3.46% belonged to the top 20% (T20).

The contraceptive methods were categorized into four levels of effectiveness which are high, moderate, low and none. Implanon, IUCD and BTL belongs to high effective group. While OCP and Depoprovera were in moderate effective group. Low effectiveness group were condom and natural method. None was when these women did not practice any contraceptive methods. Majority of these women belong to none category (41.73%), while uptake of highly effective contraception remained low (11.85%) (see Table 2).

Table 1: Sociodemography profile of participants

Characteristic	n	%
<i>Age</i>		
15-19	2	0.49
20-24	27	6.67
25-29	78	19.26
30-34	139	34.32
35-39	114	28.15
40-44	40	9.88
45-49	5	1.23
<i>Ethnicity</i>		
Malay	404	99.75
Others	1	0.25
<i>Level of education</i>		
Primary	7	1.73
Secondary	209	51.59
Tertiary	189	46.68
<i>Occupation</i>		
Government sector	66	16.29
Private sector	58	14.32
Self employed	43	10.62
Not working	238	58.77
<i>Household income</i>		
<RM4070 (B40)	312	77.05
RM4070-8109 (M40)	79	19.49
>RM8110 (T20)	14	3.46
<i>Effective contraception</i>		
High	48	11.95
Moderate	143	35.31
Low	45	11.11
No	169	41.73

Table 2: Contraceptive practice and effectiveness among high risk postpartum women

Effective contraception	Number of participants	%
High	48	11.95
Moderate	143	35.31
Low	45	11.11
No	169	41.73

Analysis of Variance - One-way ANOVA (DAP score by contraception effectiveness)

We examined whether mean DAP scores differed across four contraception categories: no use, low-effectiveness, moderate-effectiveness, and high-effectiveness methods. As shown in **Table 3**, the one-way ANOVA was statistically significant ($F(3,401) = 7.118$, $p < 0.001$), indicating that DAP scores varied according to contraception category. Further, the standardised coefficients presented in **Table 4** show that, compared with women who reported no contraception use, all groups of contraceptive users had significantly lower DAP scores. The greatest reduction was observed among women using low-effectiveness methods, followed by those using high- and moderate-effectiveness methods. Collectively, these findings confirm a significant association between contraception category and DAP: contraceptive users consistently reported lower DAP scores than non-users in this sample. This overall pattern is also illustrated in **Figure 2**, which visually highlights the differences in mean of DAP scores across groups.

Table 3: Analysis of Variance (One-way ANOVA)

Source	DF	Sum of squares	Mean squares	F	Pr > F	<i>P</i> -values signification codes
Model	3.000	16.459	5.486	7.118	0.000	***
Error	401.000	309.106	0.771			
Corrected Total	404.000	325.565				

Signification codes: 0 < *** < 0.001 < ** < 0.01 < * < 0.05 < . < 0.1 < ° < 1

Table 4. Standardized coefficients (Score - DAP)

Source	Value	Standard error	t	Pr > t	Lower bound (95%)	Upper bound (95%)	p-values signification codes
Effective Contraception - High	-0.144	0.052	-2.784	0.006	-0.246	-0.042	**
Effective Contraception - Low	-0.195	0.052	-3.770	0.000	-0.296	-0.093	***
Effective Contraception - Moderate	-0.175	0.053	-3.293	0.001	-0.280	-0.071	**
Effective Contraception - No	0.000	0.000					

Signification codes: 0 < *** < 0.001 < ** < 0.01 < * < 0.05 < . < 0.1 < ° < 1

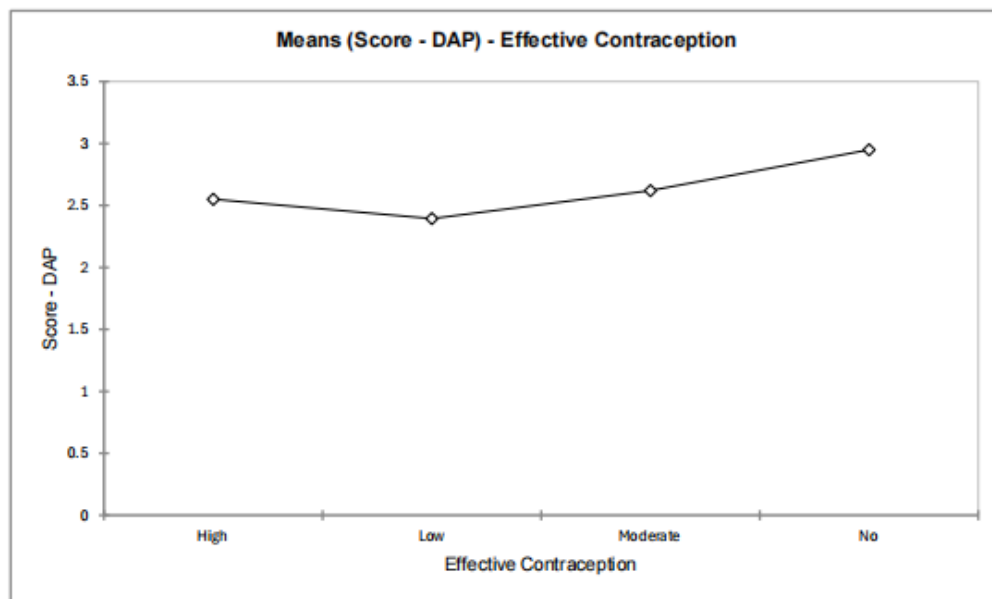


Figure 2: Association between DAP score and effective contraceptive practice among high risk postpartum women.

DISCUSSION

Contraception and the intention to avoid pregnancy

With regards to contraception among high-risk postpartum women, intention does matter. Our study, as shown in Table 3, demonstrates that intention is indeed, predictive of contraceptive use. The Desire to Avoid Pregnancy (DAP) scores significantly varied across contraceptive categories, confirming that intention is not only measurable but also meaningfully associated with contraceptive practice. This aligns with prior evidence from Hall et al.1, who reported that pregnancy intention strongly predicts contraceptive uptake in diverse populations. Hence, it is crucial to incorporate assessment of intention into follow-up care for high-risk postpartum women.

However, surprisingly, Table 4 shows that women who reported no contraception use had significantly higher DAP scores compared to users of any contraceptive method. This apparent

contradiction highlights the complexity of translating reproductive intentions into consistent contraceptive practice. One likely explanation is social desirability bias. Because high-risk postpartum women are strongly recommended towards healthy and effective family planning, women who do not use any contraception may report stronger intentions to avoid pregnancy to align with perceived expectations, compensating for their lack of contraceptive use. This phenomenon has been observed in prior behavioural studies, where self-reported attitudes often exceed actual behavioural compliance. A notable recent study by Grépin et al.²² exemplifies this pattern. Aiming to quantify the extent of social desirability bias in public health adherence, they conducted phone-based surveys across Kenya, Nigeria, and Bangladesh, comparing self-reported versus actual compliance with facemask mandates during the COVID-19 pandemic. Using a list experiment design—a method known for reducing socially desirable responses—they uncovered substantial overreporting of compliance, with gaps of up to 40 percentage points in Kenya between stated and actual behaviour. This robust cross-national study provides compelling evidence that individuals often model themselves towards the expected health behaviors in self-reports. Nonetheless, our study shows that this pattern of behaviour emerge as a crucial predictor of their subsequent adherence in good practice of family planning.

Interestingly, this assertion is further illustrated in Figure 3, which shows that mean DAP scores were lowest among women using low-effectiveness methods, followed by moderate- and high-effectiveness users. This gradient suggests that women who adopt contraception may align their reproductive intentions with the level of protection offered by the method. Similar findings were reported in a recent and insightful study by Nelson et al.²³, which introduced the concept of contraceptive congruence to evaluate how well contraceptive method effectiveness matches women's pregnancy attitudes. Using data from nearly 1,000 women not intending pregnancy in the next year, the authors found that those with stronger preferences to avoid pregnancy were significantly more likely to use highly effective methods like long acting reversible contraceptions (LARCs). Conversely, those with weaker or ambivalent intentions were more likely to use lower-effectiveness methods or none at all²³. Therefore, it is crucial to acknowledge that the desire to avoid pregnancy exists along a spectrum, and this spectrum appears directly associated with the effectiveness level of the method a woman is using.

Consequently, these results underscore the importance of establishing rich and comprehensive information related to pregnancy intention. In this study, DAP provided in- depth insights that a single-item measure could not fully capture. The advantage of DAP, as shown by Hall et al¹, is its validated multidimensional structure encompassing cognitive, emotional, and contextual factors influencing pregnancy preferences. While single-item questions remain practical in busy clinical environments, they risk oversimplifying a complex construct. Hence, while we acknowledge that routine antenatal follow-up often relies on single questions about future pregnancy, we recommend the use of validated and robust scales such as the DAP to fully leverage their predictive value for family planning outcomes.

Limitations and recommendations

Nonetheless, we acknowledge several limitations of this study. First, its cross-sectional design precludes causality; intention measured here should be interpreted as an associated factor, not a determinant of subsequent contraceptive use. Longitudinal studies are necessary for that purpose. Nevertheless, the present analysis offers crucial evidence of association, showing that intention is a meaningful indicator of contraceptive behaviour. Second, this design could not capture the dynamic nature of intention, which may change over time in response to life events, partner dynamics, or health status. However, a cross-sectional approach enabled recruitment of a large sample, providing robust statistical power. Thus, while we cannot map changes in intention across

time, our findings support the view that intention—whether measured at one month or six months postpartum—is consistently linked to contraceptive behaviour. Therefore, while this study provides strong evidence for the importance of assessing intention, its limitations also highlight directions for future research and practice.

As a result, we recommend two priority areas for future research. First, longitudinal studies are needed to examine how pregnancy intention evolves over time and how these shifts affect contraceptive uptake among high-risk postpartum women. Second, qualitative studies would provide deeper insights into the interplay between intention, knowledge, and the practical realities of family planning in this population. Such research could help explain the psychosocial and cultural drivers that mediate the link between stated intention and actual contraceptive use.

CONCLUSION

In summary, this study is the first in Malaysia to analyse a statewide dataset to determine the extent of values in routine screening for intention to avoid pregnancy among high-risk postpartum women, with a specific focus on the Desire to Avoid Pregnancy (DAP) scale. Our results show that intention is significantly associated with contraceptive behaviour, yet paradoxically, women with the highest DAP scores were often the one not practicing effective contraception. This highlights the gap between reproductive preferences and actual practice, likely influenced by psychosocial factors such as social desirability and systemic barriers to care. The observed gradient of DAP scores across contraception categories further emphasises that intention operates along a spectrum that corresponds with method effectiveness. These findings reinforce the value of using validated tools like DAP in clinical

care, beyond single-item measures, to capture more in-depth and richer understanding on reproductive preferences. Despite limitations of cross-sectional design, the study provides robust evidence for integrating intention screening into routine postpartum follow-up and paves the way for longitudinal and qualitative studies to deepen this understanding. The key message is clear; intention matters, and incorporating it systematically into family planning services can improve contraceptive counselling, align care with women's preferences, and ultimately enhance reproductive health outcomes for high-risk postpartum women.

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STRATEGI DAYA TINDAK PASANGAN SUBFERTILITI DALAM PENGUKUHAN PERKAHWINAN: PENYELIDIKAN HEURISTIK

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ABSTRAK

Masalah ketidaksuburan atau subfertiliti semakin kritikal sepanjang dekad ini dan menjadi isu yang sedang ditangani secara global. Pasangan subfertiliti berhadapan dengan pelbagai cabaran yang boleh menggoyah kerukunan rumahtangga. Penyelidikan ini bertujuan mengkaji strategi daya tindak yang dipraktikkan oleh mereka bagi mempertahankan perkahwinan yang terbina. Data diperolehi melalui kaedah inkuiri heuristik yang diperkenalkan oleh Clark Moustakas (1990) dengan menemubual 10 pasangan subfertiliti yang telah melalui usia berkahwin lebih satu dekad. Cabaran utama yang dihadapi oleh mereka termasuklah cabaran biologi, cabaran psikologi dan cabaran sosial. Lima strategi daya tindak utama yang dipraktikkan ialah (i) sokongan sosial, (ii) kawalan diri, (iii) penilaian semula positif, (iv) penerimaan tanggungjawab, dan (v) penyelesaian masalah terancang dalam menangani cabaran biopsikososial. Kajian ini menambah literatur baru dengan menyediakan dapatan berkenaan strategi daya tindak yang dipraktikkan oleh pasangan subfertiliti bagi mengukuhkan ikatan perkahwinan disebalik cabaran ketidaksuburan yang dihadapi. Dapatan kajian turut memberi implikasi kepada pihak yang berkepentingan dalam memperkasa serta memberikan perkhidmatan psikologi dan kaunseling kepada pasangan subfertiliti.

Kata Kunci: Pasangan Subfertiliti, Cabaran Biopsikososil, Strategi Daya Tindak, Perkhidmatan Psikologi Kaunseling.

PENGENALAN

Pasangan yang berkahwin lebih satu dekad, namun masih tidak mempunyai zuriat sendiri, mungkin mengalami cabaran tertentu sepanjang usia perkahwinan mereka. Masalah subfertiiliti dikesan dialami oleh 1 daripada 7 pasangan di seluruh dunia (Thurston et al., 2019). Situasi di Malaysia juga adalah hampir sama apabila 1 hingga 3 pasangan gagal mendapat zuriat selepas 1 tahun berkahwin (Naemah, S., 2023). Subfertiiliti biasanya ditakrifkan sebagai kesukaran untuk hamil selepas melakukan hubungan seksual yang kerap selama lebih daripada 12 bulan tanpa sebarang kaedah kontraseptif (Patel et al., 2021; Gnoth et al., 2005). Cabaran yang dialami oleh pasangan subfertiiliti membentuk kitaran timbal balas negatif dan positif silih berganti (WHO., 2021; Smith et al., 2020). Kestabilan perkahwinan pasangan subfertiiliti turut dipengaruhi oleh bagaimana mereka secara individu atau secara bersama memilih strategi daya tindak terhadap peristiwa mencabar yang sedang mereka tempuhi. Persamaan bagi semua pasangan subfertiiliti yang menyertai kajian ini adalah, mereka pernah dan sedang menjalani rawatan klinikal subfertiiliti. Cabaran menjalani rawatan dan lain-lain cabaran yang dihadapi sekiranya tidak ditangani dengan baik dan berkesan, boleh menyebabkan pembubaran perkahwinan. Menurut penyelidikan yang dijalankan oleh (Raley & Sweeney 2020; Amato 2010) isu ketidaksuburan, turut dikenalpasti menjadi menyumbang kepada perceraian.

Strategi daya tindak yang dipilih oleh setiap individu berperanan besar dalam menjamin kesejahteraan rumahtangga yang terbina (Dhillon, Cumming, & Cumming, 2000). Dalam menghadapi cabaran yang pelbagai, ada pasangan yang kekal sejahtera dan dapat mempertahankan rumahtangga yang dibina. Walaubagaimanapun, terdapat juga penyelidikan terdahulu melaporkan, terdapat pasangan yang mengalami konflik yang berpanjangan sehingga memilih membubarkan perkahwinan (Lazano et al., 2021; Dhillon et al., 2000).

Tinjauan penyelidikan terhadap kajian terdahulu, mendapati banyak kajian seperti kajian oleh Febriyani & Abdullah, 2024; Muardini et al., 2019; Hasanah, 2018 menfokuskan kepada cabaran yang membawa kepada perceraian pasangan, khususnya bagi pasangan muda yang kurang daripada 5 tahun usia perkahwinan. Walaubagaimanapun, masih terdapat kekurangan penyelidikan bagi melihat cabaran perkahwinan pasangan yang telah lama berkahwin dan tidak mempunyai zuriat. Begitu juga daripada aspek strategi daya tindak yang dipilih oleh pasangan sebegini dalam mempertahankan perkahwinan mereka. Kajian ini dilaksanakan kepada 10 pasangan yang telah berkahwin lebih satu dekad bagi menangani kekurangan maklumat mengenai cabaran yang mereka hadapi dan strategi daya tindak yang mereka praktikkan dalam memastikan tidak berlakunya pembubaran perkahwinan. Penemuan ini diharapkan dapat membantu pasangan subfertiiliti yang sentiasa bertambah saban tahun bagi menghadapi cabaran isu subfertiiliti disamping berusaha mengukuhkan rumahtangga yang terbina.

KAJIAN LITERATUR

1) CABARAN PERKAHWINAN DAN STRATEGI DAYA TINDAK

Sebahagian besar penyelidikan sedia ada seperti kajian oleh Chakraborty, G., 2022; Nakamine, S., 2021 memberikan tumpuan kepada cabaran perkahwinan. Bagi kajian yang melibatkan pasangan tidak subur, kajian tertumpu kepada cabaran yang dihadapi oleh isteri dalam melalui rawatan kesuburan seperti IUI dan IVF. Kurang penyelidikan yang memberi penumpuan kepada cabaran yang dihadapi oleh suami dan cabaran yang dihadapi oleh kedua-dua pasangan (Sharma et al.,

2022; Amoo et al., 2017). Begitu juga kajian berkaitan psikologi, banyak kajian yang membincangkan aspek tekanan atau kesan emosi yang dialami oleh wanita yang tidak subur. Kurang kajian terhadap lelaki yang turut mengalami isu ketidaksuburan (Eisenberg et al., 2023; Turner, K. A., et al., 2020). Terdapat kajian yang dilaksanakan oleh Badruzaman, D., (2021) dan Mengistu et al. (2021) yang mengkaji bagaimana tekanan yang dialami mengancam rumahtangga. Namun tertumpu kepada pasangan muda yang dikesan mengalami isu kesihatan seperti kanser pangkal rahim dan kanser payudara. Walaubagaimanapun sebahagian besar penyelidikan berkaitan, dijalankan terhadap pasangan yang berkahwin kurang lima tahun (Karney & Bradbury, 2020). Kajian yang dijalankan oleh Anisah et al., 2023 dan Mallory, A. B., 2022 melibatkan pasangan yang berusia, tetapi menfokuskan kepada kepuasan perkahwinan. Masih kurang penyelidikan yang melihat dari aspek isu kesihatan reproduktif dan masalah subfertiliti (Turner et al., 2020;). Melalui penelitian literatur oleh pengkaji, masih tidak ditemui penyelidikan spesifik mengenai kepelbagaian cabaran yang dihadapi oleh pasangan subfertiliti dan strategi daya tindak yang dipilih dalam mengekalkan perkahwinan.

Cabaran kehidupan yang dihadapi sepanjang perkahwinan memberi kesan yang pelbagai kepada pasangan. Antara penyelidikan lepas yang ada berkaitan dengan perkahwinan, meninjau cabaran pasangan diberhentikan kerja, isu kesihatan, masalah pengurusan anak-anak, kecurangan, isu kesihatan mental, kecacatan kekal serta kematian ahli keluarga. Namun penyelidikan sedia ada tersebut belum memberikan gambaran keseluruhan kepada umum mengenai cabaran kehidupan yang memberikan kesan kepada pengekalan perkahwinan. Kajian yang meninjau penceraian juga tidak melihat aspek strategi daya tindak. Oleh itu, kajian ini yang menggunakan pendekatan inkuiri heuristik akan menelusuri pelbagai cabaran yang mungkin dihadapi dan aspek strategi daya tindak pasangan subfertiliti yang menyumbang kepada pengekalan perkahwinan.

Penyelidikan sedia ada berkaitan strategi daya tindak banyak membincangkan mengenai teori dyadic serta teori banyak menfokuskan kaedah daya tindak yang diambil oleh pasangan yang menghadapi isu kesihatan mental, isu anak yang tidak sihat, pasangan yang mengalami kecacatan kekal, suami menghilangkan diri, suami dipenjarakan serta pasangan yang terlibat dengan penyalahgunaan dadah. Masih tidak terdapat perbincangan khusus mengenai strategi daya tindak yang dipraktikkan oleh pasangan subfertiliti yang sudah lama berkahwin. Penelitian pengkaji dalam penyelidikan ini adalah bagi mengisi jurang penyelidikan tersebut. Kajian ini juga dijangka dapat menambah kepada literatur mengenai kepelbagaian cabaran yang dihadapi oleh pasangan subfertiliti yang telah lama berkahwin serta amalan strategi daya tindak yang dipraktikkan oleh mereka bagi mengekalkan perkahwinan yang terbina walaupun tidak dikurniakan zuriat sendiri. Penemuan cara pasangan menangani isu subfertiliti dapat dijadikan panduan kepada pasangan muda yang turut menghadapi isu seperti ini kelak.

2) CABARAN PENGUKUHAN PERKAHWINAN DAN KETERIKATAN PASANGAN

Dalam perkahwinan, keterikatan pasangan merujuk kepada elemen yang menguatkan ikatan emosi antara suami dan isteri (Heim & Heim, 2023). Elemen tersebut merangkumi perasaan selamat dalam kehidupan berumahtangga, cara pasangan berkomunikasi dan melibatkan hubungan intim (Gupta & Srivastava, 2020). Keterikatan pasangan melalui ikatan emosi yang mendalam adalah penting untuk membina rumahtangga yang lebih sihat, stabil dan selamat. Individu yang dapat merasai perasaan selamat akan mendapat kesejahteraan psikologi apabila berada bersama

pasangan. Keterikatan perasaan ini akan menyumbang kepada dinamik pengukuhan perkahwinan merangkumi selesa, gembira dengan hubungan intim, saling bergantung, konflik yang terurus sehingga membentuk kestabilan hubungan suami isteri (Kazan et al., 2016).

Keterikatan perhubungan suami isteri akan mempengaruhi corak komunikasi, tahap kepercayaan dan keupayaan menangani cabaran yang timbul. Mereka dapat menangani isu dan cepat bergerak kearah hubungan positif yang mereka inginkan. Dinamika perhubungan yang positif akan mempengaruhi hubungan jangka panjang dan pengukuhan institusi rumahtangga yang ketara (Ioannidis et al., 2020). Dalam teori keterikatan yang dipolopori oleh John Bowlby & Mary Ashod, 3 gaya keterikatan yang dibincangkan adalah cara tindakan selamat, cara tindakan cemas dan cara tindakan mengelak. Pada dasarnya, memahami keterikatan dalam perhubungan jangka panjang melibatkan mengiktiraf pengaruh pola keterikatan awal pada dinamik perhubungan dewasa dan berusaha secara aktif ke arah membina hubungan yang selamat melalui kesedaran diri (Heim & Heim, 2023). Keterikatan emosi antara pasangan dapat digambarkan melalui dinamik hubungan pasangan. Elemen ikatan emosi turut diterokai dalam penyelidikan ini yang mungkin menjadi penguat dan pendorong kepada pengekaln perkahwinan pasangan subfertility.

METODOLOGI KAJIAN

Kajian ini menggunakan metodologi kualitatif berdasarkan pendekatan inkuiri heuristik yang telah diperkenalkan oleh Clark Moustakas, 1990. Penyelidikan heuristik telah diklasifikasikan oleh banyak penyelidik kualitatif sebagai pendekatan fenomenologi (Mihalache 2019; Weishut, 2024). Moustakas membangunkan versi psikologi humanistik fenomenologi. Kerja beliau dianggap asas untuk penyelidikan kualitatif, fenomenologi terutamanya dalam psikologi dan sains kesihatan (Mihalache 2019). Pemilihan pendekatan ini sejajar dengan pandangan pengkaji-pengkaji lepas yang menyatakan inkuiri heuristik adalah pendekatan yang sesuai dan banyak digunakan oleh penyelidik dalam bidang psikologi, kaunseling, terapi seni dan psikoterapi (Broud & Anderson 1998, West 2001, Etherington 2004a). Melaksanakan kajian menggunakan metodologi inkuiri heuristik melibatkan proses yang ketat (Hathcoat & Meixner, 2015; Moustakas, 1990). Pendekatan ini menekankan penglibatan aktif pengkaji dalam meneroka aspek fenomena kajian melalui pengalaman pengkaji (Weishut, 2024; Moustakas, 1990). Kaedah inkuiri heuristik Moustakas menyediakan rangka penyelidikan yang berstruktur untuk penyelidik menyelami kedalaman pengalaman manusia dan mengekstrak pandangan yang bermakna (Mihalache, 2019). Rangka penyelidikan inkuiri heuristik melibatkan; a) penglibatan awal, b) penelitian secara intensif, c) inkubasi, d) kejelasan kefahaman, e) penjelasan lanjut dan f) sintesis kreatif (Brisola & Cury, 2016; Moustakas, 1990). Dalam pelaksanaan kajian ini, penyelidik telah mengikuti setiap fasa ini dengan berturutan dan teliti bagi menangani gangguan terhadap data yang diperolehi melalui temubual berstruktur yang dilaksanakan bersama peserta kajian.

PROSEDUR DAN PEMILIHAN PESERTA KAJIAN

Penyelidikan ini telah mendapat kelulusan etika daripada Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia (USM/JEPeM/PP/24020212). Kajian ini melibatkan pasangan subfertility yang masih mendapatkan rawatan di Klinik Subfertility Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN) di Johor, Kuala Lumpur dan Pulau Pinang. Penyerahan

peserta kajian adalah secara sukarela dan peserta kajian bebas untuk menamatkan penyertaan mereka dalam kajian pada bila-bila masa. Sesi temubual berstruktur telah dilakukan secara fizikal.

Penyelidik menggunakan kaedah persempelan bertujuan dalam pemilihan peserta kajian. Kriteria pemilihan peserta kajian adalah merangkumi pasangan yang telah berkahwin lebih 10 tahun dan tidak pernah mempunyai zuriat, masih menjalani rawatan kesuburan, mewakili 3 bangsa utama Malaysia, mampu bertutur dan memahami Bahasa Malaysia serta bersedia untuk bekerjasama dalam kajian yang dijalankan secara berpasangan. Kriteria pengecualian yang terlibat adalah pasangan yang belum pernah menamatkan satu kitaran rawatan subfertiliti serta pasangan yang pernah mempunyai anak sebelum ini atau melalui perkahwinan yang terdahulu.

Kajian ini telah melibatkan 10 pasangan subfertiliti. Jadual 1 menunjukkan ringkasan peserta kajian. Ketepuan data mula kelihatan dalam 2 temubual terakhir. Dapatan Proses pengutipan data ditamatkan setelah data yang dianalisis mencapai ketepuan data. Tindakan ini adalah selaras dengan pandangan (Othman Lebar, 2018; Aldiabat, K. M., & Le Navenec, C. L., 2018; Merriam & Tisdell, 2016; Creswell, 2013) proses kutipan data boleh ditamatkan dalam penyelidikan kualitatif apabila pengkaji menemui ketepuan data dalam kajian yang dijalankan. Pendekatan kualitatif membolehkan pemahaman yang lebih mendalam tentang perjalanan pasangan dan individu serta tentang peristiwa yang mendahului dan mengikuti ancaman tersebut (Greenhalgh et al., 2020; Othman Lebar, 2018; Creswell, 2013). Penyelidikan yang menggunakan inkuiri heuristik ini dapat mendedahkan pelbagai aspek cabaran kerukunan rumahtangga pasangan subfertiliti serta menemui mekanisme daya tindak yang telah dipilih dalam mempertahankan perkahwinan tanpa zuriat.

Jadual 1: Ringkasan Peserta Kajian

Pasangan(kod)	Bangsa (Jantina)	Umur	Usia Perkahwinan	Pekerjaan	Tempat tinggal
Pasangan 1 (PPP/M3/1P/ 1L)	Melayu (P)	35	10 tahun	Pekerja	Bandar
	Melayu (L)	36		kejuruteraan Anggota keselamatan	
Pasangan 2 (PKL/I2/1P/ 1L)	India (P)	36	12 tahun	Penjawat awam	Luar bandar
	India (L)	38		Pekerja swasta	
Pasangan 3 (PJB/C1/1P/ 1L)	Cina (P)	34	10 tahun	Ahli perniagaan	Bandar
	Cina (L)	35		Ahli perniagaan	
Pasangan 4 (PJB/M2/1P/ 1L)	Melayu (P)	32	13 tahun	Penjawat awam	Luar bandar
	Melayu (L)	35		Penjawat awam	
Pasangan 5 (PKL/C4/1P/ 1L)	Cina (P)	36	11 tahun	Bekerja sendiri	Luar bandar

	Cina (L)	40		Bekerja sendiri	
Pasangan 6 (PPP/I4/1P/ 1L)	India (P)	33	10 tahun	Penjawat awam	Bandar
	India (L)	35		Pekerja Industri	
Pasangan 7 (PKL/M4/1P/ 1L)	Melayu (P)	34	14 tahun	Pekerja Swasta	Bandar
	Melayu (L)	36		Pekerja swasta	
Pasangan 8 (PJB/I1/1P/ 1L)	India (P)	33	11 tahun	Teknikal	Bandar
	India (L)	34		Teknikal	
Pasangan 9 (PPP/C3/1P/ 1L)	Cina (P)	32	12 tahun	Pekerja swasta	Bandar
	Cina (L)	35		Bekerja sendiri	
Pasangan 10 (PPP/M3/1P/IL)	Melayu (P)	33	10 tahun	Penjawat awam	Luar bandar
	Melayu (L)	42		Pekerja teknikal	

ANALISIS DATA

Dalam proses pungutan dan analisis data kaedah heuristik Moustakas, penyelidik bermula dengan melibatkan diri dengan peserta untuk mengumpulkan penerangan yang kaya dan terperinci tentang pengalaman hidup mereka (Legare, 2024). Langkah ini melibatkan temu bual atau pemerhatian yang mendalam untuk menangkap intipati fenomena daripada perspektif peserta. Dengan melibatkan diri dalam naratif peserta, penyelidik boleh mendedahkan nuansa, emosi dan makna dalam pengalaman mereka, menyumbang kepada pemahaman yang menyeluruh tentang fenomena yang dikaji (Legare, 2024). Selepas pengumpulan data, penyelidik meneruskan untuk menganalisis data yang dikumpul menggunakan pendekatan fenomenologi transendental, yang melibatkan pembacaan melalui data, mengurangkannya kepada unit yang bermakna, melibatkan diri dalam pengelompokan tematik, membandingkan data, dan menulis huraian (Pisarik et al., 2017; Merriam & Tisdell, 2016). Proses berulang ini berterusan sehingga intipati pengalaman hidup diterangkan. Proses analisis data yang sistematik dalam heuristik fenomenologi Moustakas membolehkan penyelidik mendedahkan tema teras dan elemen penting yang mentakrifkan pengalaman peserta (Pisarik et al., 2017; Creswell, 2013).

Selepas transkripsi temubual verbatim telah diselesaikan, penyelidik beralih kepada pengurangan data, di mana penerangan peserta disuling kepada intipati mereka (Pisarik et al., 2017). Langkah ini melibatkan mensintesis makna tekstur dan struktur untuk mewakili kumpulan secara keseluruhan. Dengan menyepadukan naratif individu ke dalam huraian komposit, penyelidik boleh menangkap tema dan variasi menyeluruh dalam cara individu melihat dan mentafsir fenomena yang dikaji (Pisarik et al., 2017). Dua senarai hasil akhir telah disusun: (1) cabaran perkahwinan pasangan subfertiliti, dan (2) strategi daya tindak yang dipraktikkan oleh pasangan subfertiliti bagi mengekalkan perkahwinan. Analisis data akhir mendapati 3 tema cabaran perkahwinan pasangan

subfertiliti dan 5 tema strategi daya tindak yang menjadi amalan pasangan subfertiliti dalam mengekalkan perkahwinan mereka.

HASIL KAJIAN DAN PERBINCANGAN

Daripada 10 pasangan yang ditemu bual, 75% mendedahkan cabaran perkahwinan sepanjang menghadapi isu subfertiliti yang berpotensi menyumbang kepada pembubaran perkahwinan mereka. Cabaran perkahwinan pasangan subfertiliti yang menjalani rawatan merangkumi cabaran biologi, cabaran psikologi dan cabaran sosial. Dalam mendepani cabaran biopsikososial ini, didapati 5 tema strategi daya tindak yang dipraktikkan oleh peserta kajian sama ada secara individu atau secara berpasangan bagi mempertahankan perkahwinan yang dibina.

STRATEGI DAYA TINDAK PASANGAN SUBFERTILITI

Jadual 2 menunjukkan strategi daya tindak yang dipraktikkan oleh peserta kajian yang menjalani rawatan subfertiliti dalam mendepani cabaran pengukuhan perkahwinan. Hanya lima tema yang paling kerap dan tinggi dikongsikan oleh peserta kajian diperincikan dengan lebih lanjut bersama petikan dapatan temubual secara verbatim. Secara keseluruhannya 60% strategi daya tindak yang dilakukan oleh peserta kajian melibatkan elemen keterikatan pasangan. Pengiraan peratusan adalah daripada jumlah keseluruhan perkongsian peserta kajian.

Jadual 2: Tema Strategi daya tindak peserta kajian

Strategi Daya Tindak	Peratus (%)
Sokongan sosial	25%
Kawalan sendiri	23%
Penilaian semula positif	20%
Penerimaan tanggungjawab	18%
Penyelesaian masalah terancang	14%

1) STRATEGI DAYA TINDAK SOKONGAN SOSIAL

Pasangan serta ahli keluarga terdekat berperanan penting dalam memberikan dorongan dan motivasi kepada setiap individu yang diuji dengan perkara yang tidak diingini (Heim & Heim, 2023). Kebanyakan peserta kajian menjelaskan bahawa sokongan yang diberikan oleh pasangan terutamanya telah menjadikan mereka kuat menghadapi cabaran ketidaksuburan. Selain pasangan, ahli keluarga terdekat seperti ibu bapa dan adik beradik adalah individu yang banyak memberikan galakan dan sokongan kepada mereka dalam menjalani rawatan subfertiliti serta perlbagai rawatan alterlatif lain. Antara sokongan yang diperolehi daripada pasangan dan ahli keluarga terdekat adalah merangkumi sokongan mental, sokongan emosi, sokongan kewangan, sokongan spiritual dan sokongan mendapatkan rangkaian maklumat.

Sebagai contoh, beberapa peserta kajian menjelaskan rasa bertuah kerana pasangannya sangat memberikan sokongan sepanjang menjalani rawatan klinikal. Sokongan pasangan telah

menjadikan dia lebih bermotivasi dalam berusaha untuk mendapatkan zuriat sendiri. Terdapat juga peserta kajian menyatakan merasa beruntung kerana selain ibunya, ibu mertua dan adik beradik juga banyak menyokong mereka dalam merialisasikan impian menimang cahaya mata:

“Suami saya sentiasa ikut setiap kali ada temujanji di klinik, dia ambil cuti dan akan offer memandu kereta dia untuk bawa saya jumpa doktor. Pernah juga rasa macam tak nak teruskan rawatan, tapi semua tu hanya hadir masa yang sekejap sahaja, mungkin ketika emosi tak stabil” - (Pasangan 1/PPP/M3/1P)

“Kakak dan adik ipar saya antara individu yang selalu bagi informasi kepada saya mengenai rawatan yang boleh dilakukan. Ada yang mereka kongsi adalah atas maklumat daripada kenalan dan bacaan mereka sendiri.” - (Pasangan 3/PJB/C1/1P)

“Saya sering dapat maklumat daripada kakak suami, katanya bapa mertua saya kerap minta orang kampung buat solat hajat di masjid, minta doakan kami segera dapat zuriat.” - (Pasangan 7/PKL/M4/1P)

Dapatan kajian menunjukkan bahawa sokongan kuat daripada pasangan, ibu bapa dan ahli keluarga terdekat berperanan penting sebagai penyumbang besar dalam menjadikan pasangan subfertiliti khususnya wanita dalam menghadapi cabaran berkaitan ketidaksuburan. Sokongan sosial yang diterima daripada persekitaran sosial mampu menguatkan emosi pasangan tidak subur dalam menangani cabaran (Martins et al., 2014).

Peserta yang melaporkan tahap sokongan sosial yang lebih tinggi cenderung menunjukkan tahap tekanan yang sederhana, stigma dan gejala kemurungan yang lebih rendah serta kualiti hidup yang lebih baik semasa menjalani rawatan subfertiliti (Iordachescu et al., 2021). Peranan sokongan sosial adalah merupakan mekanisme pelarasan yang penting dalam pengukuhan hubungan suami isteri dan rangkaian sosial pasangan subfertiliti.

2) STRATEGI DAYA TINDAK KAWALAN KENDIRI

Pada kebiasaannya, strategi daya tindak kawalan sendiri berupaya membantu seseorang individu tidak bertindak emosional apabila berada dalam fasa mencabar dan tertekan (Park, 2013). Dalam kajian ini, terdapat peserta kajian yang beberapa kali telah melalui rawatan klinikal dan masih gagal mendapatkan zuriat. Namun melalui temubual, dapat digambarkan mereka mempunyai kawalan sendiri yang baik serta turut berkeupayaan mengawal emosi sendiri serta pasangan. Selain itu, didapati bahawa peserta kajian menunjukkan tingkah laku yang baik terhadap pasangan dan mengambil tanggungjawab secara bersama dalam mendepani isu subfertiliti. Terdapat juga peserta kajian menyatakan sering terganggu dengan perasaan rendah diri apabila berkumpul bersama ahli keluarga atau program kekeluargaan anjuran majikan. Walau bagaimanapun mereka dapat mengawal perasaan tersebut dan bersama-sama melalui situasi berkenaan dengan tenang seperti tiada apa-apa perasan negatif yang mengganggu fikiran:

“Situasi yang sangat mencabar bagi saya sepanjang melalui proses rawatan, apabila rawatan tak berjaya. Memang sangat sedih,...sedih tu ambil masa sehari-hari juga untuk stabil.lepas tu ok lah. Bukan fikir sangat mengenai rugi duit, buang duit. Paling kurang kami dah cuba”. - (Pasangan 6/PPP/I4/1P/ 1L)

“Kami tak ambil sikap salahkan satu sama lain...Mungkin belum rezeki kami untuk dapat baby”.
- (Pasangan 8/PJB/I1/1P/ 1L)

“Ada pernah satu hari tu program family day jabatan..semua bawa anak, ada game untuk anak-anak staf..mula lah perasaan rendah diri datang..tapi saya lawan..Suami pun sama -sama..kami berjaya habiskan program jabatan ni dengan happy-happy saja”. - (Pasangan 4/PJB/M2/1P/ 1L)

Kajian semasa menunjukkan bahawa keupayaan kawalan sendiri melalui pengurusan emosi, menenangkan fikiran serta mengendalikan rutin harian dengan lebih tersusun dapat mempengaruhi tindak balas psikologi yang lebih baik terhadap isu subfertiliti (Yazdani et al., 2016). Pasangan yang mempraktikkan strategi regulasi emosi seperti latihan pernafasan, aktiviti berdamping dengan alam, dilaporkan kebolehan menahan tekanan harian yang lebih baik dan memiliki tahap kesejahteraan psikologi yang sejahtera (Humeniuk et al., 2023).

3) STRATEGI DAYA TINDAK PENILAIAN SEMULA POSITIF

Strategi penilaian semula positif adalah reaksi kepada situasi yang berlaku dari sudut yang positif (Folkman, 2010; Folkman & Maskowitz, 2004). Individu bertindak menstruktur semula makna situasi sukar yang tidak diingini ke dalam kerangka yang lebih adaptif. Strategi ini berkait dengan tahap tekanan individu yang lebih rendah dan adaptasi psikososial yang lebih baik, terutamanya apabila digabungkan dengan sokongan orang sekeliling.

Beberapa peserta kajian yang telah ditemubual mengakui mereka mempraktikkan strategi sentiasa mendahului pemikiran dan tindakan yang lebih positif dan tidak menyakiti pasangan.

“...saya fikir tak ada gunanya nak salahkan diri atau pasangan. Lebih baik cuba rawatan. Jika ada rezeki kami, dapat zuriat”. - (Pasangan 5/PKL/C4/1P/ 1L)

“Saya sentias kawal fikiran dan emosi supaya tak sakiti isteri. Dalam kes kami, isteri saya ada masalah PCOS, saya mesti bantu dia semangat jalani rawatan, mudah-mudahan nanti boleh buat.. teruskan rawatan untuk mengandung”. - Pasangan 8/PJB/I1/1L)

“Kami redo dengan ujian kehidupan ini...tapi kami tidak berserah pada masa sahaja untuk tentukan nasib kami... Selagi ada jalan, kami ikhtiar disamping doa pada Allah rezekikan kami zuriat yang soleh dan solehah”. - Pasangan 7/PKL/M4/1P/ 1L)

Dapatan ini selaras dengan pandangan Casu et al. (2019) yang mendapati strategi penilaian semula positif juga dikaitkan dengan tindakan membantu pasangan mengekalkan kesejahteraan jangka panjang.

4) STRATEGI DAYA TINDAK PENERIMAAN TANGGUNGJAWAB

Perkahwinan adalah manifestasi tanggungjawab bersama antara pasangan. Masalah ketidaksuburan dihadapi oleh empat daripada 10 pasangan yang berkahwin (Mohammadi et al., 2018). Individu yang mempraktikkan strategi daya tindak penerimaan tanggungjawab akan melihat diri sendiri sebagai elemen untuk menyelesaikan sesuatu masalah tanpa mengharap bantuan daripada orang lain (Foster et al., 2010).

Melalui temubual bersama peserta kajian, pasangan yang ditemubual mempraktikkan strategi daya tindak penerimaan tanggungjawab secara kolektif bersama pasangan:

“Bagi saya, ujian kesihatan ..tak subur ini bila belum ada rezeki dapat anak secara alami ni, saya dan pasangan perlu ambil tanggungjawab untuk tunja doktor dan jalani rawatan Pasangan saya pun setuju untuk ambil tanggungjawab ini. Tak berlaku pula, hanya satu pihak yang risau dan buat planning rawatan.”- (Pasangan 9/PPP/C3/1P/ 1L)

“Satu masa tu, saya masih ingat, kami sama-sama cari maklumat untuk carikan tempat untuk rawatan...taka da lah mana-mana pihak yang lepas tangan..Ada beberapa tempat rawatan yang kami jumpa, dan buat apoinmen, kami pergi ke 3 klinik dan last kami pilih di LPPKN ni.”- (Pasangan 7/PKL/M4/1P/ 1L)

Kajian menunjukkan bahawa penerimaan adaptif bukan perasaan menyerah tetapi membantu mengurangkan konflik antara pasangan dan menangani emosi yang boleh merosakkan hubungan seperti menyalahkan diri yang berlarutan. Dalam konteks kajian ini, didapati bahawa walaupun pasangan subfertility menerima sokongan sosial daripada ahli keluarga, namun pasangan yang ditemu bual bersedia mengambil tanggungjawab dan mereka tidak menunjukkan sikap kebergantungan terhadap orang lain.

5) STRATEGI PENYELESAIAN MASALAH TERANCANG

Mempraktikkan penyelesaian masalah terancang berada dalam kategori strategi daya tindak berfokus masalah (Lazarus dan Folkman, 1984; Lazarus & Folkman 1987). Strategi ini melibatkan perancangan langkah rawatan yang akan dipertimbangkan, mendapatkan maklumat perubatan, dan menstrukturkan aktiviti harian untuk mengurangkan ketidakpastian. Strategi ini juga melibatkan tindakan alternatif yang boleh diambil oleh pasangan bagi mengurangkan kesan psikologi seperti tekanan, perasaan kecewa terutama ketika pasangan menghadapi keputusan rawatan atau ketidakpastian kesan menjalani rawatan. Strategi daya tindak penyelesaian masalah terancang adalah ruang positif yang membolehkan seseorang individu untuk mencari jalan penyelesaian bagi sesuatu isu yang dihadapi dengan mengembangkan pelbagai idea alternatif (Wood et al., 2007).

Melalui sesi temubual, beberapa peserta kajian telah mengakui mereka secara individu atau secara berpasangan mempunyai perancangan dalam menghadapi isu ketidaksuburan. Sebagai contoh dengan mendapatkan beberapa bentuk rawatan sama ada rawatan klinikal mahupun rawatan alternatif.

“Kami waktu mula-mula dulu pernah dah cuba dapatkan rawatan alternatif,, kami jumpa pakar diet dan pemakanan, ikut jadual bersenam, pengambilan makanan..badan dapat berat idealah, lepas tu kami ikut juga petua orang lama, pergi mandi di Tasik Dayang Bunting. Kami lalui rawatan klinikal pertama lebih kepada saringan kesuburan 4 tahun lepas..dan ini adalah percubaan IUI yang kedua kami lalui”. - (Pasangan 10/PPP/M3/1P/IL)

“Selain rawatan di klinik, kami banyak terlibat dengan ikhtiar keagamaan, Agama kami minta kami sucikan diri, buang dosa sebelum usaha untuk rawatan dapatkan anak. Sangat kerap kami buat sepanjang tempoh usaha untuk dapatkan anak ini”. - (Pasangan 2/PKL/I2/1P/ 1L)

Terdapat peserta kajian yang menyatakan pasangannya menunjukkan kesungguhan dalam menjalani rawatan yang telah dijadualkan oleh pusat subfertility. “ Isteri saya, jenis kerja

outstation, dia telah aturkan jadual bulanannya sejak dari awal lagi... seminggu sebelum rawatan dan seminggu selepas rawatan dia akan tolak tugas yang memerlukan dia travel. Tak pernah lagi kami missed appointment dengan doktor. Memang nampak dia committed, pernah satu tarikh tu, klinik call ubah date ikut date doktor, dia buat keputusan tolak job yang dia memang suka dan ditempatkan yang dia suka. Dia lebih utamakan rawatan ini". -(Pasangan 6/PPP/I4/1L)

Dapatan kajian juga menunjukkan bahawa individu yang mempraktikkan strategi daya tindak penyelesaian masalah secara terancang melihat isu ketidaksuburan yang dihadapi dari sudut positif serta mempamerkan sikap tidak berputus-asa dalam usaha mereka (Chan et al., 2019). Keputusan ini adalah selaras dengan pandangan Rasoulzadeh Bidgoli & Latifnejad Roudsari (2018) dalam kajian mereka mengenai sikap positif terhadap isu ketidaksuburan dapat mengelakkan konflik yang berpanjangan antara pasangan.

Kajian mencadangkan bahawa strategi penyelesaian masalah secara terancang memberi manfaat paling besar apabila masalah itu boleh dikawal seperti memilih jenis rawatan, membuat penjadualan tugas hakiki dan waktu rawatan. Manakala bagi isu yang berada diluar kawalan diri seperti stigma sosial dan ketidakpastian faktor biologikal lebih sesuai menggunakan strategi lain seperti strategi penilaian semula positif dan strategi sokongan sosial.

RUMUSAN

Dapatan ini menggambarkan strategi daya tindak pasangan subfertiliti dalam pengukuhan perkahwinan mereka. Pasangan subfertiliti yang mampu mempertahankan perkahwinan mereka walaupun diuji dengan tidak mempunyai zuriat, 60% daripada mereka mengamalkan mekanisme daya tindak secara penyesuaian bersama berbanding mengamalkan mekanisme penyesuaian individu. Pasangan subfertiliti didapati saling bergantung antara satu sama lain dalam menghadapi cabaran kehidupan dan saling memperolehi rasa selamat hidup bersama. Penemuan ini membuka ruang yang lebih besar untuk pengkaji-pengkaji baru meneroka respon individu kepada masalah yang dihadapi oleh mereka serta bagaimana individu bertindak balas terhadap sesuatu masalah serta kepelbagaian cabaran yang wujud dalam kehidupan mereka.

PENYELIDIKAN LANJUTAN

Penyelidikan lanjut diperlukan untuk menangani jurang pengetahuan, terutamanya dalam memahami pengalaman lelaki dan membangunkan strategi mengatasi berasaskan pasangan yang komprehensif. Kajian masa depan juga boleh menumpu kepada intervensi psikologi kaunseling kepada pasangan yang menjamani rawatan subfertiliti serta kesan jangka panjang intervensi ini terhadap pengukuhan perkahwinan.

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PREDICTING CONTRACEPTIVE USE AMONG HIGH-RISK POSTPARTUM WOMEN IN MALAYSIA: A STATE-WIDE STUDY USING MACHINE LEARNING PREDICTIVE MODELLING

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ABSTRACT

Background: Unintended pregnancies place high-risk postpartum women at greater risk of adverse outcomes, underscoring the importance of effective family planning. Yet, little is known about how clinical risks and personal circumstances interact to shape contraceptive use in Malaysia. This study provides state-wide evidence by combining descriptive epidemiology with predictive modelling.

Methods: A total of 405 postpartum women participated from 11 government health clinics (Klinik Kesihatan) across 8 districts in Terengganu, representing a comprehensive state-wide investigation. Data was collected through an assisted self-administered questionnaire, with trained healthcare staff supporting participants to ensure accuracy and clarity. Predictors of contraceptive use were examined using Extreme Gradient Boosting (XGBoost), an ensemble machine learning method known for its high prediction accuracy. Model performance was evaluated using accuracy, misclassification rate, and the area under the ROC curve (AUC).

Results: The mean age of participants was 32.7 years (SD = 5.6; 95% CI: 32.2–33.2). Overall, 58.6% (95% CI: 53.7–63.4) reported using contraception at the time of the study. Among maternal medical factors, the most frequent risks were diabetes mellitus (15.3%), obesity (12.3%), and hypertension (9.4%). For obstetric history, the main risks were previous caesarean section (33.1%), followed by preterm birth (8.1%) and stillbirth (4.2%). The predictive model (XGBoost) showed excellent performance (training AUC = 0.999; validation AUC = 0.73; misclassification rate = 2.5%). The most important predictors of contraceptive use were clinic location (reflecting healthcare access), maternal age, future pregnancy intention, pregnancy risk status, and household income. In this model, a factor's "importance" means how much it improves prediction accuracy. Older women, at higher pregnancy risk, and without immediate pregnancy intentions, were more likely to use contraception.

Conclusion: This robust state-wide study demonstrates how both medical risks and contextual factors shape contraceptive use among postpartum women in Malaysia. While chronic conditions and caesarean histories are prevalent, reproductive behaviours are also shaped by access to care,

age, and family planning intentions. Applying predictive modelling provides a practical tool to identify women most in need of tailored counselling and support, strengthening family planning services and reducing unintended pregnancies in Malaysia.

Keywords: Postpartum Contraception, High-Risk Pregnancy, Machine Learning, Family Planning, Malaysia.

INTRODUCTION

Contraception among high-risk postpartum women is a crucial public health issue. High-risk postpartum women are individuals who have experienced a pregnancy complicated by medical, obstetric, or fetal conditions that pose increased risk to maternal or neonatal health in future pregnancies. These conditions include, but are not limited to, hypertension, diabetes, preeclampsia, preterm labour, cesarean delivery, and multiple gestations (Miller et al., 2022). Consequently, postpartum contraception is a critical intervention for maternal morbidity reduction (Vricella et al., 2019).

Postpartum contraception is especially critical due to the high prevalence of unintended pregnancies. Globally, nearly 50% of pregnancies are unintended, and up to 21% occur within 24 months of a previous birth, contributing to poor maternal and infant outcomes (Mutea et al., 2022). Within the Malaysian context, a recent study based on the 2022 national health survey estimated that 26.7% of married, child-bearing age women did not have an appropriate family planning method, with 20.7% seeking to limit births and 6.0% aiming to space them (Awaluddin et al., 2025). This trend is particularly concerning among high-risk mothers, due to their higher risk of complications and mortality associated with subsequent pregnancy. As Malaysia undergoes a demographic transition, the scale of these challenges necessitates more evidence to inform better-informed decisions and policymaking.

To achieve this goal, we surveyed high-risk postpartum women throughout Terengganu, a population with distinct reproductive health challenges and unmet contraceptive needs. Recognising the limitations of traditional statistical approaches, we applied machine learning techniques that can accommodate high-dimensional, complex datasets to ensure robust analysis and high-accuracy prediction. The first objective of our study was feature selection, a data science technique, to identify which predictors—among numerous sociodemographic, clinical, and behavioural factors—are most strongly associated with contraceptive use. The second objective was to develop and validate a prediction model based on these selected predictors, enabling both individualised risk stratification and population-level insights. The overarching goal is to choose and rank factors that are most influential in understanding the use of contraception among this group. We believe this evidence can provide crucial guidance for more effective clinical practice and evidence-based policymaking.

METHODOLOGY

Study Design and Setting

We conducted a cross-sectional survey of high-risk postpartum women across 15 government health clinics (Klinik Kesihatan - KK) in eight districts of Terengganu, Malaysia. The study was conducted between January and September 2024 as part of a state-wide investigation into

postpartum contraceptive use. These clinics were purposively selected to capture a broad representation of urban and rural settings under the Terengganu State Health Department.

Study Participants

Eligible participants were married postpartum women aged 18 years and above, who were classified as high-risk according to the Society of Maternal-Fetal Medicine criteria, such as chronic medical illness, obstetric complications, previous adverse pregnancy outcomes, and more (Wielgoś & Kosiński, 2021). Women were recruited during their scheduled 1- or 6-month postpartum visits to any of these KKs. We excluded women who were pregnant at the time of recruitment, who were unable to communicate in Malay or English, and who had known mental health disorders.

Data Collection

Data were collected through an assisted self-administered questionnaire. Trained healthcare staff introduced the study, obtained written informed consent, and provided clarification where required to minimise missing data and enhance response validity. The questionnaire included sociodemographic characteristics, reproductive and obstetric history, pregnancy intentions, contraceptive practices, health status, and perceived barriers to contraceptive use.

Sample Size

A total of 405 participants were recruited from 11-> 16 participating health clinics. This sample size allows robust machine learning analysis while serving as a balanced approach between high prediction model and feasibility constraints.

Machine Learning Analysis

We applied Extreme Gradient Boosting (XGBoost), an ensemble machine learning algorithm well-suited for handling high-dimensional structured data and non-linear relationships. Following best practices of data science methods, the dataset was randomly divided into training (70%) and validation (30%) subsets (Vrigazova, 2021). Predictors were pre-processed using one-hot encoding for categorical variables. To account for potential class disproportion in contraceptive use, weight corrections (through class weighting) were applied to balance the dataset before the random split. The weighted and balanced dataset will allow unbiased model training that does not favour any class of outcome due to prior probability.

Feature selection was performed within the XGBoost model to identify the most influential predictors of contraceptive use. Predictor importance was quantified by each variable's contribution to improving model accuracy. The second stage involved developing and validating a prediction model based on these selected predictors. Model performance was evaluated using accuracy, misclassification rate, and the area under the receiver operating characteristic (ROC) curve (AUC).

Ethical Considerations

This study received ethical approval from the Universiti Sultan Zainal Abidin Human Research Ethics Committee (Ref. UniSZA/UHREC/2024/611). It was also registered with the National Medical Research Register (NMRR) under the Ministry of Health Malaysia (Ref. NMRR ID-24-00570-HY4 (IIR)), facilitated through the Clinical Research Centre (CRC). Additionally, permission was obtained from the Director of the Terengganu State Health Department before commencement. All eligible participants received detailed study information and provided written informed consent before participating. Confidentiality was strictly maintained, and data were anonymised before analysis.

RESULTS:

Study Population

A total of 405 high-risk postpartum women were included in the study. The mean age of participants was 32.7 years (SD = 5.84, [95% 32.1-33.2]), with ages ranging from 18 to 47 years. The median age was 33 years, and the interquartile range spanned from 29 to 37 years, indicating that the majority of participants were in their early to mid-thirties.

Table 1: Descriptive Statistics of participants' profiles

Variable\Statistic	Categories	Frequency
Pregnancy_Risk	Advanced Maternal Age	8
	Major Maternal Comorbidities	170
	Multiple Pregnancies	47
	History of O&G complications	179
Household_Income	B40: < 4070	312
	M40: 4070-8109	79
	T20: > 8110	14
Last_Preganancy_was_Planned	No	201
	Yes	204
Last_Delivery	Normal	211
	Surgery	188
	Vacuum/Forcep	6
KK	KK Batu 2 1/2	24
	KK Batu Rakit	64
	KK Chendering	49
	KK Cheneh	19
	KK Jerteh	20
	KK Kuala Berang	21
	KK Kuala Dungun	18
	KK Manir	49
	KK Marang	32
	KK Pasir Akar	5
	KK Pengkalan Berangan	11

	KK Rahmat	25
	KK Seberang Takir	38
	KK Sungai Tong	29
	Others	1
Next_Pregnancy	No	170
	Not Sure	52
	Yes. 1-2 year	25
	Yes. Anytime	6
	Yes. After 2 years	152

Training and Validation Dataset – participants' profiles

Table 2 below illustrates the comparison of participants in the training dataset and the validation dataset.

Table 2. Training dataset and validation dataset comparison

Characteristic	Training Dataset (n=285)	Validation Dataset (n=120)
N (participants)	285	120
Age, mean (SD), range	32.7 (5.6), 18-47	32.6 (6.4), 18-46
Current contraceptive use, n (%)	167 (58.6)	69 (57.5)
Non-users, n (%)	118 (41.4)	51 (42.5)
Pregnancy risk: MMC, n (%)	116 (40.7)	54 (45.0)
Pregnancy risk: OGH, n (%)	127 (44.6)	53 (44.2)
Pregnancy risk: Multiple, n (%)	36 (12.6)	11 (9.2)
Pregnancy risk: MD, n (%)	6 (2.1)	2 (1.7)
Household income: B40 (<RM4070), n (%)	217 (76.1)	95 (79.2)
Household income: M40 (RM4070-8109), n (%)	57 (20.0)	22 (18.3)
Household income: T20 (>RM8110), n (%)	11 (3.9)	3 (2.5)
Last pregnancy unplanned, n (%)	140 (49.1)	61 (50.8)
Last delivery: Normal, n (%)	149 (52.3)	62 (51.7)
Last delivery: Caesarean, n (%)	132 (46.3)	56 (46.7)
Last delivery: Assisted, n (%)	4 (1.4)	2 (1.7)
Next pregnancy: No, n (%)	113 (39.6)	57 (47.5)
Next pregnancy: >2 years, n (%)	110 (38.6)	42 (35.0)
Next pregnancy: Unsure, n (%)	39 (13.7)	13 (10.8)
Next pregnancy: 1-2 years, n (%)	18 (6.3)	7 (5.8)
Next pregnancy: Anytime, n (%)	5 (1.8)	1 (0.8)

Results (Training Dataset)

i) Feature Selection and Variable Importance

The XGBoost model identified clinic location, maternal age, intention for next pregnancy, pregnancy risk status, and household income as the most influential predictors of contraceptive

use. Delivery method and pregnancy planning status contributed modestly but still played a relevant role in improving model performance.

Variable importance in XGBoost is summarised using three measures. *Gain* reflects how much each variable improves the model's accuracy when it is used for splitting; a higher gain means the predictor contributes more to reducing classification error. *Cover* indicates the relative number of samples affected by a variable when it is used in the decision trees; this shows how broadly a predictor influences the dataset. *Frequency* represents how often a variable is selected across all trees in the model, highlighting predictors that are consistently useful in classification.

Table 3. Variable importance ranking based on Gain, Cover, and Frequency

Variable	Gain	Cover	Frequency
KK	0.358	0.322	0.290
Age	0.244	0.300	0.317
Next_Pregnancy	0.108	0.112	0.123
Pregnancy_Risk	0.105	0.077	0.108
Household_Income	0.069	0.061	0.039
Last_Delivery	0.064	0.063	0.059
Last_Preganancy_Planned	0.051	0.064	0.063

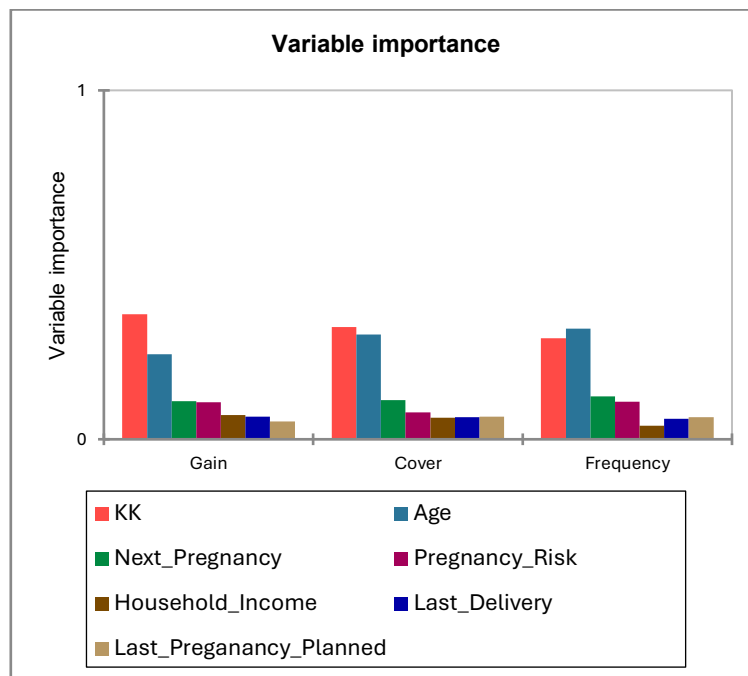


Figure 1. Bar chart of feature importance

ii) Iterative Model Training

The model's performance improved steadily with each round of training. At the beginning (iteration 1), the error rate was 0.27, indicating that approximately one in four predictions were incorrect. As the model "learned" from the data through successive iterations, the error rate dropped to 0.025 by iteration 100. Beyond this point, the error stabilised, showing that the model had reached an optimal balance between learning patterns in the data and avoiding overfitting.

This means the algorithm became progressively better at distinguishing between women who use contraception and those who do not, until further training no longer added meaningful improvement.

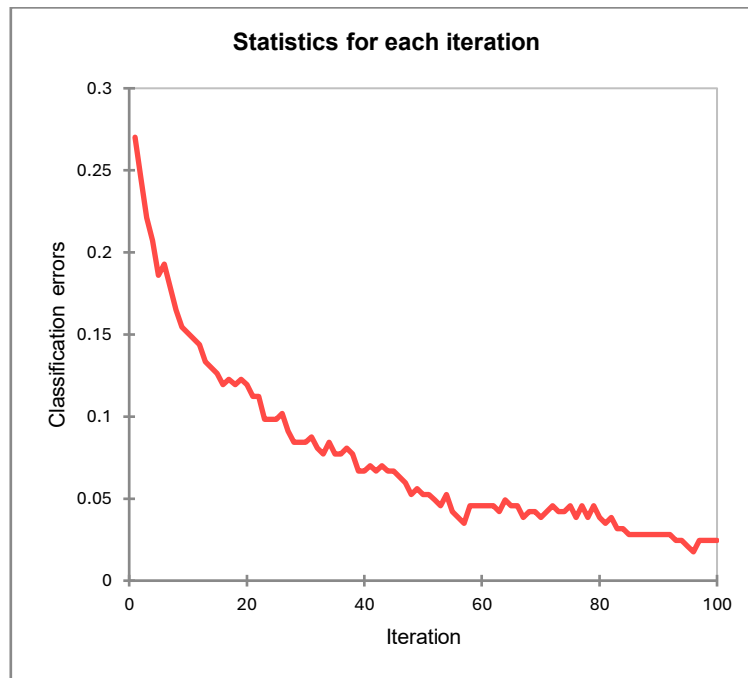


Figure 2. Line plot of classification error across boosting rounds

iii) Model Performance - Confusion Matrix and Performance Matrices

The model demonstrated excellent ability to classify contraceptive users and non-users within the training dataset. The confusion matrix revealed a very low proportion of misclassified cases, reflected in the overall misclassification rate of 2.5%.

Table 4. Confusion matrix and model parameters of model training

		Currently Use Contraception (Observed)		
		Yes	No	
Currently Use Contraception (Predicted)	Yes	113	5	118
	No	2	165	167
Total		115	170	285
Performance parameters		Sensitivity (Recall):		98.3%
		Specificity:		97.1%
		Accuracy:		97.5%
		F1 Score:		97.0%
		Misclassification Rate:		2.5%

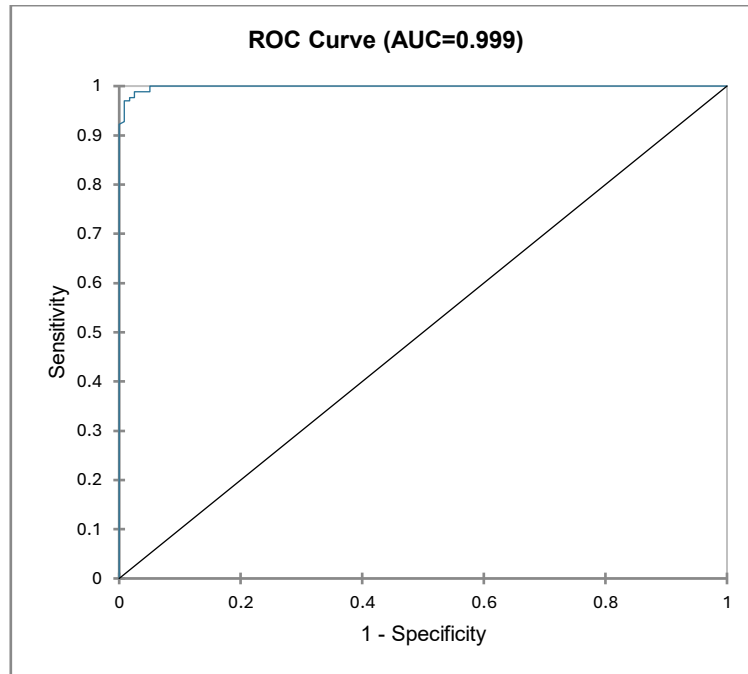


Figure 3: Area Under the Curve (AUC) chart of the model training

Results (Validation Dataset)

i) Model Performance – Confusion Matrix and Performance Matrices

Applied to the independent validation cohort ($n = 120$), the model demonstrated moderate and acceptable discrimination, with a balanced classification of users and non-users relative to the training cohort. Table 5 and Figure 4 illustrate validation of the model performance.

Table 5. Confusion matrix of the validation dataset

		Currently Use Contraception (Observed)		
		Yes	No	
Currently Use Contraception (Predicted)	Yes	29	22	51
	No	23	46	69
Total		52	68	120
Performance parameters		Sensitivity (Recall):		55.8%
		Specificity:		67.6%
		Accuracy:		62.5%
		F1 Score:		56.3%
		Misclassification Rate:		37.5%

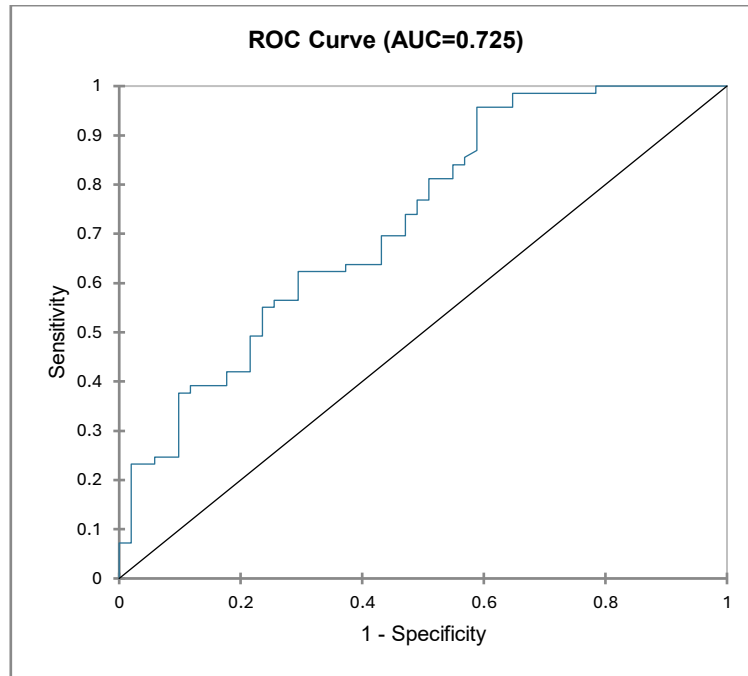


Figure 4. Area Under the Curve (AUC) chart of the model validation

DISCUSSION

Novel contribution

To the best of our knowledge, this is the first study in Malaysia to apply machine learning methods to a state-wide dataset to identify the most predictive factors for contraceptive use among high-risk postpartum women. The adoption of machine learning enabled us to uncover complex relationships between sociodemographic, clinical, and behavioural variables that are often difficult to model using classical regression approaches. The model performed exceptionally well in the training dataset ($AUC = 0.999$), confirming its ability to capture patterns underlying contraceptive behaviour. Notably, despite a decline in performance in the validation dataset ($AUC = 0.725$), the model retained moderate predictive ability in data it had not previously encountered. This result demonstrates the model's ability to generalise beyond the training sample, thereby strengthening the robustness of its findings. Thus, our validated model offers a novel contribution to the understanding of contraceptive use in high-risk postpartum populations, with direct implications for both research and practice in maternal health.

Among the predictors, clinic location emerged as the most important predictor of contraceptive use (Table 3). These results underscore the crucial role of healthcare accessibility and the quality of services provided at the community level. In the Malaysian context, government health clinics (Klinik Kesihatan - KK) provide frontline maternal and child health services, including counselling and contraceptive provision. Our findings suggest that localised quality of service, which may range from staff engagement and counselling quality to clinic resources and cultural familiarity, may critically shape women's contraceptive decisions.

This observation is supported by a qualitative study by Suchman et al. (2023), which examined how providers interpret the concept of "quality" in contraceptive counselling across Ethiopia,

Mexico, and India. They found that while administrators were focused on achieving national targets for contraceptive uptake, providers valued responding to women's individual preferences—highlighting tensions between instrumentalist and person-centred models of care. Meanwhile, a complementary perspective is offered by Lince-Deroche et al. (2020) in South Africa, where providers similarly emphasised that client needs must guide contraceptive method selection. However, systemic issues such as staff shortages and limited method availability often constrained their ability to offer high-quality counselling. Hence, both studies support the importance of investing in clinic-level service quality—not just access—to ensure equitable and effective contraceptive care.

To achieve this goal, Figure 1 also shows age as another significant determinant, with older women more likely to adopt contraception. This reflects both biological and social dimensions; advancing maternal age is associated with heightened risks of adverse pregnancy outcomes, and women may also have achieved their desired family size. Similar findings have been reported in other settings, where increasing age is positively correlated with contraceptive uptake among postpartum women (Kawuma et al., 2023). Furthermore, an interesting study by Tavrow et al. (2012) analysed post-abortion care in Kenya, found a marked disparity in contraceptive uptake between adolescents and older women—even when services were youth-friendly and contraception was free. Only 6% of adolescents initiated a method post-abortion compared to 96% of older women, underscoring persistent psychosocial barriers among younger women. This finding underscores the importance of tailoring counselling to younger women, who may underestimate pregnancy risks and have lower contraceptive use despite high vulnerability to unintended pregnancies.

Consequently, women's intention regarding their next pregnancy proves to be a crucial consideration. Although measured with a single-item question, this variable powerfully captured reproductive preferences and proved highly predictive of contraceptive use. This finding resonates with the growing literature on the Desire to Avoid Pregnancy (DAP) scale (Hall et al., 2022), which has demonstrated that even concise measures of pregnancy intention can strongly predict contraceptive behaviour. More recently, Muñoz et al. (2024) advanced the field by developing a concise, four-item version (DAP-4) validated across nine U.S. states with over 30,000 participants. The short scale retained high predictive validity ($r = 0.96$ with the full DAP), reinforcing the value of brief tools in busy clinical environments. While the DAP and its variants are more comprehensive, our results indicate that simple intention-based questions can still provide valuable insights in routine clinical practice. This has practical importance for busy clinic settings, where brief yet effective screening tools are needed to identify women who require targeted counselling. As a result, we strongly recommend that follow-up care among high-risk postpartum women should include, at a minimum, a routine single-item questioning regarding intention for the subsequent pregnancy.

Beyond these individual-level factors, pregnancy risk status and household income also emerged as relevant predictors. Women with higher clinical risks (e.g., diabetes, hypertension, or caesarean histories) were more likely to use contraception, reflecting both provider emphasis on risk reduction and women's heightened awareness of complications. At the same time, socioeconomic disparities were evident; women from lower-income households (B40) were less likely to use contraception consistently, highlighting ongoing inequalities in reproductive health. This dual influence of clinical and contextual factors reinforces the need for holistic approaches that integrate medical counselling with strategies to reduce structural barriers to access.

Limitations and recommendations

This study adopted a robust and comprehensive approach to generate evidence for holistic interventions, although several limitations should be acknowledged. First, the sample comprised predominantly Malay participants, which may limit the generalisability of the findings to women of other ethnic groups. Nevertheless, this distribution reflects the demographic profile of Terengganu, where the population is largely Malay. Second, data collection was conducted within public healthcare settings. As expected, most participants belonged to lower-income households, raising the question of whether women seeking care in private facilities—who may differ in socioeconomic status and other characteristics—would demonstrate similar patterns of family planning and contraceptive use. Even so, given that the Malay population constitutes the majority in Malaysia and that postpartum care is primarily sought through public healthcare services, this study arguably captures the most representative segment of the population. Therefore, despite these limitations, we are confident that the findings remain highly relevant and applicable to mainstream postpartum care practices in Malaysia and beyond.

As a result, we recommend several directions for future research and practice. First, future studies could expand the scope of this work by collecting nationwide data. Broader sampling would provide richer insights and greater diversity, particularly by including participants from other ethnic groups. Such an approach may help determine whether distinct strategies are required to address the contraceptive needs of minority populations in Malaysia, especially among high-risk postpartum women. It would also be valuable to explore whether patterns of care and influencing factors differ within private healthcare settings, where patient profiles may vary substantially from those in public services.

Second, we suggest conducting a feasibility study to examine whether screening for pregnancy intention is routinely integrated into follow-up care for high-risk postpartum women. Such research could identify key facilitators and barriers to this practice, shedding light on potential disparities in care provision at the community level, as highlighted in the present study.

Finally, in-depth qualitative research may provide more meaningful understanding of how healthcare providers and women navigate available resources related to contraception knowledge and compliance. This evidence would help to identify practical strategies for leveraging facilitators and addressing barriers to improve the standard and routine practice of contraception care for high-risk postpartum women.

Conclusion

In summary, this study shows that contraceptive behaviour among high-risk postpartum women is shaped not only by medical risks but also by healthcare service environments, reproductive intentions, age, and socioeconomic status. Based on a comprehensive state-wide data analysis using a highly accurate ensemble method of gradient boosting machine learning, we demonstrate predictive patterns that classical methods often overlook, offering a novel contribution to maternal health research in Malaysia.

The findings highlight three priorities for practice and policy. First, the clinic location highlights the need to enhance community-level service quality and accessibility. Second, even a simple, single-item question on pregnancy intention proved highly predictive, suggesting a practical and low-cost tool for routine postpartum follow-up care. Third, persistent socioeconomic disparities call for targeted strategies to ensure equitable access and counselling, particularly for younger and lower-income women.

Collectively, these insights provide a roadmap for evidence-driven, patient-centred, and system-focused interventions. Strengthening service quality, integrating reproductive intention screening, and addressing socioeconomic barriers can help ensure that high-risk postpartum women receive timely, equitable, and effective contraceptive care.

Ethics Approval

This study received UniSZA Human Research Ethics Committee (UHREC) approval (Ref. UniSZA/UHREC/2024/611). This research was also registered under the National Medical Research Register (NMRR) (Ref.NMRR ID-24-00570-HY4 (IIR)) through the Clinical Research Centre (CRC). This study also secured written permission from the Director of Terengganu Health State. All participants provided informed consent before participating in the study.

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RANKING FAMILY RESILIENCE CONSTRUCTS OF MALAYSIAN GENERATION Y FAMILIES USING A CORRELATIONAL WEIGHTING APPROACH

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ABSTRACT

Family resilience is the ability of the family to adapt, recover, and remain functional in the face of stress and adversity. In this study, Malaysian Generation Y families, defined as married individuals with at least one child and born between 1980 to 2000, are increasingly faced with emotional, economic, and relational challenges due to rapid social change. Using a correlational weighting approach, this study aimed to rank ten validated family resilience constructs of Malaysian Gen Y families. Two hundred seventy-two participants responded to the Malaysian Gen Y Family Resiliency Scale (myFRSGY). The data was analysed using SPSS to calculate the correlation values for the ranking process. The results showed that the overall family resilience index was 3.94 out of 5, indicating a moderate to high level of resilience. The most influential constructs were roles and responsibilities in the family structure, psychological and physical support, and communication and conflict resolution. In contrast, spiritual and moral values and social support networks contributed the least to the overall index. These findings provide a context-specific understanding of family resilience and offer evidence-based guidance for developing targeted family policies and support programmes in Malaysia.

Keywords: Correlational Weighting, Family Resilience, Family Resilience Index, Generation Y Malaysia, Good Health & Well-Being.

I. INTRODUCTION

Why do some families recover from hardship while others fall apart? This long-standing question continues to intrigue scholars interested in family resilience, a concept that describes a family's capacity to endure, adapt, and recover from significant stress while maintaining psychological and functional balance. In contemporary psychosocial research, family resilience has become a central construct because it demonstrates the interconnected effects of cognitive, emotional, behavioural, and relational processes that help families sustain well-being during adversity (Arvin et al., 2024). While individual strengths are important, resilience also depends on how families coordinate, manage emotions, and reinforce shared identity and mutual care (Luo et al., 2019). Evidence further suggests that families facing crises such as divorce or dissolution often regain stability through collaborative coping and constructive communication patterns that address each member's needs (Last et al., 2023).

In Malaysia, the experiences of Generation Y, defined as individuals born between 1980 and 2000, provide valuable insight into how family resilience develops. In 2025, these individuals are between 25 and 45 years old, and Gen Y families in this context typically comprise husbands and wives with one or more children. This cohort faces a series of life transitions, including establishing careers, forming households, and caring for ageing parents. Each transition is influenced by cultural expectations, financial pressures, and rapid technological change. Consequently, delayed economic independence, prolonged co-residence with parents, and redefined family responsibilities have changed how resilience is expressed and maintained in Malaysian households (Navabinejad & Saadati, 2023). According to Lobo et al. (2025), adopting a flexible understanding of generational identity is essential for interpreting the realities of Malaysian Generation Y families, who navigate modernisation while remaining anchored to long-held values of filial piety and social cohesion.

Equally important is the tension between Malaysia's collectivist traditions and the country's modern social transformations, which together shape the resilience process. Collectivism emphasises interdependence, shared duty, and togetherness; yet, in many households, these ideals now intersect with the fast pace of urban living, dual-career structures, and limited family time (Mao & Agyapong, 2021). Recent research has highlighted that sound financial literacy, prudent resource management, and emotional cooperation are vital safeguards against stress and economic instability (Zhang et al., 2024). Similarly, emotional cohesion, adaptability, and transparent communication remain decisive factors enabling families to manage disputes, maintain harmony, and sustain long-term stability (Dong et al., 2020). Taken together, these insights suggest that Malaysian family resilience must be understood as a product of both enduring cultural beliefs and shifting socio-economic realities.

In response to the need for a framework reflecting these local conditions, Alias et al. (2025a) designed and validated the Malaysian Generation Y Family Resiliency Scale (*myFRSGY*), a culturally grounded tool to assess resilience among Malaysian Gen Y families. Using Exploratory Factor Analysis (EFA), the authors identified ten key constructs underpinning family resilience of Gen Y: family endurance, roles and responsibilities in family structure, psychological and physical support, communication and conflict resolution, financial stability and economic resilience, adaptability and flexibility in daily life, parenting and children's well-being, spiritual and moral values, independence and self-reliance, and social support networks and community influence. Extending this work, Alias et al. (2025b) conducted a nationwide validation using Confirmatory Factor Analysis (CFA) to test a second-order model of the *myFRSGY*. The results confirmed that these ten constructs form a unified higher-order dimension of family resilience, supported by high reliability and satisfactory model fit. Together, the two studies underscore the value of a psychometrically robust and culturally sensitive framework for examining family resilience of Gen Y in Malaysia.

The conceptual design of the *myFRSGY* scale is directly based on Walsh's Family Resilience Framework (2003, 2016, 2021), which identifies belief systems, organisational patterns, and communication/problem-solving as the three foundations of resilient families. This framework closely aligns with Malaysian cultural principles such as spirituality, interdependent family roles, and community solidarity (Chua et al., 2021; Masiran, 2022). It also reflects the lived experience of Generation Y families, who must balance inherited traditions with modern pressures arising from dual employment and digital lifestyles (Mortejo, 2024; Noor et al., 2023). By integrating these theoretical and cultural dimensions, the *myFRSGY* scale functions as both an analytical model and a practical guide for understanding how Gen Y families in Malaysia continue to adapt amid ongoing societal change.

Building on this foundation, the article aims to rank and compare the relative significance of the ten constructs within the myFRSGY model using a correlation-weighting approach. Through this analysis, the study seeks to identify which factors have the greatest influence on overall family resilience among Malaysian Generation Y households. Such knowledge is essential for policymakers, educators, and family counsellors planning interventions to strengthen family well-being. By highlighting and prioritising the most influential dimensions of resilience, the research aims to contribute to the development of evidence-based strategies that enable Malaysian Generation Y families to face future challenges with unity, flexibility, and enduring strength, while also offering insights that can be applied to strengthen resilience among other generations of Malaysian families.

II. LITERATURE REVIEW

Family resilience has become increasingly recognised in psychological and social research as a vital construct that enables families to withstand, adjust to, and recover from adversity while maintaining emotional and functional stability. The dynamic nature of family resilience reflects the ongoing interaction of several protective components, including psychological capital, social support, and coping strategies, across diverse family contexts. Several studies indicate that families with higher levels of psychological resources, particularly self-efficacy, optimism, and hope, demonstrate greater resilience when faced with health-related challenges, such as caring for children with chronic illnesses or navigating major family crises (Midilli et al., 2024; Chen et al., 2024).

Social support is closely linked to family resilience and serves as an essential buffer against internal and external stressors. Research consistently shows that supportive networks strengthen family cohesion and functioning, especially during difficult times. For example, Cao et al. (2024) highlight the protective role of social relationships in fostering resilience, explaining that supportive environments can significantly reduce stress. The effectiveness of these relationships often depends on families' coping strategies, which mediate the association between family functioning and resilience (Midilli et al., 2024; Chen et al., 2024). Effective coping therefore assists families manage stress and reinforces their ability to recover during periods of crisis.

The context in which families live is also central to defining their resilience capacity. Studies show that specific populations, including military families and those coping with chronic illness, display different levels of resilience shaped by their socio-structural environments. Contextual factors such as geography, culture, and economic conditions influence family strength and adaptability (Ho et al., 2022; Ferraz et al., 2025). This broader understanding affirms that family resilience should not be viewed as a fixed trait but as an ongoing process embedded in daily interactions and social structures. Walsh (2016), along with Masten and Motti-Stefanidi (2015), explains that resilience emerges from interactive family systems built on communication, flexibility, and shared meaning (Tailaiti et al., 2025; Wei et al., 2022). These perspectives clarify how strong family ties and collective beliefs form the foundation for coping and adaptation (Rizzi et al., 2023; Zhang et al., 2024).

Recent literature has shifted the understanding of family resilience from a personality-based trait to a process-oriented concept that aligns with systemic theories emphasising individual behaviour and relational dynamics as sources of resilience (Kılınç & Çelik, 2020; Chung et al., 2023). Walsh's (2016) widely accepted framework identifies three principal domains, namely belief systems, organisational patterns, and communication processes, that explain how families interpret

hardship and mobilise their internal and external resources (Lakhani et al., 2024; Ratajová et al., 2020). Complementing this view, Masten and Motti-Stefanidi (2015) idea of “ordinary magic” suggests that resilience often arises from everyday family practices rather than extraordinary abilities, showing that ordinary routines and relationships can sustain well-being even under pressure (Joseph et al., 2024; Dewi et al., 2019).

Several systemic and ecological theories have shaped how scholars understand family resilience, each offering its own explanation of how families cope and adapt under pressure. Walsh’s Family Resilience Framework (2003, 2016, 2021) focuses on belief systems, organisational patterns, and communication as the core mechanisms that enable families to make sense of challenges and draw strength from shared meaning. The model is process-oriented, highlighting flexibility and connection as vital routes to recovery. In comparison, Patterson’s Family Adjustment and Adaptation Response (FAAR) Model (1988) views resilience as the outcome of balancing family demands with available resources, while McCubbin and McCubbin’s Resiliency Model (1996) describe a recurring process in which protective factors such as coherence, appraisal, and support lead to adaptation. Although these frameworks overlap in their attention to adaptive processes, Walsh’s more integrative approach aligns well with collectivist societies like Malaysia, where shared beliefs and family unity are closely tied to coping and adjustment (Kuang et al., 2022).

Cross-cultural studies on the measurement of family resilience further show that cultural context strongly influences how resilience is defined and assessed. Yu et al. (2022) validated a Chinese version of the Family Resilience Assessment Scale (FRAS) by incorporating values such as filial obligation and intergenerational support, while Kılınc and Çelik (2020) adapted the Walsh Family Resilience Questionnaire in Turkey and found that interdependence and spirituality are central to resilience (Leung et al., 2023). Similarly, Nurhidayah et al. (2023) revised the FRAS for Indonesian families, noting that communal bonds and religious faith play a major role in resilience (Hu et al., 2022). These examples underline the need for culturally grounded tools such as the Malaysian Generation Y Family Resiliency Scale (myFRSGY) developed by Alias et al. (2025a, 2025b), which reflects the distinctive features of endurance, cohesion, and adaptation in Malaysian households. Collectively, these theoretical perspectives and measurement studies confirm that family resilience is multifaceted, culturally embedded, and best examined through frameworks developed within the societies they seek to describe.

As scholarship on family resilience continues to expand, empirical evidence has identified several specific factors that underpin resilience, including emotional communication, attachment, financial security, and adaptability (Yang et al., 2024). Walton et al. (2022) report that emotional cohesion and shared family rituals foster a sense of belonging essential for resilience (Pourshahriar et al., 2024; Oviedo et al., 2022). Moreover, studies show that financial competence and cooperative decision-making are positively related to resilience in families facing economic vulnerability (Cassidy & Reilly, 2024). These findings build a clearer understanding that resilience is strengthened not only by internal family dynamics but also by access to external support (Hou et al., 2023; Fan et al., 2024).

In Malaysia, research on family resilience has gained momentum with the development of culturally grounded measurement tools. Most previous instruments, such as the Family Adaptability and Cohesion Evaluation Scale (FACES-IV) and the Walsh Family Resilience Questionnaire, were developed in Western contexts and may not fully capture the collective, spiritual, and interdependent nature of Malaysian families. Addressing this limitation, Alias et al. (2025a) conducted a nationwide exploratory study through focus group discussions, which then produced the Malaysian Generation Y Family Resiliency Scale (myFRSGY). Based on the themes

emerged from the qualitative findings identified ten key constructs, that are family endurance, roles and responsibilities in family structure, psychological and physical support, communication and conflict resolution, financial stability and economic resilience, adaptability and flexibility in daily life, parenting and child well-being, spiritual and moral values, independence, and social support networks and community influence are the foundation of Gen Y family resilience in Malaysian households. Building on this, Alias et al. (2025b) validated the model through second-order Confirmatory Factor Analysis (CFA), confirming that these ten constructs collectively form a single higher-order construct representing family resilience. The myFRSGY demonstrated satisfactory model fit indices, strong internal reliability, and robust convergent validity. These two studies significantly contribute to local and international understanding of how cultural factors shape family resilience, reinforcing the notion that family resilience must be contextualised rather than universally defined.

Focusing on Malaysian Generation Y adds further insight into the cultural context of resilience. This generation faces complex pressures, including economic uncertainty, rising living costs, and employment instability, which require families to develop adaptive strategies for managing intergenerational responsibilities (Darabos et al., 2021; Yin et al., 2022). The widespread presence of multi-generational households provides emotional and financial support but can also generate tension as role demands increase (Wang et al., 2022; Oviedo et al., 2022). Consequently, identifying resilience constructs that accurately reflect the experiences of this population is essential for creating targeted interventions suited to Malaysian cultural values and family structures (Yörük et al., 2022; Yin et al., 2022).

Concisely, using a correlational-weighting approach to rank resilience constructs provides a rigorous and context-sensitive method for examining family resilience among Malaysian Generation Y families. This analytical method allows for a detailed assessment of how resilience components such as emotional support, economic stability, and communication interact to influence overall strength and recovery. The findings are expected to inform policy and professional practice aimed at enhancing family resilience within this demographic. Although much of the current scholarship originates from Western perspectives, the specific social and cultural realities of Malaysian Generation Y underscore the urgent need for frameworks that are both locally grounded and empirically validated (Alias et al., 2025a; Alias et al., 2025b; Song et al., 2021; Wei et al., 2022).

III. METHODOLOGY

This study used a quantitative cross-sectional design to investigate and rank the constructs of family resilience among Generation Y families in Malaysia. Data were collected through a structured online questionnaire, enabling efficient collection from a broad and diverse group of respondents. The cross-sectional design was appropriate as it captures relationships among variables at a single point in time, providing a clear overview of existing patterns within the population studied. This approach aligns with methodological practices commonly used in cross-sectional research, where data are analysed to identify associations rather than causal relationships (Wiramihardja et al., 2022).

A. Research Design

In this study, a quantitative cross-sectional research design was used to rank the core constructs of family resilience among Malaysian Generation Y families. This approach was chosen because it

effectively measures psychological traits that cannot be directly observed, such as resilience. To achieve the study's objective, a correlational weighting approach was applied to determine the relative contribution of each resilience construct to the overall Malaysian Generation Y Family Resilience Index. This analytical technique, widely used in social science research for constructing composite indices, systematically identifies and ranks constructs based on the strength of their correlation with a composite outcome variable.

In practice, the correlational weighting approach assigns greater importance to indicators that are more strongly associated with the target construct, on the rationale that these indicators have a greater influence on the overall measure. As Booysen (2002) notes, this method enhances objectivity in index construction by providing an empirical foundation for weighting individual components. Furthermore, Greco, Ishizaka, Tasiou, and Torrisi (2019) emphasise that correlational weighting improves both the validity and interpretability of composite indices by aligning the index structure with actual data relationships. Although the technique may be sensitive to variations within certain samples, it remains a robust and widely accepted procedure for developing meaningful, data-driven indices in social science research.

B. Participants

A total of 272 married Generation Y Malaysians, aged 25 to 45 years (born 1980 to 2000), participated in this study. For this research, Generation Y is defined as those born from 1980 to 2000, a range widely used in demographic and organisational studies of the millennial cohort (Lyons & Kuron, 2014; Parry & Urwin, 2011). The term family refers to a household unit consisting of a husband, a wife, and at least one child, reflecting the conventional nuclear arrangement commonly used in sociological and census classifications. In sociological terms, the nuclear family describes a married couple living with their children and serves as the basic social and economic unit within most demographic frameworks (Quincy & Manduza, 2021). Only fully completed questionnaires were included in the final analysis.

C. Sample Size Determination and Adequacy

In this study, a simple random sample was used to recruit participants from the general population of married Malaysian Generation Y. The target population comprised married individuals born between 1980 and 2000, currently aged 25 to 45 years. To qualify for participation, individuals were required to be legally married and part of a household unit consisting of a husband, wife, and at least one child, as establishing family structure is crucial to understanding family resilience.

According to national statistics, the estimated number of married Generation Y individuals in Malaysia is approximately 8.7 million, representing about 42.5% of the total population when adjusted for marital status (Department of Statistics Malaysia, 2022). To determine the appropriate sample size for this study, the guideline proposed by Krejcie and Morgan (1970) was applied. The sample size table indicates that a minimum of 384 respondents is required to achieve a 95% confidence level and a 5% margin of error for a population of approximately 8.7 million. This standard remains widely used in social science research, and subsequent methodological reviews have affirmed its suitability for large populations (Mishra, 2021).

Although this study obtained 272 valid and complete responses, which is fewer than the number recommended by Krejcie and Morgan (1970), the sample is still adequate for detecting medium effect sizes in multivariate analyses. Previous studies have shown that slightly smaller samples can yield dependable and valid findings when the data are of high quality and the analysis is rigorous

(Ataei et al., 2022; Sarki & Saat, 2021). Therefore, despite the lower response rate, the sample used in this study is considered sufficient to fulfil the research objective and provide meaningful insights into ranking the constructs of family resilience among Malaysian Generation Y families.

To promote inclusivity, the study adopted a sampling strategy that gathered responses from either the husband or the wife in Generation Y families living across all thirteen states and three federal territories of Malaysia. This broad geographical coverage was important to reduce regional bias that often occurs in online surveys. The researcher distributed the questionnaire through digital platforms such as WhatsApp, Facebook, email, and Telegram, which are among the most used communication channels in Malaysia. In addition, trained enumerators assisted in the distribution process to improve participation rates and provide clarification when necessary. This procedure is consistent with previous research that highlights the role of skilled personnel in data collection to ensure accuracy and high-quality responses (June and Mahmood, 2020).

This research received financial support from the Ministry of Higher Education Malaysia (MOHE) through the Fundamental Research Grant Scheme (FRGS) [Project ID: 20888; Reference Code: FRGS/1/2022/SS09/SEGI/02/2]. Ethical approval was secured from the SEGi University Ethics Committee, where the principal investigator is affiliated. The committee provided clearance under Reference SEGIEC/STR/FOELPM/476/2024-2025, confirming that the study complied with institutional ethical requirements. These included obtaining informed consent from all participants, ensuring confidentiality of their information, and upholding the principle of voluntary participation throughout the research process.

D. Instrument

The main instrument used in this study was the Malaysian Generation Y Family Resilience Scale (myFRSGY), which measures multiple dimensions of family resilience among Malaysian Generation Y families (Alias et al., 2025a). The development of the myFRSGY was guided by Walsh's Family Resilience Framework, which identifies three main domains of resilience: belief systems, organisational patterns, and communication or problem-solving processes. These domains were carefully adapted to the Malaysian context through qualitative research and systematic item development.

Based on findings from focus group discussions conducted in five regions of Malaysia, an initial pool of 102 items was generated to reflect culturally and generationally relevant aspects of family resilience. The items were then organised into ten proposed constructs. Exploratory factor analysis (EFA) supported the existence of ten distinct constructs, each showing strong internal consistency, with Cronbach's alpha values ranging from 0.922 to 0.972. Each item in the myFRSGY uses a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To further confirm the validity of the scale, confirmatory factor analysis (CFA) was performed. The CFA results indicated a second-order factor model with acceptable fit indices ($\chi^2 = 10564.570$, CFI = 0.851, RMSEA = 0.054, SRMR = 0.033). The scale demonstrated good internal consistency, with composite reliability (CR) values between 0.825 and 0.988. In addition, the average variance extracted (AVE) values ranged from 0.536 to 0.890, showing satisfactory convergent validity. The factor loadings, which ranged from 0.676 to 0.984, further confirmed the robustness of the model (Alias et al., 2025b).

The final version of the myFRSGY consists of 90 items grouped into ten validated constructs: family endurance, roles and responsibilities within the family, psychological and physical support, communication and conflict resolution, financial stability and economic resilience, adaptability

and flexibility in daily life, parenting and children's well-being, spiritual and moral values, independence and self-reliance, and social support and community influence. Using these ten constructs, the Malaysian Generation Y Family Resilience Index (myFRIGY) was developed through a correlational weighting method to determine the relative contribution of each construct to the overall index of family resilience. The Malaysian Generation Y Family Resilience Scale (myFRSGY) is currently undergoing intellectual property registration with the Intellectual Property Corporation of Malaysia (MyIPO). The application acknowledges the instrument's originality, academic contribution, and potential use as a standardised tool for assessing family resilience among Malaysian Generation Y families.

E. Data Analysis Procedures

In this study, the correlational weighting approach was used to examine the contribution of each construct to the Malaysian Generation Y Family Resilience Index (myFRIGY). This analytical method assigns numerical weights to constructs based on their correlation with the overall family resilience score, allowing an objective assessment of their relative importance (Hair et al., 2014; Hinkin, 1998). The analysis began with the computation of correlation coefficients between the validated constructs of the myFRIGY scale and the composite family resilience score for Malaysian Generation Y families (Byrne, 2016). Constructs with stronger correlations were given higher weights, reflecting their greater influence, while those with weaker correlations received smaller weights (Stevens, 2012).

After the weighting process, the values were normalised so that their total equalled one. This step ensured comparability among all constructs and improved clarity of interpretation. As a result, the ranked list of constructs indicated which aspects were most critical to family resilience within Malaysian Generation Y families (Kline, 2015). The correlational weighting approach was considered appropriate for this study because it reduces subjective bias and provides a dependable framework for analysing interrelated constructs that differ in their level of influence (Tabachnick & Fidell, 2019). Moreover, this method is widely applied in social science research for constructing indices that represent complex psychological and social dimensions (DeVellis, 2017).

IV. RESULTS

The objective of this study was to rank the ten validated constructs of family resilience among Malaysian Generation Y families using the correlational weighting approach. The analysis began with the calculation of Pearson correlation coefficients among the ten constructs identified from the myFRSGY scale. The findings showed strong and significant positive relationships between all constructs, with correlation values ranging from 0.664 to 0.894. These results confirmed that the constructs are interconnected yet represent distinct aspects contributing to the broader framework of family resilience.

To determine the relative importance of each construct, the overall correlation value (r_j) for each construct was calculated by summing its correlations with the other constructs. Each total was then divided by the cumulative sum of all correlation values to obtain the normalised weight (w_j). This procedure produced a proportional estimate of how much each construct contributes to the overall index of family resilience. The Malaysian Generation Y Family Resilience Index (myFRIGY) was then computed by multiplying each construct's mean score by its corresponding normalised weight. The resulting weighted scores were summed to produce a composite index value. This final score represents the combined strength of family resilience across all ten constructs. Using

this approach, the overall family resilience index for the sample was found to be 3.94 out of 5, indicating a moderate to high level of family resilience among Malaysian Generation Y families.

The ten constructs were then ranked in descending order based on their normalised weights. The results showed that roles and responsibilities in family structure ranked highest, followed by psychological and physical support, and communication and conflict resolution. These three constructs emerged as the most influential dimensions in explaining family resilience among Malaysian Generation Y families. In contrast, spiritual and moral values, as well as social support network and community influence, received the lowest rankings, suggesting that they contributed less to the overall resilience index.

Table 1 presents the total correlation scores, the normalised weights, and the ranking of each construct according to their relative importance.

Table 1

Ranking of Malaysian Gen Y Family Resilience Constructs Based on Correlational Weighting

Construct	Total Correlation Score (r_i)	Normalised Weight (w_i)	Rank
Roles and Responsibilities in Family Structure (RRFS)	8.771	0.104	1
Psychological and Physical Support (PPS)	8.717	0.103	2
Communication and Conflict Resolution (CCR)	8.647	0.103	3
Parenting and Children's Well-Being (PCWB)	8.609	0.102	4
Financial Stability and Economic Resilience (FSE)	8.548	0.102	5
Adaptability and Flexibility in Daily Life (AFL)	8.512	0.101	6
Family Endurance (FE)	8.391	0.100	7
Independence and Self-Reliance (ISR)	8.309	0.099	8
Social Support Network and Community Influence (SSNC)	8.277	0.098	9
Spiritual and Moral Values (SMV)	7.922	0.094	10

The ranking results in Table 1 indicate that family resilience among Malaysian Generation Y families is most strongly influenced by effective role fulfilment, emotional and physical support, and communication within the family. These findings underscore the importance of maintaining clear responsibilities, mutual care, and constructive problem-solving as core foundations of resilient family systems. In contrast, lower-ranked constructs such as spiritual and moral values, and community-based support, suggest that external and value-oriented factors play a less immediate role in shaping resilience among younger Malaysian families. Overall, the results suggest that strengthening intra-family dynamics may have the greatest impact on enhancing family resilience, while cultural and social dimensions could serve as supplementary supports in fostering long-term adaptability and cohesion.

V. DISCUSSIONS

This study aimed to examine and rank the ten validated constructs of family resilience among Malaysian Generation Y families using a correlational weighting approach. The overall Malaysian Generation Y Family Resilience Index (myFRIGY) score was 3.94 out of 5, indicating a moderate to high level of resilience within this population. Among the constructs, roles and responsibilities in family structure, psychological and physical support within the family unit, and communication

and conflict resolution were identified as the most influential contributors to overall family resilience. In contrast, spiritual and moral values, as well as social support networks and community influence, received the lowest rankings. These patterns reflect the lived realities, socio-economic challenges, and evolving household structures that characterise Malaysian Generation Y families.

The strong emphasis on roles and responsibilities in family structure demonstrates the enduring importance of clearly defined roles in sustaining family stability and cohesion. This finding aligns with Walsh's Family Resilience Framework (2016), which highlights the significance of organisation and shared responsibility as mechanisms that help families manage stress and maintain equilibrium. For Malaysian Generation Y families, many of whom are dual-income and juggle multiple responsibilities, role clarity provides structure and predictability, reducing family tension and enhancing adaptability. This observation corresponds with earlier research indicating that equitable role distribution promotes coping and collective strength, particularly in collectivist societies where familial obligations are deeply rooted (Midilli et al., 2024; Cao et al., 2024).

The next two constructs, psychological and physical support and communication and conflict resolution, further underline the role of emotional security and interpersonal connectedness in building resilience. Families that provide consistent emotional and physical support tend to cope more effectively with crises and recover more quickly from setbacks. This result echoes the findings of Walton et al. (2022) and Yang et al. (2024), who reported that emotional cohesion and mutual caregiving foster family resilience in stressful circumstances. Similarly, effective communication allows family members to express emotions, negotiate responsibilities, and manage disagreements constructively. Such interaction patterns strengthen mutual understanding and trust, which are essential for maintaining resilience in dual-career households facing modern economic and parenting pressures.

Interestingly, spiritual and moral values and social support networks and community influence ranked lowest among the ten constructs. This does not mean these domains are irrelevant; rather, their effects may be more indirect or context dependent. As suggested by Kuang et al. (2022) and Leung et al. (2023), younger urban families may prioritise internal relational dynamics over external communal or spiritual networks due to lifestyle constraints and changing value systems. The generational shift towards individualised coping strategies, particularly among urban Malaysian Generation Y families, may explain this finding. It is also possible that spirituality and community engagement manifest through other constructs such as emotional support or shared meaning, rather than as distinct predictors of resilience.

These findings are consistent with Walsh's (2016) framework, which identifies communication, organisation, and emotional support as central pillars of resilient family systems. However, they differ from many Western studies where spiritual beliefs and community engagement play a more dominant role (Ho et al., 2022; Ferraz et al., 2025). This difference reinforces the need for culturally grounded resilience models that capture the collective and interdependent values of Malaysian families. In this regard, the current study builds on Alias et al. (2025a, 2025b), who developed and validated the multidimensional structure of the Malaysian Generation Y Family Resilience Scale (myFRSGY). By empirically ranking the constructs, this study extends that work by quantifying which dimensions contribute most strongly to resilience and are therefore most relevant for policy and programme development.

The results further support the theoretical position that family resilience is not a single trait but a composite of interrelated and interacting factors. The use of the correlational weighting approach

adds methodological value, providing a transparent and data-based way to estimate the relative influence of each construct. This analytical framework bridges theory and practice, enabling researchers and policymakers to identify the areas of family functioning that most require strengthening. It also provides a foundation for developing standardised resilience indices that can be adapted across different demographic or cultural contexts.

From a practical perspective, the findings have significant implications for family-focused policies and interventions in Malaysia. Programmes aiming to enhance family resilience should prioritise clarifying family roles, strengthen emotional support systems, and promoting effective communication within households. These strategies are especially relevant for Generation Y families managing dual careers, parenting responsibilities, and financial pressures. Family education and counselling initiatives may also benefit from focusing less on external engagement and more on internal family processes such as empathy, emotional literacy, and cooperative problem-solving, which showed stronger statistical associations with resilience in this study.

Despite its strengths, the study has several limitations. The cross-sectional design prevents causal inference, and reliance on self-reported data may introduce social desirability bias. Additionally, online survey distribution may have limited participation from families without stable internet access, potentially biasing the sample towards urban or digitally literate households. Future studies could use longitudinal designs to explore how resilience develops over time and how different constructs interact across family life stages. Comparative studies involving other generations or Southeast Asian countries could also provide deeper insight into how cultural and economic transitions influence family resilience.

Overall, the findings highlight that family resilience among Malaysian Generation Y families is primarily sustained through well-defined family roles, emotional and physical support, and open communication. These dimensions form the foundation of resilient family systems, enabling families to adapt to social and economic change while maintaining cohesion. The results contribute to a growing body of culturally sensitive research on resilience and provide actionable evidence for developing family-strengthening initiatives tailored to Malaysia's evolving social landscape. In nutshell, this discussion demonstrates how the ranking of resilience constructs not only advances theoretical understanding but also informs practical approaches to family development and well-being.

VI. CONCLUSION

This study ranked ten constructs of family resilience among Malaysian Generation Y families using a correlational weighting approach. The analysis resulted in the development of the Malaysian Generation Y Family Resilience Index (myFRIGY), a data-driven index derived from the multidimensional Malaysian Generation Y Family Resilience Scale (myFRSGY). By assessing the statistical contribution of each construct to overall resilience, the study provides a culturally relevant and context-sensitive framework for understanding how Malaysian families adapt to social and economic challenges.

The findings indicate that Malaysian Generation Y families exhibit moderate to high levels of resilience, with an overall index score of 3.94 out of 5. The most influential constructs were roles and responsibilities within the family structure, psychological and physical support, and communication and conflict resolution. In contrast, spiritual and moral values, along with social support networks and community influence, contributed relatively less. These results highlight the

importance of internal family processes, particularly role clarity, emotional support, and effective communication, in sustaining resilience within Malaysian households. This study extends the literature on family resilience by presenting a model that is both empirically validated and culturally grounded. The use of the correlational weighting approach further enhances the objectivity of the construct ranking and provides a replicable framework that may be adapted to other populations or cultural contexts.

The findings also have significant implications for policymakers, educators, and practitioners. Interventions to strengthen family resilience should prioritise programmes that foster communication, emotional well-being, and clearly defined family roles. These focus areas are especially relevant for Generation Y families managing dual careers, financial pressures, and evolving family dynamics. Strengthening these internal mechanisms can help families navigate contemporary challenges while maintaining cohesion and adaptability (Walsh, 2021). Such initiatives align with Malaysia's Family Well-Being Policy (Ministry of Women, Family and Community Development [MWFC], 2021), which emphasises the development of strong, resilient, and connected families as the foundation of national stability.

Ultimately, this study advances the scientific understanding of family resilience within the Malaysian context. The establishment of the myFRIGY index provides a robust empirical foundation for future research and offers policymakers and practitioners a practical benchmark for assessing and strengthening family well-being. By highlighting the key dimensions that sustain resilient families, this study underscores the importance of nurturing communication, emotional support, and shared responsibility as the cornerstones of stable and adaptive households. In doing so, it affirms that strengthening Malaysian families today is fundamental to building a more cohesive and resilient society for future generations.

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EXPLORING STUDENT ENGAGEMENT IN A HYFLEX INTEGRITY AND ANTI-CORRUPTION COURSE

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ABSTRACT

The Hybrid-Flexible (HyFlex) learning model has gained prominence in higher education for its adaptable structure, particularly during the COVID-19 pandemic. In Malaysia, the introduction of the compulsory Kursus Integriti dan Anti-Rasuah (KIAR), or Integrity and Anti-Corruption Course in public universities marks a strategic educational response to persistent corruption challenges, aiming to cultivate ethical awareness and reflective thinking among youth. This study examines student engagement in the KIAR course delivered through a HyFlex learning model, focusing on how flexible learning supports morally driven educational outcomes. Guided by the Theory of Planned Behavior (TPB), the research investigates how attitudes, subjective norms, and perceived behavioral control influence students' engagement in an educational context centered on ethical and moral challenges. A quantitative cross-sectional survey was conducted at a private university in Malaysia, with findings largely supporting TPB predictions: attitudes ($p < 0.001$), subjective norms ($p = 0.05$), and perceived behavioral control ($p < 0.001$) significantly influenced behavioral intentions, which in turn emerged as the only significant predictor of students' self-reported anti-corruption behavior ($p < 0.001$), indicating complete mediation. The model explained 65.5% of the variance in behavioral intention and 61.2% in actual behavior. The findings suggest that the KIAR course, when delivered through a HyFlex model, fosters student engagement by shaping intentions toward morally driven outcomes. This shows that intention is key to turning learning into ethical action, and that flexible learning can support education focused on integrity.

Keywords: Hyflex Learning, Integrity Education, Theory Of Planned Behavior, Student Intention.

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**PERSEPSI KELUARGA MELAYU B40 TERHADAP KOS SARA HIDUP DAN
KEBERKESANAN DASAR KERAJAAN: ANALISIS DESKRIPTIF DAN UJIAN
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ABSTRAK

Kajian ini bertujuan meneliti persepsi keluarga Melayu B40 terhadap kos sara hidup serta menilai keberkesanan dasar kerajaan dalam membantu golongan tersebut menghadapi tekanan ekonomi semasa. Dalam konteks peningkatan kos barangan dan perkhidmatan pascapandemik COVID-19, isu kos sara hidup kekal menjadi cabaran utama bagi isi rumah berpendapatan rendah. Kajian dilaksanakan dalam dua fasa kajian rintis ($n=42$) untuk menilai kebolehpercayaan instrumen dan kajian sebenar ($n=390$) menggunakan persampelan bertujuan melibatkan keluarga B40 di Lembah Klang (bandar) dan Sik, Kedah (luar bandar). Soal selidik dianalisis menggunakan statistik deskriptif dan inferensi ujian Mann-Whitney U, di samping penilaian kebolehpercayaan serta kesahan konstruk. Dapatan menunjukkan tahap kesejahteraan kewangan sederhana dengan corak perbelanjaan berjimat, manakala persepsi terhadap keberkesanan dasar kerajaan berada pada tahap sederhana dan bercampur terutamanya berkaitan bantuan kewangan, kawalan harga asas dan program pemerkasaan ekonomi. Ujian inferensi Mann-Whitney U mendapati responden luar bandar melaporkan beban kos hidup yang lebih tinggi berbanding bandar ($p=0.01$), sementara penduduk bandar lebih cenderung mengurangkan pembelian barangan bukan asas apabila harga asas meningkat ($p=0.05$). Tiada perbezaan signifikan bagi persepsi ketepatan penyasaran bantuan ($p=0.06$). Hasil kajian ini mencadangkan keperluan penambahbaikan dasar yang lebih bersasar, tepat masa dan berimpak tinggi serta pengukuhan literasi kewangan bagi menjamin kesejahteraan keluarga Melayu B40 secara mampan.

Kata Kunci: Kos Sara Hidup, Keluarga Melayu B40, Persepsi, Dasar Kerajaan, Deskriptif, Mann-Whitney U.

PENGENALAN

Kajian ini bertujuan menilai kesejahteraan kewangan, corak perbelanjaan harian serta persepsi keluarga Melayu B40 terhadap keberkesanan dasar kerajaan dalam menangani isu kos sara hidup yang semakin meningkat. Peningkatan harga barangan dan perkhidmatan asas selepas pandemik COVID-19 telah memberi tekanan terhadap kemampuan isi rumah berpendapatan rendah untuk menampung perbelanjaan asas dan mengekalkan kestabilan kewangan, khususnya dalam kalangan keluarga Melayu B40. Walaupun pelbagai inisiatif seperti bantuan tunai, subsidi dan program pemerkasaan ekonomi telah dilaksanakan oleh kerajaan, keberkesananannya masih dinilai secara berbeza mengikut konteks lokaliti dan keadaan sosioekonomi.

Dalam konteks ini, pemahaman terhadap kesejahteraan kewangan dan corak perbelanjaan keluarga B40 menjadi penting bagi menilai daya tahan ekonomi mereka, terutamanya apabila berdepan tekanan kos sara hidup. Kajian ini menggunakan pendekatan analisis deskriptif untuk menerangkan tahap kesejahteraan kewangan, corak perbelanjaan harian dan persepsi terhadap dasar kerajaan, serta analisis inferensi melalui ujian Mann–Whitney U bagi mengenal pasti perbezaan signifikan antara keluarga di kawasan bandar dan luar bandar. Dapatan menunjukkan tahap kesejahteraan kewangan dan persepsi terhadap dasar kerajaan berada pada tahap sederhana, dengan corak perbelanjaan yang berhemah serta wujud perbezaan kecil mengikut lokaliti.

Objektif kajian ini adalah:

1. Untuk menerangkan tahap kesejahteraan kewangan, corak perbelanjaan harian dan persepsi terhadap keberkesanan dasar kerajaan dalam kalangan keluarga Melayu B40 di kawasan bandar dan luar bandar melalui analisis deskriptif.
2. Untuk menguji perbezaan signifikan antara keluarga Melayu B40 di kawasan bandar dan luar bandar dari aspek kesejahteraan kewangan, corak perbelanjaan harian dan persepsi terhadap dasar kerajaan menggunakan ujian Mann–Whitney U.

Hasil kajian ini diharap dapat memberikan gambaran empirikal yang lebih jelas kepada pembuat dasar dan pihak berkepentingan dalam menambah baik mekanisme bantuan bersasar, meningkatkan keberkesanan pelaksanaan dasar serta memperkukuh literasi kewangan dalam kalangan keluarga berpendapatan rendah. Kajian ini juga menyumbang kepada pemahaman saintifik mengenai hubungan antara kos sara hidup, corak perbelanjaan dan persepsi terhadap dasar kerajaan, seterusnya menyokong pembangunan dasar sosioekonomi yang lebih inklusif dan mampan bagi keluarga Melayu B40 di Malaysia.

KAJIAN LITERATUR

Tema yang ditekankan dalam kajian literatur ini ialah:

a) Implikasi Kenaikan Kos Sara Hidup terhadap Corak Perbelanjaan Keluarga B40

Kenaikan kos sara hidup menjadi antara isu utama yang menjejaskan kesejahteraan ekonomi keluarga berpendapatan rendah di Malaysia, khususnya dalam kalangan keluarga Melayu B40. Menurut Jaafar dan Ismail (2020), isi rumah bandar berdepan tekanan kewangan yang lebih ketara

berbanding luar bandar disebabkan struktur kos sara hidup yang kompleks, termasuk perbelanjaan tetap seperti sewa, utiliti, dan pengangkutan. Ibrahim dan Kassim (2021) pula menegaskan bahawa peningkatan harga barangan asas pascapandemik meningkatkan risiko inflasi yang menjejaskan kuasa beli keluarga berpendapatan rendah.

Kajian oleh Ibhrim et al. (2024a) turut membuktikan bahawa kenaikan harga makanan dan barangan asas selepas pandemik COVID-19 memberi kesan langsung terhadap keupayaan isi rumah B40 di Lembah Klang untuk menguruskan kewangan harian. Responden didapati beralih kepada corak perbelanjaan berjimat dan menumpukan keutamaan terhadap keperluan asas berbanding kehendak. Dapatan ini selari dengan tren literatur semasa yang menunjukkan bahawa isi rumah berpendapatan rendah menyesuaikan corak perbelanjaan mereka sebagai strategi adaptasi ekonomi apabila pendapatan tidak meningkat seiring dengan harga barangan (Ibrahim & Kassim, 2021; Jaafar & Ismail, 2020). Oleh itu, memahami kesan kenaikan kos sara hidup terhadap corak perbelanjaan harian amat penting bagi menilai tahap kesejahteraan kewangan dan daya tahan keluarga B40 dalam menghadapi cabaran ekonomi semasa.

b) Keberkesanan Dasar Kerajaan dalam Menangani Isu Kos Sara Hidup

Keberkesanan dasar kerajaan memainkan peranan penting dalam mengurangkan beban kos sara hidup golongan B40. Mohd Salleh et al. (2020) mendapati bahawa pelaksanaan bantuan di kawasan luar bandar lebih tersusun kerana komuniti yang kecil dan mudah dikenal pasti, manakala pelaksanaan di bandar lebih mencabar disebabkan kepelbagaian demografi dan keperluan. Aziz dan Hassan (2022) pula menilai dasar seperti Sumbangan Tunai Rahmah (STR) dan mendapati bahawa walaupun dasar ini membantu mengurangkan tekanan jangka pendek, kesannya terhadap kestabilan ekonomi jangka panjang masih sederhana.

Ibhrim et al. (2022a) turut menegaskan bahawa bantuan tunai kerajaan semasa pandemik COVID-19 hanya memberi kesan sementara kepada kesejahteraan keluarga B40, kerana nilai bantuan tidak seimbang dengan peningkatan kos barangan asas. Kajian susulan oleh Ibhrim et al. (2024b) menunjukkan bahawa dasar bantuan sedia ada berpotensi menambah baik daya tahan kewangan sekiranya ditambah baik dari segi ketepatan sasaran, masa pelaksanaan, dan komunikasi awam. Justeru, keberkesanan dasar perlu dinilai bukan sahaja dari segi jumlah bantuan, tetapi juga sejauh mana ia benar-benar membantu keluarga B40 menyesuaikan diri dengan peningkatan kos sara hidup secara mampan dan lestari.

c) Persepsi Masyarakat terhadap Keberkesanan Dasar Kerajaan

Persepsi masyarakat terhadap dasar kerajaan menjadi petunjuk penting kepada tahap penerimaan dan kepercayaan rakyat terhadap pelaksanaan dasar sosial. Pengukuran persepsi ini sering dilakukan melalui skala Likert bagi menilai tahap kepuasan dan kepercayaan terhadap pelaksanaan dasar (Hair et al., 2014). Nor et al. (2021) menegaskan bahawa pelaksanaan dasar awam di Malaysia sering berdepan cabaran birokrasi dan penyelarasan yang lemah, menyebabkan penerimaan masyarakat berada pada tahap sederhana.

Kajian Ibhrim et al. (2022b) menunjukkan bahawa persepsi terhadap bantuan kerajaan ketika pandemik COVID-19 bercampur; penerima mengiktiraf niat murni kerajaan, tetapi ramai berpendapat bahawa nilai bantuan tidak mencukupi untuk menampung keperluan harian. Dapatan

ini turut disokong oleh Aziz dan Hassan (2022), yang mendapati bahawa kekangan penyasaran penerima dan kelewatan pelaksanaan menjejaskan persepsi awam terhadap kecekapan dasar. Oleh itu, persepsi terhadap keberkesanan dasar kerajaan bukan hanya mencerminkan sikap, tetapi juga pengalaman langsung isi rumah terhadap pelaksanaan bantuan di lapangan, seperti yang dinilai dalam kajian ini.

d) Perbezaan Lokaliti terhadap Kesejahteraan dan Persepsi Sosioekonomi

Faktor lokaliti mempunyai pengaruh yang signifikan terhadap tahap kesejahteraan sosioekonomi dan persepsi masyarakat terhadap dasar kerajaan. Mustapha dan Kamarudin (2019) menjelaskan bahawa jurang geografi bukan sekadar perbezaan lokasi, tetapi turut mencerminkan jurang peluang pekerjaan, perkhidmatan asas dan sokongan sosial. Masyarakat bandar cenderung berdepan tekanan kos hidup yang tinggi, manakala penduduk luar bandar pula mengalami kekangan akses kepada barangan mampu milik dan sumber pendapatan tetap.

Kajian Ibhrim et al. (2024a) dan Ibhrim et al. (2022a) menunjukkan bahawa keluarga luar bandar lebih terkesan oleh kenaikan harga barangan asas berbanding keluarga bandar kerana pendapatan mereka yang rendah menjadikan mereka lebih sensitif terhadap inflasi. Sebaliknya, penduduk bandar lebih terkesan dalam aspek pengurangan pembelian barangan bukan asas apabila harga meningkat. Dapatan ini konsisten dengan Mustapha dan Kamarudin (2019) serta Nor dan Ismail (2022), yang menekankan bahawa perbezaan lokaliti perlu diambil kira dalam merangka dasar sosioekonomi yang lebih inklusif. Justeru, kajian ini mengesahkan bahawa faktor lokaliti kekal sebagai pemboleh ubah penting dalam menilai kesejahteraan dan persepsi keluarga Melayu B40 terhadap dasar kerajaan.

METODOLOGI

a) Latar Belakang Responden

Kajian ini melibatkan seramai 390 responden dari kalangan isi rumah B40. Majoriti responden ialah perempuan (60.8%) dan dari segi umur, kumpulan terbesar adalah berusia antara 45 hingga 54 tahun (25.4%), diikuti oleh golongan muda 18 hingga 24 tahun (23.8%). Sebahagian besar responden telah berkahwin (57.9%) dan mempunyai antara tiga hingga empat tanggungan (30.5%). Tahap pendidikan tertinggi kebanyakan responden adalah SPM atau setaraf (39.7%), manakala hanya sebilangan kecil memiliki ijazah sarjana (1.5%) atau tiada pendidikan formal (1.8%).

Dari segi pekerjaan, 34.1% bekerja sepenuh masa manakala 26.7% bekerja sendiri. Sejumlah 15.1% merupakan penganggur dan 11.3% ialah suri rumah. Sebahagian besar isi rumah memperoleh pendapatan bulanan RM1,000 ke bawah (39.7%), manakala hanya 5.1% berada dalam julat RM4,001 hingga RM5,000. Sumber pendapatan utama adalah gaji tetap (43.6%), diikuti perniagaan sendiri (15.6%) dan bantuan kerajaan (6.7%).

Akses terhadap teknologi menunjukkan kebanyakan responden menggunakan telefon pintar untuk sambungan internet (67.2%) dan pembelian gajet secara tunai (87.7%). Walaupun sebahagian besar menerima bantuan kewangan (48.5%), ramai menyatakan bantuan tidak mencukupi (76.9%) dan menghadapi kesukaran memohon (74.1%). Isu utama yang dihadapi termasuk kos sara hidup

yang tinggi (89.2%), keadaan ekonomi yang semakin buruk (68.7%), serta cabaran membayar keperluan asas dan bil utiliti.

Dari sudut kewangan, hanya 67.7% responden mempunyai simpanan dan 86.9% pernah menerima pendidikan kewangan. Walaupun 57.7% menyatakan inisiatif kerajaan membantu mereka, masih wujud ruang penambahbaikan dari aspek keberkesanan dan capaian bantuan sedia ada.

b) Reka Bentuk Kajian

Kajian ini menggunakan reka bentuk kuantitatif berbentuk tinjauan kerana pendekatan ini membolehkan pengumpulan data yang luas dan analisis perbandingan antara kumpulan responden bandar dan luar bandar. Pendekatan kuantitatif dipilih bagi membolehkan pengukuran objektif terhadap persepsi, kesejahteraan kewangan dan corak perbelanjaan menggunakan data ordinal melalui skala Likert empat mata (1 = Sangat Tidak Setuju hingga 4 = Sangat Setuju).

c) Sampel dan Lokasi Kajian

Kajian dilaksanakan dalam dua fasa: kajian rintis melibatkan 42 responden bagi menilai kebolehpercayaan instrumen, dan kajian sebenar melibatkan 390 responden yang dipilih menggunakan kaedah persampelan bertujuan. Responden terdiri daripada isi rumah kategori B40 di dua lokaliti sosioekonomi berbeza, iaitu kawasan bandar (Lembah Klang) dan luar bandar (daerah Sik, Kedah). Pemilihan dua lokaliti ini bertujuan membandingkan perbezaan persepsi dan kesejahteraan berdasarkan faktor geografi.

d) Instrumen Kajian

Soal selidik dibahagikan kepada empat bahagian:

1. Bahagian A – Latar belakang responden
2. Bahagian B – kesejahteraan kewangan
3. Bahagian C – corak perbelanjaan harian
4. Bahagian D – persepsi terhadap keberkesanan dasar kerajaan.

Setiap konstruk diukur melalui item berasaskan skala Likert empat mata. Instrumen telah disemak oleh pakar bidang bagi menjamin kesahan kandungan.

e) Kesahan dan Kebolehpercayaan Instrumen

Ujian rintis menunjukkan nilai pekali Cronbach's Alpha yang tinggi bagi setiap konstruk: kesejahteraan kewangan ($\alpha = 0.94$), corak perbelanjaan ($\alpha = 0.78$) dan keberkesanan dasar kerajaan ($\alpha = 0.83$). Nilai $\alpha > 0.70$ menunjukkan kebolehpercayaan yang baik (Hair et al., 2014; Bond &

Fox, 2015). Kesahan konstruk disahkan melalui semakan pakar berdasarkan teori ekonomi dan sosial yang berkaitan.

f) Kerangka Teori

Kajian ini berasaskan tiga teori utama: Teori Ekonomi Neoklasik yang menerangkan kesan harga dan pendapatan terhadap keputusan perbelanjaan isi rumah (Jevons, 1871); Teori Kesejahteraan Ekonomi (Pigou, 1920) yang menilai hubungan antara pendapatan, penggunaan sumber dan kepuasan hidup; dan Teori Strukturalisme (Prebisch, 1950) yang menekankan ketidakseimbangan struktur ekonomi antara bandar dan luar bandar. Gabungan ketiga-tiga teori ini membentuk asas kepada tiga konstruk kajian, iaitu kesejahteraan kewangan, corak perbelanjaan harian dan keberkesanan dasar kerajaan.

g) Ujian Normaliti dan Analisis Data

Data dianalisis menggunakan perisian IBM SPSS Statistics v27. Ujian Kolmogorov–Smirnov dan Shapiro–Wilk menunjukkan $p < 0.05$ bagi semua konstruk, menandakan data tidak bertaburan normal (Ghasemi & Zahediasl, 2012). Oleh itu, analisis inferensi menggunakan ujian bukan parametrik Mann-Whitney U bagi mengenal pasti perbezaan signifikan antara responden bandar dan luar bandar. Analisis deskriptif digunakan untuk menerangkan taburan min, median dan sisihan piawai bagi setiap konstruk.

h) Julat Nilai Skor

Julat	Tahap
1.00–1.99	Rendah
2.00–2.99	Sederhana
3.00–3.99	Tinggi
4.00	Sangat Tinggi

Jadual 1. Skala Penilaian Tahap Jawapan Berdasarkan Julat Nilai Min

Sumber: Sumber: Bond & Fox (2015)

Jadual 1 menunjukkan julat nilai skor dalam sesuatu instrumen pengukuran biasanya diklasifikasikan kepada beberapa tahap untuk memudahkan interpretasi dan pemahaman hasil kajian. Bond dan Fox (2015) membahagikan julat skor kepada empat tahap iaitu rendah (1.00–1.99), sederhana (2.00–2.99), tinggi (3.00–3.99), dan sangat tinggi (4.00). Tahap rendah menunjukkan keadaan atau respon yang kurang memuaskan dan kurang ketara, manakala tahap sederhana melambangkan keadaan yang berada di tengah-tengah, tidak begitu memuaskan tetapi tidak juga terlalu buruk. Tahap tinggi pula menunjukkan penilaian yang positif dan memuaskan, manakala tahap sangat tinggi menandakan hasil optimum atau kepuasan yang sangat tinggi terhadap aspek yang diukur. Kajian oleh Hair et al. (2014) dan Sekaran & Bougie (2016) juga menegaskan kepentingan pembahagian tahap ini bagi memudahkan penyelidik dan pembaca memahami data dengan lebih sistematik serta membuat rumusan yang tepat berdasarkan analisis

data. Pembahagian tahap ini amat berguna dalam kajian sosial dan Mann Whitney U untuk menilai tahap keberkesanan, kepuasan, atau intensiti sesuatu fenomena, sekaligus membantu dalam

Bil	Pernyataan	Nilai Min	Tahap
1	Saya merasa yakin dengan kewangan keluarga saya walaupun kos sara hidup meningkat.	2.23	Sederhana
2	Saya dapat memenuhi semua keperluan kewangan keluarga dengan pendapatan semasa.	2.14	Sederhana
3	Saya bimbang mengenai masa depan kewangan keluarga saya.	1.67	Rendah
4	Saya terpaksa meminjam untuk memenuhi keperluan kewangan sehari-hari.	2.83	Sederhana
5	Saya mampu membuat simpanan setiap bulan selepas membayar perbelanjaan bulanan.	2.34	Sederhana
6	Kos sara hidup yang tinggi telah menyebabkan saya mengalami tekanan kewangan, terutamanya dalam memenuhi keperluan harian dan perbelanjaan asas.	1.69	Rendah
7	Kesejahteraan kewangan saya terjejas disebabkan oleh harga barang keperluan asas yang meningkat.	1.53	Rendah
8	Saya sentiasa mempunyai wang yang cukup untuk membeli makanan berkualiti.	2.20	Sederhana
9	Kemampuan saya untuk berbelanja untuk hiburan atau barangan mewah sangat terhad.	1.71	Rendah
10	Kos sara hidup mengurangkan kemampuan saya untuk mencapai matlamat kewangan jangka panjang.	2.35	Sederhana

Jadual 2. Kesejahteraan Kewangan

Sumber: Soal Selidik 2025

merangka cadangan yang lebih berfokus dan berkesan.

DAPATAN HASIL KAJIAN

a) Analisis Kajian Deskriptif

Dalam bahagian ini ianya akan menjawab tiga persoalan kajian ini merangkum dapatan iaitu pertama kesejahteraan kewangan, kedua corak perbelanjaan harian dan ketiga melibatkan keberkesanan dasar kerajaan. Kajian menunjukkan keluarga Melayu B40 menghadapi tekanan kewangan sederhana dan mengamalkan perbelanjaan berjimat. Persepsi terhadap keberkesanan bantuan kerajaan juga sederhana, menandakan perlunya penambahbaikan dalam pelaksanaan dasar dan bantuan.

Berdasarkan Jadual 2, kesejahteraan kewangan keluarga Melayu B40 secara keseluruhan berada pada tahap sederhana ($M = 2.25$). Walaupun sebahagian responden masih mampu memenuhi

keperluan asas, kebanyakan menunjukkan tahap keyakinan kewangan yang rendah serta keperluan meminjam bagi menampung kos harian ($M = 2.83$). Tekanan kewangan akibat kenaikan harga barangan asas juga dilaporkan pada tahap rendah ($M = 1.69$), mencerminkan cabaran besar dalam mengekalkan kestabilan ekonomi isi rumah. Dapatan ini menunjukkan bahawa kesejahteraan kewangan keluarga B40 masih rapuh, terutamanya dalam menghadapi peningkatan kos sara hidup pasca pandemik COVID-19.

Bil	Pernyataan	Nilai Min	Tahap
1	Saya perlu berjimat cermat untuk memenuhi bajet harian saya.	3.62	Tinggi
2	Saya sering mencari barang yang berharga lebih murah untuk menjimatkan perbelanjaan.	3.68	Tinggi
3	Saya terpaksa mengurangkan pembelian barang-barang tidak perlu untuk mengurus kos harian.	3.61	Tinggi
4	Saya mengelakkan untuk keluar makan di luar disebabkan kos yang tinggi.	3.52	Tinggi
5	Saya cenderung membeli produk jenama kedai untuk penjimatan, namun saya juga membeli barangan berjenama untuk keperluan tertentu.	3.51	Tinggi
6	Harga barang keperluan mempengaruhi jumlah barang yang saya beli setiap bulan.	3.46	Tinggi
7	Perbelanjaan saya lebih difokuskan kepada keperluan asas berbanding hobi.	3.70	Tinggi
8	Situasi kewangan memaksa saya menangguhkan pembelian barangan mahal.	3.63	Tinggi
9	Saya perlu mencari alternatif lebih murah untuk barang-barang harian.	3.63	Tinggi
10	Harga barang asas yang tinggi mendorong saya untuk mengurangkan pembelian sesetengah barang.	3.62	Tinggi

Jadual 3. Corak Perbelanjaan Harian Keluarga Melayu B40

Sumber: Soal Selidik 2025

Berdasarkan Jadual 3, corak perbelanjaan harian keluarga Melayu B40 berada pada tahap tinggi ($M = 3.60$), menunjukkan kecenderungan yang jelas terhadap amalan berjimat cermat dan penyesuaian perbelanjaan dalam menghadapi kenaikan kos sara hidup. Item dengan nilai tertinggi ialah “Perbelanjaan saya lebih difokuskan kepada keperluan asas berbanding hobi” ($M = 3.70$), diikuti oleh “Saya sering mencari barang yang berharga lebih murah untuk menjimatkan perbelanjaan” ($M = 3.68$). Hal ini menggambarkan strategi penjimatan yang konsisten dalam kalangan responden. Dapatan ini selaras dengan kajian Ibrahim dan Kassim (2021) serta Ibhrim et al. (2024a), yang menunjukkan bahawa golongan B40 menyesuaikan corak perbelanjaan mereka secara adaptif untuk mengekalkan kestabilan ekonomi ketika berdepan peningkatan kos sara hidup.

Bil	Pernyataan	Nilai Min	Tahap
1	Bantuan kerajaan membantu meringankan beban kos hidup saya.	2.75	Sederhana
2	Program subsidi kerajaan amat memberi manfaat dalam mengurangkan perbelanjaan saya.	2.90	Sederhana
3	Saya mendapat sokongan yang mencukupi dari dasar kerajaan yang ada sekarang.	2.67	Sederhana
4	Dasar kerajaan membolehkan saya menghadapi kenaikan kos perkhidmatan asas dengan lebih mudah.	2.65	Sederhana
5	Program bantuan kerajaan tepat menyasar golongan berpendapatan rendah.	2.70	Sederhana
6	Bantuan kewangan kerajaan tiba tepat pada masanya dan mencukupi.	2.41	Sederhana
7	Polisi kerajaan bagi B40 terkini berkesan untuk menampung keperluan saya.	3.02	Tinggi
8	Saya menerima maklumat yang mencukupi tentang program bantuan kerajaan.	2.89	Sederhana
9	Bantuan kerajaan mengurangkan kebimbangan saya tentang kewangan.	2.82	Sederhana
10	Saya boleh menyatakan pandangan saya mengenai keberkesanan dasar kerajaan kepada pihak berwajib.	2.97	Sederhana

Jadual 4. Persepsi terhadap Keberkesanan Dasar Kerajaan

Sumber: Soal Selidik 2025

Berdasarkan Jadual 4, persepsi keluarga Melayu B40 terhadap keberkesanan dasar kerajaan berada pada tahap sederhana ($M = 2.78$). Walaupun terdapat pengiktirafan terhadap usaha kerajaan melalui polisi terkini bagi B40 ($M = 3.02$) yang dianggap berkesan dalam menampung keperluan asas, kebanyakan item lain seperti ketepatan penyasaran bantuan ($M = 2.70$) dan ketepatan masa bantuan kewangan ($M = 2.41$) menunjukkan tahap kepuasan yang sederhana. Ini mencerminkan bahawa pelaksanaan dasar dilihat masih belum sepenuhnya menepati keperluan sebenar isi rumah. Dapatan ini selaras dengan kajian Nor et al. (2021) dan Aziz & Hassan (2022) yang mendapati persepsi masyarakat terhadap keberkesanan dasar kerajaan cenderung bercampur akibat isu penyasaran penerima, masa agihan, serta komunikasi dasar di peringkat akar umbi.

b. Kajian Statistik Mann Whitney U

i. Kos Hidup Tinggi Menjadi Bebanan Kewangan

- H_0 (Hipotesis Nol): Tiada perbezaan yang signifikan dalam persepsi terhadap kos hidup tinggi sebagai bebanan kewangan antara penduduk bandar dan luar bandar.

- H_1 (Hipotesis Alternatif): Terdapat perbezaan yang signifikan dalam persepsi terhadap kos hidup tinggi sebagai bebanan kewangan antara penduduk bandar dan luar bandar.

i. Kawasan Bandar dan Luar bandar+ Kos Hidup Tinggi Menjadi Bebanan Kewangan

Aspek	Kawasan penempatan	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Sig
Kos hidup tinggi menjadi bebanan kewangan	Bandar	213	182	38842	17472	-2.77	0.01
	Luar bandar	177	211	37404			
	Total	390					

Jadual 5. Perbezaan Persepsi terhadap Kos Hidup Tinggi sebagai Bebanan Kewangan Mengikut Lokaliti

Nota: $p < 0.05$ menunjukkan perbezaan signifikan.

Sumber: Analisis SPSS dari soal selidik 2025

Berdasarkan Jadual 5, analisis ujian Mann–Whitney U menunjukkan bahawa terdapat perbezaan signifikan dalam persepsi terhadap beban kewangan akibat kos sara hidup yang tinggi antara penduduk bandar dan luar bandar ($U = 17,472$, $Z = -2.77$, $p = 0.01$). Responden luar bandar mencatatkan nilai purata kedudukan yang lebih tinggi (Mean Rank = 211) berbanding responden bandar (Mean Rank = 182), menunjukkan bahawa mereka lebih merasai tekanan kewangan akibat peningkatan kos sara hidup. Walaupun lazimnya kos sara hidup di bandar lebih tinggi, dapatan ini mencadangkan bahawa penduduk luar bandar lebih terkesan disebabkan tahap pendapatan yang lebih rendah, akses terhadap barangan berpatutan, serta peluang ekonomi yang lebih sempit. Hasil ini menyokong kajian Jaafar dan Ismail (2020) serta Ibrahim dan Kassim (2021) yang menjelaskan bahawa perbezaan struktur ekonomi dan akses perkhidmatan menjadi faktor utama kepada tekanan kewangan golongan B40. Oleh itu, hipotesis nol (H_{01}) yang menyatakan tiada perbezaan signifikan antara responden bandar dan luar bandar terhadap persepsi bahawa kos hidup tinggi menjadi bebanan kewangan ditolak. Dapatan ini membuktikan bahawa faktor lokaliti mempunyai pengaruh signifikan terhadap tahap kesejahteraan kewangan keluarga Melayu B40, khususnya dalam konteks tekanan akibat kenaikan kos sara hidup.

ii. Harga Barang Asas Tinggi Mengurangkan Pembelian Barangan Lain

- H_0 (Hipotesis Nol): Tiada perbezaan yang signifikan antara penduduk bandar dan luar bandar dalam pengaruh harga barang asas terhadap pembelian barangan lain.
- H_1 (Hipotesis Alternatif): Terdapat perbezaan yang signifikan antara penduduk bandar dan luar bandar dalam pengaruh harga barang asas terhadap pembelian barangan lain.

ii. Kawasan Bandar dan Luar Bandar+ Harga Barang Asas Tinggi Kurang Pembelian Seseengah Barangan Lain

Aspek	Kawasan penempatan	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Sig
Harga barang asas tinggi kurang pembelian sesetengah barangan lain	Bandar	213	204	43445	17047	-1.98	0.05
	Luar bandar	177	185	32800			
	Total	390					

Jadual 6: Corak Perbelanjaan Harian

Nota: $p < 0.05$ menunjukkan perbezaan signifikan.

Sumber: Analisis SPSS dari soal selidik 2025

Berdasarkan Jadual 6, analisis ujian Mann–Whitney U menunjukkan bahawa terdapat perbezaan signifikan pada aras kebolehterimaan minimum antara penduduk bandar dan luar bandar ($U = 17,047$, $Z = -1.98$, $p = 0.05$). Responden bandar mencatatkan nilai purata kedudukan (Mean Rank = 204) yang lebih tinggi berbanding responden luar bandar (Mean Rank = 185), menunjukkan bahawa penduduk bandar lebih terkesan oleh kenaikan harga barangan asas sehingga perlu mengurangkan pembelian barangan bukan keperluan. Dapatan ini mencerminkan corak perbelanjaan adaptif dalam kalangan keluarga B40 bandar, yang berhadapan dengan kos sara hidup lebih tinggi dan komitmen kewangan lebih besar. Hasil ini menyokong penemuan Ibrahim dan Kassim (2021) serta Ibhrim et al. (2024a) yang mendapati bahawa isi rumah bandar perlu menyesuaikan perbelanjaan harian dengan menangguhkan pembelian barangan mewah dan mengutamakan keperluan asas. Sehubungan itu, hipotesis nol (H_{02}) ditolak, menandakan bahawa terdapat perbezaan signifikan antara kawasan bandar dan luar bandar dalam kesan kenaikan harga barang asas terhadap corak perbelanjaan harian keluarga Melayu B40.

iii. Program Bantuan Kerajaan Menyasar Golongan Berpendapatan Rendah

- H_0 (Hipotesis Nol): Tiada perbezaan yang signifikan dalam persepsi keberkesanan program bantuan kerajaan antara penduduk bandar dan luar bandar.
- H_1 (Hipotesis Alternatif): Terdapat perbezaan yang signifikan dalam persepsi keberkesanan program bantuan kerajaan antara penduduk bandar dan luar bandar.

iii. Kawasan Bandar dan Luar Bandar + Program Bantuan Kerajaan Tepat Menyasar Golongan Berpendapatan Rendah.

Aspek	Kawasan penempatan	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Sig
Program bantuan kerajaan tepat menyasar golongan berpendapatan rendah.	Bandar	213	186	39665	16874	-1.89	0.06
	Luar bandar	177	207	36580			
	Total	390					

Jadual 7: Keberkesanan Dasar Kerajaan

Nota: $p < 0.05$ menunjukkan perbezaan signifikan.

Sumber: Analisis SPSS dari soal selidik 2025

Berdasarkan Jadual 7, analisis ujian Mann–Whitney U menunjukkan bahawa tiada perbezaan signifikan antara responden bandar dan luar bandar dalam persepsi mereka terhadap ketepatan program bantuan kerajaan ($U = 16\,874$, $Z = -1.89$, $p = 0.06$). Walaupun nilai p sedikit melebihi aras signifikan 0.05, nilai purata kedudukan menunjukkan responden luar bandar (Mean Rank = 207) mempunyai persepsi yang lebih positif berbanding responden bandar (Mean Rank = 186). Dapatan ini mencadangkan bahawa penduduk luar bandar lebih merasa program bantuan kerajaan menyasar kumpulan mereka dengan tepat, kemungkinan disebabkan struktur komuniti yang lebih rapat dan proses pengagihan bantuan yang lebih terurus. Sebaliknya, responden bandar mungkin merasakan bantuan kurang tersasar akibat kerumitan pengesahan kelayakan dan pelbagai lapisan sosioekonomi yang berbeza. Kajian Mohd Salleh et al. (2020) dan Ibhrim et al. (2022a), yang menjelaskan bahawa penyampaian bantuan kerajaan lebih berkesan di kawasan luar bandar kerana

saiz populasi yang lebih terurus dan identiti penerima yang lebih jelas. Oleh itu, hipotesis nol (H_{03}) tidak ditolak, menunjukkan bahawa persepsi terhadap keberkesanan program bantuan kerajaan adalah relatif serupa antara penduduk bandar dan luar bandar.

PERBINCANGAN KAJIAN

1. Kesejahteraan Kewangan

Dapatan kajian menunjukkan bahawa kesejahteraan kewangan keluarga Melayu B40 berada pada tahap sederhana ke rendah, dengan nilai min antara 1.53 hingga 2.83. Sebahagian besar responden menyatakan mereka masih mampu memenuhi keperluan asas, namun kerap terpaksa meminjam untuk menampung perbelanjaan harian dan sukar membuat simpanan bulanan. Hal ini mencerminkan bahawa kedudukan kewangan keluarga B40 masih rapuh dan mudah terjejas apabila berlaku peningkatan kos sara hidup. Penemuan ini selaras dengan kajian Jaafar dan Ismail (2020), Noor et al. (2022) serta Ibhrim et al. (2024) yang mendapati isi rumah B40 menghadapi tekanan kewangan berterusan akibat pendapatan yang tidak stabil dan kadar inflasi yang meningkat.

Keputusan ujian Mann–Whitney U ($p = 0.01$) juga menunjukkan wujud perbezaan signifikan antara penduduk bandar dan luar bandar, di mana responden luar bandar lebih merasa bebanan kewangan akibat kenaikan harga barangan asas. Dapatan ini menegaskan bahawa faktor lokaliti berperanan penting dalam menentukan tahap kesejahteraan kewangan keluarga B40. Pendapatan yang lebih rendah dan akses terhad kepada barangan mampu milik menyebabkan penduduk luar bandar lebih terkesan berbanding penduduk bandar. Oleh itu, intervensi dasar yang lebih tersasar mengikut lokaliti diperlukan bagi meningkatkan daya tahan ekonomi keluarga Melayu B40.

2. Corak Perbelanjaan Harian

Analisis deskriptif menunjukkan bahawa corak perbelanjaan harian keluarga B40 berada pada tahap tinggi (dengan nilai min 3.46 hingga 3.70), menunjukkan amalan penjimatan dan pengurusan perbelanjaan yang berhemat. Responden lebih memfokuskan perbelanjaan kepada keperluan asas berbanding kehendak, mengurangkan perbelanjaan tidak perlu serta menangguhkan pembelian barangan mahal. Dapatan ini selaras dengan kajian Ramli et al. (2019), Jaafar dan Ismail (2020) serta Ibrahim dan Kassim (2021) yang menunjukkan bahawa golongan B40 mengamalkan strategi perbelanjaan pragmatik bagi mengekalkan kestabilan kewangan dalam keadaan ekonomi yang mencabar.

Ujian Mann–Whitney U ($p = 0.05$) menunjukkan terdapat perbezaan signifikan antara penduduk bandar dan luar bandar dalam aspek pengaruh kenaikan harga barang asas terhadap corak perbelanjaan. Responden bandar lebih terkesan oleh kenaikan harga sehingga perlu mengurangkan pembelian barangan bukan keperluan. Hal ini mencerminkan tekanan kos hidup yang lebih tinggi di kawasan bandar serta keperluan untuk mengurus kewangan secara lebih strategik. Penemuan ini menyokong kajian Ibhrim et al. (2024a) dan Ibrahim & Kassim (2021) yang menjelaskan bahawa penduduk bandar B40 sering terpaksa menyesuaikan corak perbelanjaan harian akibat bebanan kos sara hidup yang tinggi.

3. Keberkesanan Dasar Kerajaan

Secara umum, persepsi keluarga Melayu B40 terhadap keberkesanan dasar kerajaan berada pada tahap sederhana (min 2.41 hingga 3.02). Walaupun sebahagian responden mengakui bahawa polisi kerajaan terkini berkesan menampung keperluan asas, majoriti masih melihat bantuan yang diberikan sebagai kurang menyeluruh dan tidak mencukupi dalam jangka panjang. Persepsi ini selari dengan penemuan Nor et al. (2021), Aziz dan Hassan (2022), serta Mohd Salleh et al. (2020) yang menyatakan bahawa isu penyasaran, ketepatan masa, dan transparansi pelaksanaan bantuan masih menjadi cabaran utama dalam dasar awam Malaysia.

Walaupun responden luar bandar menunjukkan tanggapan sedikit lebih positif berbanding responden bandar, ujian Mann–Whitney U menunjukkan tiada perbezaan signifikan antara kedua-dua kumpulan ($p = 0.06$). Ini bermakna persepsi terhadap keberkesanan program bantuan kerajaan adalah relatif serupa di kawasan bandar dan luar bandar. Dapatan ini menyokong kajian Ibhrim et al. (2022a) yang menjelaskan bahawa mekanisme penyampaian bantuan kerajaan lebih berfungsi di luar bandar namun masih kurang berimpak tinggi apabila dilihat dari sudut keberkesanan menyeluruh. Oleh itu, perlu ada penambahbaikan dalam strategi penyasaran dan komunikasi dasar agar bantuan kerajaan benar-benar menjangkau golongan B40 secara efisien dan berkekalan.

KESIMPULAN

Secara keseluruhan, hasil kajian menunjukkan bahawa keluarga Melayu B40 menghadapi tekanan kewangan yang berterusan namun menunjukkan keupayaan penyesuaian melalui corak perbelanjaan yang berhemat. Walaupun dasar kerajaan dilihat membantu, keberkesanannya masih perlu diperkukuh melalui penyasaran yang lebih tepat dan pendekatan yang disesuaikan mengikut lokaliti. Penemuan ini memberi implikasi bahawa dasar ekonomi dan sosial negara perlu mempertimbangkan perbezaan geografi dan struktur pendapatan bagi memastikan kesejahteraan kewangan golongan B40 dapat ditingkatkan secara mampan.

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**PENILAIAN DASAR PEKERTI 2022–2025: ANALISIS TERHADAP STRATEGI
PELAKSANAAN DAN PRESTASI PROGRAM**

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ABSTRAK

Isu kesihatan reproduktif dan seksual dalam kalangan golongan muda di Malaysia semakin membimbangkan dengan peningkatan risiko terhadap perlakuan seksual tidak selamat akibat kurangnya pengetahuan berkaitan seksualiti. Bilangan remaja yang terlibat dalam aktiviti reproduktif dan seksual berisiko seperti hubungan intim luar nikah, penyakit jangkitan seksual seperti HIV, perkahwinan bawah umur, pengguguran tidak selamat, dan pembuangan bayi semakin meningkat saban tahun. Senario ini telah menimbulkan persoalan tentang keberkesanan program dan strategi yang telah dilaksanakan di bawah Dasar PEKERTI. Walau bagaimanapun, sorotan ke atas kajian lepas menunjukkan bahawa kajian tentang pelaksanaan dasar berkaitan dengan pendidikan seksual dan seksualiti di Malaysia agak terhad. Justeru, kajian ini akan meneliti pelaksanaan dasar PEKERTI dengan memfokuskan kepada strategi dan cabaran dalam pelaksanaan dasar tersebut. Kajian ini menggunakan pendekatan kualitatif dan telah menemubual seramai lapan orang pegawai pelaksana dasar dan turut menjalankan pemerhatian ke atas Program PEKERTI. Dapatan kajian menunjukkan pelaksana dasar

berdepan dengan pelbagai cabaran seperti kumpulan sasaran yang besar, keterlihatan atau *visibility* program dan rendah dan kelestarian kewangan. Walau bagaimanapun, peserta kajian optimis terhadap Dasar PEKERTI dan mengharapkan agar usaha ini diteruskan walaupun ia mengambil masa yang lama untuk mencapai matlamat.

Kata Kunci: Dasar PEKERTI, Strategi Pelaksanaan Dasar, Prestasi Dasar.

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**BUILDING STRONG MINDS FROM MODEST MEANS: THE ROLE OF
FAMILY SUPPORT AND SELF-EFFICACY IN MATHEMATICS
ACHIEVEMENT AMONG B40 RURAL STUDENTS**

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ABSTRACT

This study investigated how family support, self-efficacy, and mathematics anxiety influence mathematics performance among 181 upper secondary students from a selected rural school in Borneo, focusing on those from the below 40 (B40) socioeconomic group. Grounded in Bandura's Social Cognitive Theory, the study proposed that family support impacts students' mathematics performance indirectly through psychological factors. Data were collected using validated questionnaires and analyzed using a multiple mediation model (PROCESS Model 6) with 5,000 bootstrapped samples, positioning family support as the independent variable, mathematics performance as the dependent variable, and self-efficacy and mathematics anxiety as mediators. Results revealed that family support significantly predicted self-efficacy ($\beta = 0.31, p < .001$) but not mathematics anxiety ($\beta = -0.04, p = .640$). In predicting mathematics performance, both self-efficacy ($\beta = 0.14, p = .004$) and mathematics anxiety ($\beta = -0.17, p = .001$) were significant predictors, while the direct effect of family support was marginal ($\beta = 0.10, p = .055$). The indirect effect of family support through self-efficacy was significant ($\beta = 0.04, 95\% \text{ CI } [0.013, 0.085]$), whereas the indirect effect through mathematics anxiety was not ($\beta = 0.006, 95\% \text{ CI } [-0.018, 0.038]$). The overall model explained 15.4% of the variance in mathematics performance. These findings suggest that among B40 rural students, family support enhances mathematics performance primarily by strengthening self-efficacy rather than by reducing anxiety, underscoring the importance of psychological empowerment and positive family engagement in improving mathematics performance.

Keywords: Family Support, Self-Efficacy, Mathematics Anxiety, Mathematics Performance, B40 Family, Mediation Analysis, Rural School.

206-151

MAKANAN SIHAT, ANAK SIHAT: MEMPERKASA IBU BAPA, DATUK NENEK & PENGASUH DALAM MEMBINA GENERASI MADANI

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ABSTRAK

Pemakanan awal kanak-kanak merupakan asas penting kepada pembentukan kesihatan, perkembangan kognitif, emosi dan prestasi akademik sepanjang hayat. Malaysia kini berdepan dengan isu malpemakanan yang kompleks dalam kalangan kanak-kanak iaitu kurang berat badan, susut, bantut, berlebihan berat badan dan obes yang wujud secara serentak. Laporan Tinjauan Kesihatan dan Morbiditi Kebangsaan, NHMS menunjukkan kadar bantut dalam kalangan kanak-kanak bawah lima tahun kekal membimbangkan, manakala prevalens berat badan berlebihan dan obes dalam kalangan kanak-kanak sekolah juga semakin meningkat. Pada masa yang sama, Statistik Jabatan Statistik dan Perangkaan Malaysia (DOSM) dan dapatan kajian LPPKN menunjukkan semakin ramai kanak-kanak kecil dijaga oleh datuk-nenek atau pengasuh memandangkan peningkatan penyertaan wanita dalam tenaga kerja. Perbezaan tahap pengetahuan dan amalan pemakanan antara ibu bapa dan penjaga memberi kesan terhadap amalan pemakanan kanak-kanak.

Pembentangan ini mengariskan (1) bukti dan trend status pemakanan kanak-kanak di Malaysia berdasarkan data nasional; (2) cabaran keluarga moden dalam memastikan amalan pemakanan sihat, dan (3) strategi praktikal di rumah bagi menyokong pemakanan sihat untuk seluruh keluarga - rutin makan keluarga, perancangan dan penyediaan makanan, penglibatan kanak-kanak dalam penyediaan makanan, pemilihan snek sihat yang mudah, serta komunikasi berkesan antara ibu bapa dan penjaga. Gabungan pendekatan berasaskan bukti dan amalan praktikal yang sesuai dengan budaya keluarga Malaysia, diharap dapat memperkasakan ibu bapa, datuk nenek dan pengasuh dalam menyokong pembentukan tabiat pemakanan sihat sebagai asas melahirkan Generasi Madani yang sihat, berdaya tahan dan mampu menyumbang kepada kesejahteraan negara.

Kata Kunci: Pemakanan Kanak-Kanak, Pemakanan Sihat, Ibu Bapa Bekerja, Datuk Nenek, Pengasuh, Malpemakanan, Kurang Berat Badan, Susut, Bantut, Berlebihan Berat Badan, Obes, Strategi Pemakanan Sihat Di Rumah.

Isu Gender, Pemerkasaan Wanita dan Keluarga, Penjagaan serta Pengabaian Kanak-kanak dan Warga Emas

006-002

**THE INFLUENCE OF FAMILY FUNCTIONING ON SUBJECTIVE WELL-BEING
AMONG UNDERGRADUATE STUDENTS**

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ABSTRACT

A myriad of studies has underscored the critical role of family functioning in influencing subjective well-being (SWB). This study aimed to investigate the impact of family functioning on SWB among undergraduate students at Universiti Malaysia Sabah (UMS), as well as to examine potential gender differences in family functioning and SWB. Additionally, the study explored the effects of students' faculty and living areas on SWB. A total of 76 undergraduate students from UMS's main campus participated in the study. The McMaster Family Assessment Device (FAD) was employed to measure family functioning, while the Subjective Well-Being Scale was administered to assess SWB. The results demonstrated a significant positive relationship between family functioning and SWB. However, no significant differences were found between genders in family functioning and SWB, nor were there significant differences in SWB based on faculty or living area. These findings highlight the significant role of family functioning in influencing university students' SWB and suggest directions for future research and interventions.

Keywords: Family Functioning, Subjective Well-Being, University Students, Gender Difference, Rural-Urban Differences.

007-003

MAPPING GENDERED SAFETY IN SOLO FEMALE TRAVEL: A SCOPING REVIEW OF COMPUTATIONAL APPROACHES AND DIGITAL DISCOURSE

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ABSTRACT

As solo female travel continues to rise globally, safety concerns remain a critical issue shaped by intersecting factors of gender, culture, and geography. Digital platforms, including TripAdvisor and Instagram, have emerged as indispensable virtual spaces where women share travel experiences and seek peer-based advice, creating an expansive yet largely untapped repository of safety-related user-generated content. Academic research, however, predominantly relies on traditional qualitative methodologies, revealing a significant methodological void in applying scalable computational techniques, particularly those rooted in Natural Language Processing (NLP), to comprehensively map and understand gendered safety discourse at scale. Guided by the PRISMA-ScR framework, this scoping review systematically identified, categorised, and critically analysed 45 eligible peer-reviewed studies published between 2020 and 2025 addressing the intersection of solo female travel, digital safety discourse, and computational techniques. Through thematic charting, the review uncovered key research patterns, methodological approaches, platform-specific analyses, and geographical concentrations. The findings highlight three core research gaps: first, limited use of advanced NLP techniques in gendered safety contexts; second, a strong Western-centric geographical focus; and third, inadequacy in comparative analyses across various social media platforms. These gaps underscore the need for inclusive, interdisciplinary approaches bridging tourism studies, gender theory, and computer science, contributing to SDG 5 (Gender Equality) and SDG 11 (Sustainable Cities and Communities).

Keywords: Solo Female Travel, Gendered Safety, Scoping Review, Social Media, Social Ecological Model.

INTRODUCTION

The global travel landscape has undergone a profound transformation, with solo female travel emerging as a significant and rapidly expanding segment within the tourism industry (Abdul Shukor & Kattiyapornpong, 2024; Chen et al., 2023; Ghadban et al., 2023; Otegui-Carles et al., 2022). This surge is driven by a combination of social, cultural, and personal factors, reflecting a growing desire among women for empowerment, independence, and unique experiences that challenge traditional societal norms and expectations (Maiurro & Brandão, 2024a; Sebova et al., 2021). Digital platforms, including social media and online review sites, have become indispensable tools for these travellers, serving as vital channels for planning journeys, sharing safety-related advice, recounting incidents, and fostering supportive communities (Basu Chaudhuri, 2020; Hamid et al., 2021; Silva et al., 2020; Zhou et al., 2024). These digital spaces not only capture individual narratives but also contribute to broader discourses surrounding gender, mobility, and public safety.

Despite the increasing popularity and empowering aspects of solo female travel, persistent and often heightened safety concerns remain a critical barrier. Issues such as harassment, theft, gender-based violence, and cultural sensitivities frequently shape the experiences and decisions of solo female travellers, concerns that are further amplified in regions with differing gender norms or legal protections (Anış, 2023; Nematpour et al., 2024; N. Singh & Aier, 2024). While platforms such as TripAdvisor, Instagram and YouTube have become rich repositories of user-generated content offering insights into these safety concerns, existing research has predominantly relied on qualitative approaches such as thematic analysis (Basu Chaudhuri, 2020; Brugulat & Coromina, 2021; Elnur & Akgün, 2025; Herjanto et al., 2020; Nguyen & Hsu, 2022; Nikjoo et al., 2021). This underscores a significant gap, particularly from a computational lens, leaving the potential of AI-driven approaches such as aspect-based sentiment analysis (ABSA) and natural language processing (NLP) untapped for large-scale, automated pattern detection.

This scoping review seeks to bridge the gap between computational methods and gender-sensitive tourism research, offering a novel framework for analysing large-scale textual data. The findings are expected to enhance travel safety communication and contribute to the design of inclusive tourism policies aligned with the United Nations' Sustainable Development Goals (SDGs), particularly Goals 5 (Gender Equality) and 11 (Sustainable Cities). The subsequent sections of this review detail the methodological approach, present key findings on dominant safety themes, methodological trends, and platform and regional coverage, and propose a conceptual model to interpret the complex interplay of factors influencing gendered safety in digital discourse.

LITERATURE REVIEW

This section discusses the digital discourse and gendered safety. It also presents the justification, along with the research questions that motivated this review.

DIGITAL DISCOURSE AND GENDERED SAFETY

Social media platforms and travel review sites play a crucial role in shaping the safety landscape for solo female travellers. They provide spaces for sharing experiences, raising awareness, and advocating for safety measures. Platforms such as Twitter, Facebook, and Instagram serve as powerful tools for disseminating information, mobilising collective action, and fostering a culture

of accountability and responsibility towards women's safety. Through hashtags, campaigns, and personal narratives, they also serve as a source of empowerment for women to navigate and negotiate public spaces more safely.

One of the most significant contributions of social media is its role in raising awareness about the risks faced by solo female travellers. The #MeToo movement, for instance, has highlighted gender-based violence in tourism, emphasising the need for safer travel spaces for women (E. C. L. Yang et al., 2020). Similarly, C. L. Yang (2017) highlights that social media platforms and travel review sites allow solo female travellers to expose risks such as theft, assault, or cultural misunderstanding. Female travellers frequently share instances of harassment and abuse on platforms such as Twitter, Facebook and Instagram to highlight the challenges they face in public spaces and online (K et al., 2022).

Beyond awareness, social media serves as a repository of information where travellers access recommendations and safety tips. Platforms such as Twitter leverage electronic word-of-mouth, allowing women to make informed decisions about destinations, accommodations, and safety considerations. These insights often include reflections on personal growth and self-discovery during travel (Chandrakala et al., 2024; Noyen & Wortmann, 2014). Travel blogs and personal narratives, such as Shivya Nath's "The Shooting Star", further empower women by providing relatable accounts of safe and meaningful travel experiences. Through this collective sharing of travel plans and recommendations, digital platforms foster a sense of community and support among female travellers (Valaja, 2018).

Technological innovations have transformed the safety infrastructure for female travellers. Noyen & Wortmann (2014) present Travel Safety, a mobile application which leverages Twitter to source travel risk information to enhance the safety awareness of all travellers, including solo female travellers. Similarly, Navi.io is a mobile application that utilises crowdsourced data to enhance safety perceptions and experience for women travelling alone in public spaces (Huang & West, 2023). These platforms bridge the gap between online narratives and offline safety by offering proactive support mechanisms.

However, the effectiveness of digital discourse on social media platforms and travel review sites is limited by several challenges. Persistent issues such as online harassment, lack of responsive platform features, and underreporting of incidents undermine their reliability (K et al., 2022; Ashok et al., 2023). Additionally, the digital divide, characterised by unequal access to the internet and mobile technologies, restricts the accessibility of these tools, especially for women in marginalised or under-connected regions (Huang & West, 2023).

Nevertheless, digital platforms remain instrumental in advancing women's safety. They continue to serve as catalysts for innovation, advocacy, and empowerment. As the technological landscape evolves, there is a critical need to assess how digital discourse and computational tools may be optimised to address persistent gendered safety concerns. This review contributes to that goal by mapping existing approaches and highlighting future directions for research and practice in solo female travel safety.

OBJECTIVES OF THE REVIEW

Building on the discussion of digital discourse and technological innovation, this section shifts focus to the conceptual and theoretical frameworks that shape the understanding of solo female

travel. Specifically, it explores how the empowerment models and feminist media theory provide a lens for analysing the lived experiences of women who travel alone.

Solo female travel is increasingly recognised as a form of empowerment, offering women the opportunity to challenge traditional gender roles and assert autonomy. Within feminist media theory, travel is conceptualised as a heterotopic space, a site of resistance, transformation, and renegotiation of social norms. This framing aligns with empowerment models that underscore travel's potential to foster self-confidence, independence, and critical life skills.

For many women, solo travel becomes a means of transcending societal and cultural constraints. This is particularly evident among travellers from conservative or patriarchal contexts, such as Iranian and Chinese women, who use travel to assert independence in the face of religious or sociocultural limitations (Nematpour et al., 2024; Chen et al., 2023). Empirical studies consistently report that solo female travel contributes to increased self-efficacy, a sense of liberation, and enriched interpersonal competencies (Silva et al., 2020; Wilson & Harris, 2004).

Narratives and memoirs further reinforce this ethos of empowerment. Works such as Shivya Nath's "The Shooting Star" illustrate how travel helps shift the narrative from victimhood to agency, portraying journeys as acts of self-realisation and feminist resistance (Talukdar & Tripathi, 2023). Similarly, Hsu (2010) argues that solo travel allows women to disrupt internalised gender expectations and reclaim autonomy through mobility.

Nevertheless, empowerment through travel is not without its complications. Female travellers continue to confront safety risks, cultural stigma, and structural discrimination. These challenges are amplified for Muslim women, who often face heightened scrutiny and must navigate religious and cultural expectations (Nematpour et al., 2024; Luong, 2024). Risk, therefore, emerges as a recurring theme, with women balancing the desire for independence against the need for vigilance in gendered and often sexualised tourism environments (Yang, 2017).

Cultural and gender norms play a decisive role in shaping how women experience and negotiate travel. In countries like China, traditional values still inhibit widespread acceptance of solo female travel despite broader social progress (Chen et al., 2023). Similarly, Indonesian Muslim women employ strategic negotiation to navigate structural limitations (Luong, 2024). These patterns underscore the multifaceted nature of empowerment, which is constantly negotiated through individual agency and contextual constraints. All of these motivated the review, in answering the following notable research questions:

1. What is the dominant safety-related themes and narratives in digital discourse about solo female travel from 2020 to 2025?
2. What computational and qualitative methodologies have been used to analyse safety-related digital content on solo female travel?
3. What are the identifiable gaps in platform coverage, regional focus, and methodological integration in existing studies on digital discourse and solo female travel?

METHODOLOGY

This scoping review follows the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) framework to ensure methodological rigour and transparency (Alamgir et al., 2022; Mattos et al., 2023; Tricco et al., 2018). The review

systematically mapped academic literature published between January 2020 and May 2025, focusing on gendered safety in solo female travel as discussed within digital discourse.

A structured keyword search strategy was adopted, targeting three interrelated thematic areas: solo female travel, safety and risk, and digital discourse. Keywords used for each theme included: “solo female travel” OR “female traveller”; “safety” OR “security” OR “risk”; and “social media” OR “online review” OR “user-generated content.” These were combined using Boolean operators to form the following search string:

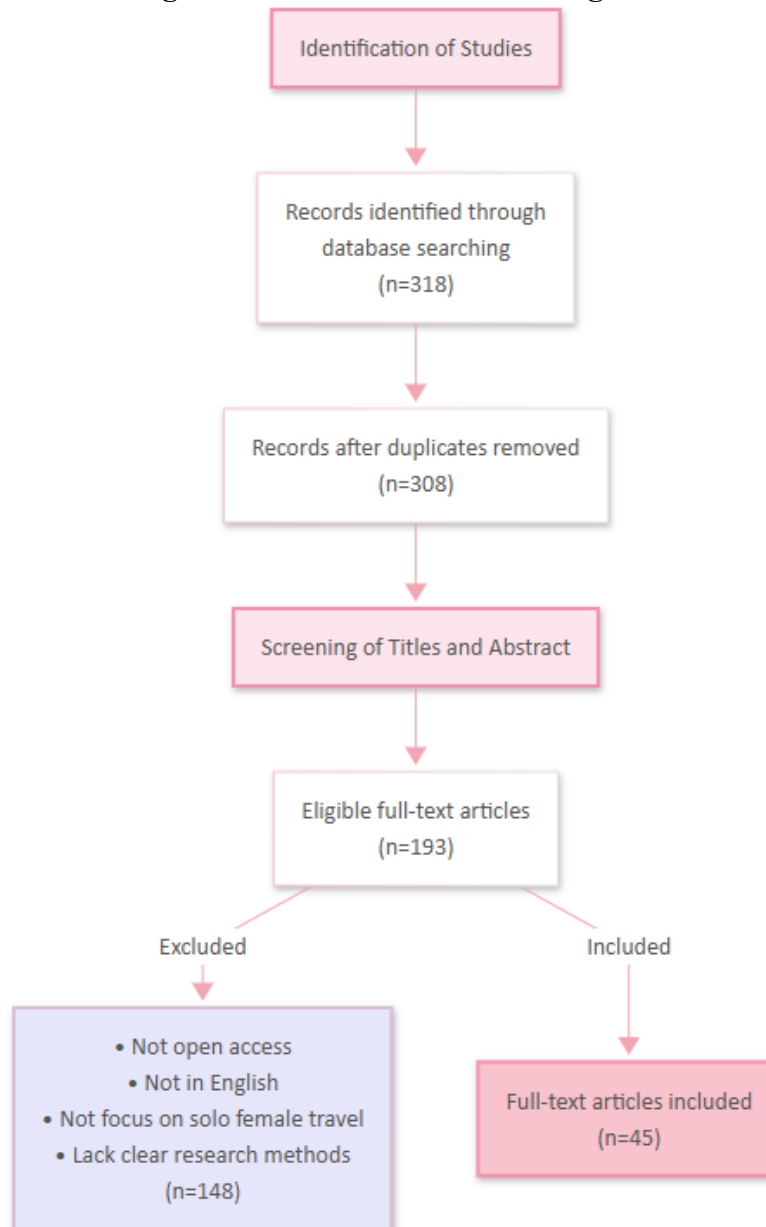
(“solo female travel” OR “female traveller”) AND (“safety” OR “security” OR “risk”) AND (“social media” OR “online review” OR “user-generated content”)

To ensure relevance and focus, specific inclusion and exclusion criteria were applied. Studies were included if they: (1) focused on solo female travel and safety; (2) analysed digital discourse, including content from social media, review platforms, or other forms of user-generated content; (3) employed either qualitative or computational methods; (4) were published between January 2020 and May 2025; and (5) were written in English. Studies were excluded if they did not specifically address female travellers, were non-peer-reviewed, or if their full texts were inaccessible. This filtering ensured academic integrity while maintaining methodological consistency and thematic relevance across the selected studies.

The initial database search returned a total of 318 records. After duplicates were removed, a preliminary screening of titles and abstracts was performed, resulting in 193 studies selected for full-text assessment. The inclusion and exclusion criteria were then systematically applied, resulting in a final selection of 45 studies included in the review. This process adhered to the PRISMA-ScR flow diagram structure as illustrated in Figure 1, which enhances the transparency and replicability of the review process.

To facilitate systematic analysis, a data charting form was developed and used to extract relevant variables from each study. These variables included author(s), year of publication, study location, research methodology, type of digital platform analysed, thematic focus, and key findings or contributions. Both deductive and inductive coding approaches were employed to synthesise the data. Deductive codes were informed by pre-identified themes aligned with the research questions, while inductive coding enabled the discovery of emergent patterns and underexplored dimensions. NVivo was utilised to support the organisation, coding, and thematic analysis of the textual data, as also supported by Dawborn-Gundlach & Pesina (2015) and England-Kennedy (2008). This integrative approach allowed for a nuanced understanding of how digital discourse reflects and shapes gendered perceptions of safety in solo female travel. It also revealed methodological, thematic, and regional research gaps, thereby offering directions for future investigation.

Figure 1. PRISMA-ScR Flow Diagram



FINDINGS AND DISCUSSIONS

This section presents and discusses the key findings of the scoping review according to three overarching research questions: (1) What are the dominant safety-related themes and narratives in digital discourse about solo female travel from 2020 to 2025? (2) What computational and qualitative methodologies have been used to analyze safety-related digital content on solo female travel? (3) What are the identifiable gaps in platform coverage, regional focus, and methodological integration in existing studies on digital discourse and solo female travel?

DOMINANT SAFETY NARRATIVES IN DIGITAL DISCOURSE (RQ1) GENDERED SAFETY

Gendered safety in the context of solo female travel refers to the heightened awareness of gender-specific risks that shape women's travel experiences (Kaba, 2021). This theme consistently emerged across digital discourse, including travel blogs, social media posts, and user-generated reviews. Female travellers are often hyper-aware of threats such as harassment, surveillance, and gender-based violence, which disproportionately affect them compared to male travellers (Basu Chaudhuri, 2020; Ghadban et al., 2023; Nazir et al., 2021). Chaney et al. (2024) discover that women are more focused on their surroundings, especially bushes, dark areas, and high entrapment zones due to their broad, internalised experience with fear of violent and sexual crimes.

This sense of vulnerability is especially pronounced at night. Numerous studies report that solo female travellers actively avoid going out for dinner in the evening due to fears of unwanted male attention, sexual harassment, or even rape (Brown et al., 2020; Hosseini et al., 2022; Jonas, 2022; Nikjoo et al., 2021; Osman et al., 2020; Sürme, 2022). This constant vigilance results in behaviour modification. Women often reroute their journeys to avoid isolated streets, alleyways, and even hotel corridors and elevators, which are perceived as potential sites of gendered violence (Hong-Jiao & Chi-Hua, 2020). Even crowded public spaces are not necessarily safe, as perpetrators may use the anonymity of the crowd to commit acts of sexual harassment unnoticed (Rahjasa et al., 2024). Other threats include scams by taxi and tuk-tuk drivers or unethical behaviour from tour guides, while not exclusively gendered, are often perceived through a heightened lens of vulnerability by female travellers (Brugulat & Coromina, 2021).

These safety-driven compromises often reduce women's enjoyment of travel and limit opportunities for authentic local interaction and cultural immersion. Travel plans are often structured to minimise risk exposure, sometimes at the cost of spontaneity or deeper immersion in the local environment (Otegui-Carles et al., 2022). Women reported anxiety, fear, and worry associated with the need to continuously remain vigilant (Rahjasa et al., 2024; Schwab, 2019). Although urban safety infrastructure, such as lighting, emergency buttons, and surveillance, has improved in many destinations, the perception of male-dominated public spaces remains unchanged, and women continue to report feelings of unsafety despite physical safeguards (Chaney et al., 2024).

Despite these risks, some studies frame solo female travel as a space of agency and feminist resistance (Talukdar & Tripathi, 2023). In the case of Iranian women, solo travels are not merely recreational but deeply political, serving as expressions of autonomy and opposition to patriarchal norms (Nikjoo et al., 2021). In navigating restrictive gender norms, these women engage in strategic acts of compliance and defiance to reclaim mobility and agency. They adapt their travel choices, opting for public transport over walking alone (Lindkvist, 2024), dressing modestly to avoid unwanted attention (Otegui-Carles et al., 2022; Schwab, 2019), and establish online communities to support and empower other solo female travellers (Nematpour et al., 2024).

EMOTIONAL SAFETY

Emotional safety refers to the psychological comfort and security that women experience while travelling alone (Basu Chaudhuri, 2020; Kaba, 2021; Maiurro & Brandão, 2024b; Su & Wu, 2020). Across various digital narratives and empirical studies, fear consistently emerges as a defining emotional state in the solo female travel experience. A significant concern is the persistent threat

of harassment, assault, and unwanted attention, which not only influences women's physical behaviour but also leaves lasting emotional consequences.

Geoghegan (2020) argues that fear has been so deeply normalised in women's travel experiences that it is no longer viewed as an exceptional constraint, but an expected condition. Many women learn to navigate their surroundings daily with what has been termed a "mental map of fear." This is especially true for Asian women, who often face racialised and sexualised perceptions while travelling. Nguyen & Hsu (2022) state that Southeast Asian solo female travellers frequently feel vulnerable under the sexualised and suspicious gaze of others, especially men, which heightens their emotional insecurity in unfamiliar spaces. Some women report lasting trauma from travel-related incidents. Rahjasa et al., (2024) recorded solo female travellers, having been harassed, scammed, or otherwise exploited, developed a deep-seated fear that discouraged them from travelling alone again. In some instances, the emotional toll of being swindled stripped them of confidence and created a sense of restlessness or insecurity, transforming what should be an empowering journey into a distressing experience.

Fear of loneliness also surfaced as a notable emotional challenge, especially among younger or first-time solo female travellers (Dresler, 2024). Some participants expressed anxiety about the inability to connect with others or having no one to turn to in adverse situations (Dresler, 2025). These concerns ranged from feeling isolated and excluded from social experiences to more serious fears, such as lacking support if assaulted or getting lost in an unfamiliar place (Brugulat & Coromina, 2021; Tukenmez, 2022).

Despite these emotional challenges, many women describe solo travel as a deeply rewarding and transformative experience. For some, it fosters greater self-confidence, resilience, and a renewed sense of independence (Hamid et al., 2021; Herjanto et al., 2020; Liu-Lastres et al., 2021; Nikjoo et al., 2021; Otegui-Carles et al., 2022). Travelling alone offers a unique opportunity for women to reflect and achieve personal growth. Many solo female travellers frame their journeys as a way to challenge themselves, whether through hiking, trekking, or other demanding activities, and to affirm their autonomy and capabilities (Pitanatri et al., 2025). Moreover, emotional comfort is often reinforced by acts of kindness from others. Hotel reviews and online testimonials frequently mention how helpful gestures from locals or staff, such as offering assistance, reassurance, or emotional support, contribute to a traveller's sense of safety and trust (Herjanto et al., 2020).

GEOSPATIAL SAFETY

Geospatial safety is inferred as how solo female travellers manage their physical surroundings, plan travel routes, and time their activities to enhance personal safety while navigating unfamiliar environments. This involves not only selecting familiar or well-populated routes and avoiding risky areas at night, but also using digital tools and technologies to secure accommodations and access real-time guidance (Basu Chaudhuri, 2020). Geolocation technologies increasingly assist in tracking movement, enhancing situational awareness, and enabling rapid response in case of emergencies (Jeffry et al., 2023; Suriyakrishnaan et al., 2024)

The perceptions of safety for solo female travellers vary significantly across regions. Southeast Asia is viewed as relatively safe and well-prepared for tourism. However, issues such as unreliable, overcrowded, and slow public transportation systems remain common complaints. The risk of terrorism is also low. Nevertheless, a solo female traveller admits that their travel decisions are

mostly influenced by practical factors like affordability, accessibility, and time constraints rather than political unrest or safety threats (Brugulat & Coromina, 2021).

Despite its general safety, Phnom Penh and Sihanoukville in Cambodia, Nong Khiaow in northern Laos, Sabah in Malaysia, and Bangkok in Thailand were frequently cited as unsafe due to high incidences of theft, kidnapping, and the presence of intoxicated individuals and sex work-related activities. In some instances, local poverty and weak law enforcement were seen as contributing to increased risk. Vietnamese travellers, for example, reported experiences of corruption and robbery in their home country, and some were even mistaken for sex workers when travelling abroad, such as in Singapore (Nguyen & Hsu, 2022). These perceptions are amplified for Asian female travellers who may be subjected to hypersexualised stereotypes in certain regions, further complicating their sense of geospatial safety (Geoghegan, 2020).

Ethnicities also influence how female travellers are treated in different geographies. In some cases, Western solo female travellers receive preferential treatment, particularly in parts of East Asia, such as China (Rahjasa et al., 2024). This dynamic adds another layer to the geospatial navigation of safety, as women must not only consider crime or infrastructure quality, but also how their appearance, nationality, or perceived socio-economic status might affect their safety in certain places. Conversely, destinations like Morocco and South Africa have received positive reviews from solo female travellers for the quality of local hospitality and the perceived safety of tourist zones (Herjanto et al., 2020). However, even in such cases, women continue to rely on strategic planning, such as booking reputable accommodations, choosing group tours for certain excursions, and avoiding poorly lit or isolated areas, to maintain a sense of control over their safety.

CULTURAL NORMS AND SAFETY

Cultural norms refer to the shared expectations and rules that shape behaviour within a society. For solo female travellers, these norms strongly influence their travel choices, behaviours, and perceptions of safety. They also dictate acceptable conduct, attire, and social interactions, imposing both subtle and explicit constraints on their freedom (Kaba, 2021; Nematpour et al., 2024; Su & Wu, 2020). These norms manifest both at home and at the destination, shaping how women plan, perceive, and experience their journeys.

In many conservative societies, particularly in parts of Asia, the Middle East, and Muslim-majority countries, solo travel by women may still be viewed as deviant or inappropriate. Such perspectives often lead to familial disapproval, social stigma, and even legal or institutional restrictions (Nguyen & Hsu, 2022; Osman et al., 2020). For example, in Iran, women are often required to travel with a male guardian (mahram) or obtain formal permission from a father or husband to travel independently.

The aforementioned institutional constraints are further complicated by societal expectations around modesty, behaviour, and gender roles. Muslim women wearing the hijab have reported facing Islamophobic attitudes and cultural stereotyping abroad, prompting some to adapt their clothing to avoid discomfort or judgment (Otegui-Carles et al., 2022). This illustrates a form of double discrimination, where solo female travellers are marginalised both for their gender and their cultural or religious identity. Such experiences add complexity to their navigation of safety and autonomy while travelling.

Southeast Asian solo female travellers, in particular, encounter patriarchal expectations both at home and abroad. They are often stereotyped as submissive or vulnerable, and their decision to

travel alone is perceived as risky or inappropriate. Many opt for local or neighbouring destinations for their first solo trip to minimise confrontation and obtain familial approval. Some women, however, feel compelled to hide their solo travel plans from their families by buying tickets in advance or claiming to travel with friends to avoid disapproval (Nguyen & Hsu, 2022; Osman et al., 2020). Support from family tends to be more common among women with siblings who have travelled solo or parents who themselves have travel experience. Media portrayals reinforce the idea that women are inherently at risk and must be protected, contributing to a culture of fear and self-censorship (Brugulat & Coromina, 2021).

COLLECTIVE SAFETY PRACTICES

Solo female travellers often adopt community-driven strategies to enhance their safety and confidence while travelling. These practices, referred to as collective safety practices, go beyond individual precautions and draw upon shared knowledge, peer support, and social solidarity. These practices are essential coping mechanisms that help solo female travellers mitigate risk, foster belonging, and promote empowerment through communal wisdom.

One common strategy is the use of digital communities, such as Facebook groups, travel blogs and forums, and online videos, which are frequently used to exchange safety tips, destination reviews, and personal experiences. These spaces allow women to access real-time advice, find travel companions, and build a sense of connectedness with other solo female travellers. These platforms serve as trusted spaces for personalised tips, shared experiences, and real-time recommendations. As Dresler (2025) notes, such digital interactions offer reassurance, guidance, and emotional support, helping travellers feel less isolated and more prepared. Similarly, in-person exchanges, especially in hostels and shared accommodations, also provide reliable and valuable safety information. Word-of-mouth conversations among travellers often shape key decisions about itineraries, transportation modes, and accommodation choices (Brugulat & Coromina, 2021). Osman et al. (2020) state that women reported avoiding destinations flagged as dangerous in online forums.

In addition to information sharing, behavioural safety routines are a common aspect of collective safety practices. These include choosing taxis over walking alone at night, keeping valuables in secure locations, even sleeping bags, avoiding alcohol or risky social situations, and sharing location updates with trusted contacts back home. Some travellers also reported wearing modest clothing or carrying self-defence items like pepper spray or taser guns as part of their preparedness (Brugulat & Coromina, 2021; Nguyen & Hsu, 2022; Osman et al., 2020; Rahjasa et al., 2024). These measures are often shared among women through community stories and cautionary advice, forming an informal but widely understood code of conduct.

METHODOLOGICAL TRENDS IN SAFETY-FOCUSED RESEARCH (RQ2)

A review of the 45 selected studies reveals that 73% of the studies relied on in-depth interviews and thematic analysis to explore the lived experiences, perceptions, and strategies of solo female travellers in overcoming sociocultural, practical, personal and spatial constraints during travel. These qualitative approaches provide context-rich insights into the gendered dimensions of safety across various cultural and geographical settings. The thematic analysis of travel blogs (Basu Chaudhuri, 2020), and social media narratives via Instagram (Nikjoo et al., 2021) and TripAdvisor (Dresler, 2024, 2025; Herjanto et al., 2020; Zhou et al., 2024) provide unique insights into how

digital storytelling shapes safety perceptions and identity expression. Basu Chaudhuri (2020) offered a close reading of personal narratives to reveal how the act of blogging enables female travellers to reclaim narrative agency, resist gendered stereotypes, and promote self-empowerment. Similarly, Nikjoo et al. (2021) highlighted the use of digital platforms to advocate for women's rights while navigating and challenging gender-based limitations in both domestic and global contexts, further reflecting the intersection of identity, culture, and digital resistance. Quantitative methods appeared in 13% of the studies, primarily using structured questionnaires to investigate motivations, travel intentions, safety perceptions, and adaptation strategies (Liu-Lastres et al., 2021; Meliana & Yudhistira, 2025). While valuable for identifying general trends, they are often limited in their ability to capture the depth, emotional, and situational aspects of solo female travel experiences that qualitative methods more effectively reveal.

Literature reviews (11%), including systematic, scoping, and bibliometric studies, were used to synthesise existing scholarship and establish conceptual frameworks related to women's travel safety, focusing on the risks and constraints of solo female travellers. Notably, only one study employed a computational approach, applying text classification on TripAdvisor reviews. The study used the BART Large Zero Shot model to identify solo female travellers and classify motivations based on Maslow's hierarchy of needs and Plog's psychographics model (Pitanatri et al., 2025). The absence of advanced techniques such as aspect-based sentiment analysis, topic modelling, or natural language processing (NLP) indicates a critical methodological gap in scalable, data-driven analysis of digital content.

This methodological imbalance is depicted in Table 1, revealing a critical gap in the integration of scalable, AI-driven tools in safety discourse research. Such integration would enable researchers to scale thematic insights from large volumes of user-generated content while preserving context, ultimately advancing the methodological sophistication of solo female travel research.

Table 1: Methodologies Used in Reviewed Studies (2020-2025)

Methodology Type	Frequency	Description	Studies
Qualitative	33	Interviews and thematic analysis of blogs or reviews	(Al-Souri & Youssef, 2024; Basu Chaudhuri, 2020; Beeth & Schänzel, 2024; Brugulat & Coromina, 2021; Chhajer et al., 2022; Dresler, 2024, 2025; Elnur & Akgün, 2025; Geoghegan, 2020; Ghadban et al., 2023; Ghai & Chowdhri, 2022; Herjanto et al., 2020; Hoffman & Bednar, 2023; Iqbal & Woodcock, 2023; Leith, 2020; Nguyen & Hsu, 2022; Nikjoo et al., 2021; Osman et al., 2020; Peiris et al., 2022; Rahjasa et al., 2024; Rivera et al., 2024; Sapna et al., 2023; Somasiri et al., 2022; Sürme, 2022; Teng et al., 2023; Tominaga, 2023; Tukenmez, 2022; E. C. L. Yang et al., 2025; Zhou et al., 2024)
Quantitative	6	Structured questionnaires	(Batool et al., 2024; Chaney et al., 2024; Gajić et al., 2025; Kamal et al., 2023; Liu-Lastres et al., 2021; Meliana & Yudhistira, 2025)

Literature Review	5	Bibliometric, scoping, and systematic literature reviews	(Hamid et al., 2021; Kolkesen & Özdemir, 2025; Otegui-Carles et al., 2022; M. K. Singh & Prammar, 2023; Zhang et al., 2024)
Computational	1	Text classification	(Pitanatri et al., 2025)

PLATFORM AND REGIONAL COVERAGE (RQ3)

Only a limited number of studies (22%) analysed user-generated content from digital platforms such as TripAdvisor, Instagram, YouTube, and travel blogs, as depicted in Table 2. To further synthesise this research landscape, Figure 2, an Alluvial Diagram, maps the intricate relationships between these digital platforms, the methodological approaches employed, and the safety themes explored. This visualisation not only uncovers the dominant analytical pathways in existing studies but also highlights underexplored intersections, representing valuable opportunities for future research.

Table 2: Platform Usage and Methodological Trends

Platform	No. of Studies	Methodological Focus	Key Thematic Insights
TripAdvisor	5	Thematic Analysis, Text Classification	Hotel and destination preferences, travellers' interaction and experiences
Instagram	3	Thematic Analysis, Interview	Gender identity, empowerment, and intersectionality in travel experiences, patriarchal limitations on mobility and safety concerns
YouTube	1	Thematic Analysis	Solo female travellers' experiences and perceptions of safety
Blogs	1	Thematic Analysis	Narrative framing of safety and female agency

The diagram reveals that Thematic Analysis is the most widely employed methodology across digital platforms. Notably, TripAdvisor, Instagram, YouTube, and blogs are all frequently subjected to this method, which emphasises rich qualitative interpretation of user-generated content. These studies often focus on the themes of Gendered Safety, Geospatial Safety, and Collective Safety Practices, suggesting a strong emphasis on lived experience, spatial negotiation, and community resilience.

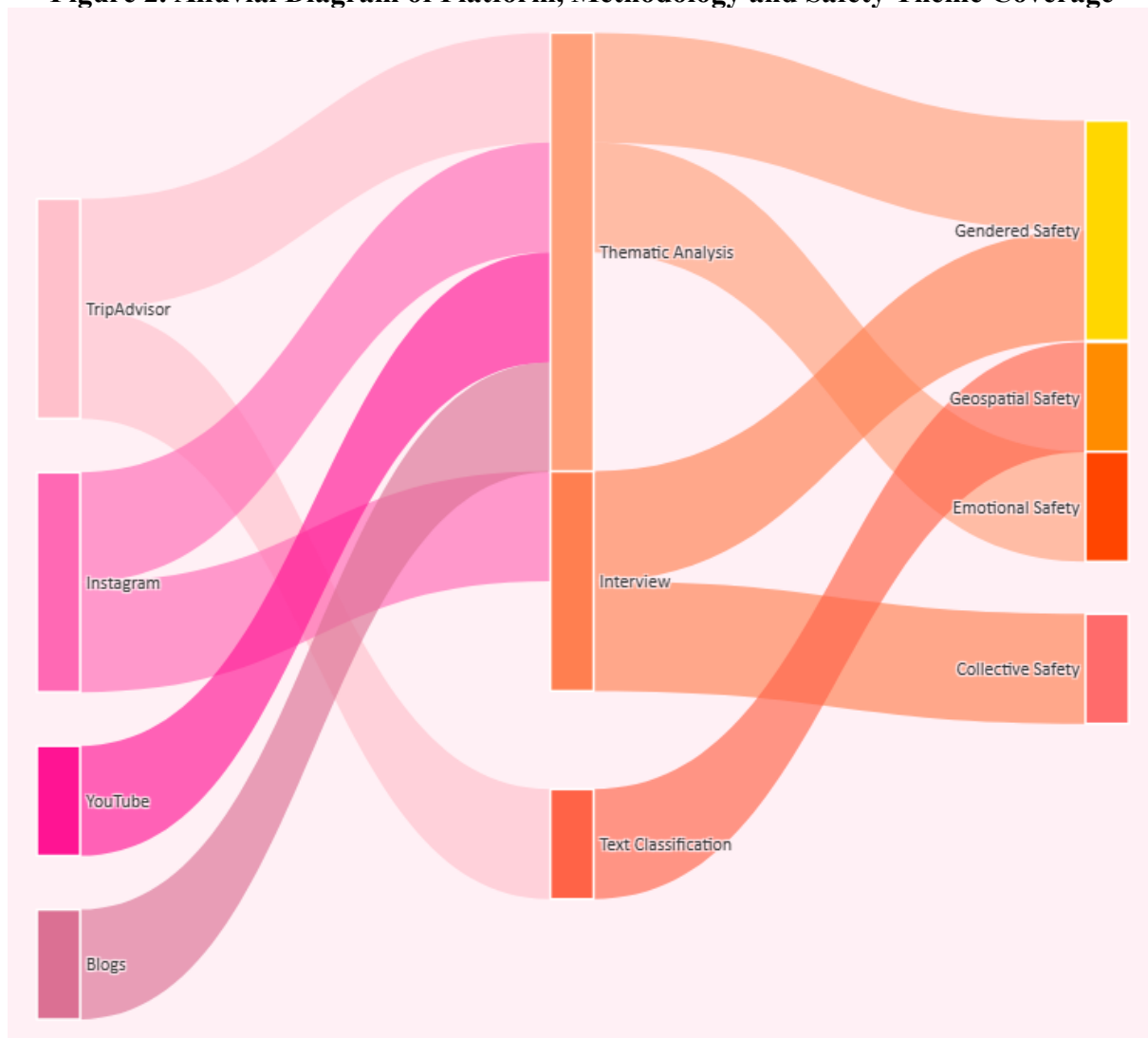
Among the platforms, TripAdvisor was the most frequently studied (5 studies), often using thematic analysis or text classification to explore reviews related to hotel preferences, safety perceptions, and travel behaviours. The pathway from TripAdvisor, specifically through text classification (Pitanatri et al., 2025), primarily leads to themes such as Geospatial Safety and Collective Safety, indicating that even computational efforts are anchored in tangible, physical dimensions of travel safety rather than emotional or digital domains.

Instagram featured in 3 studies and is unique in that it spans both Thematic Analysis and Interview methodologies. This dual approach reflects Instagram's dual function as both a visual storytelling platform and a site for identity negotiation. Thematic connections between Instagram and Gendered Safety, Cultural Norms, and Collective Practices highlight its utility in exploring

complex socio-cultural constraints and peer-based safety strategies, particularly among women navigating patriarchal societies (Nikjoo et al., 2021).

YouTube and travel blogs were each the subject of one study, focusing on solo female travellers' vlogging practices and autobiographical narratives. Although less frequently analysed, they are exclusively explored through thematic analysis and link to themes of Gendered Safety, Emotional Safety, and Collective Safety Practices. These platforms often facilitate autobiographical storytelling, allowing for nuanced expression of psychological distress, vulnerability, and empowerment (Basu Chaudhuri, 2020). Their emotional depth and narrative affordances are evident in their thematic coverage.

Figure 2. Alluvial Diagram of Platform, Methodology and Safety Theme Coverage



Major platforms such as Facebook, Reddit, Twitter/X, and TikTok were absent or only marginally referenced, typically as tools for recruitment or survey distribution rather than as data sources for analysis. This indicates a significant platform coverage gap, particularly in terms of real-time safety discourse, peer-based recommendations, and community-based alerts, which are increasingly prevalent on these underexplored platforms (Gillet et al., 2022; Heldman et al., 2013; Lookingbill & Le, 2024; Westberry et al., 2023). The severe underutilisation of computational methods further suggests a critical need for methodological diversification to capture large-scale

patterns in digital discourse. By visualising these connections, the Alluvial Diagram not only consolidates the fragmented literature but also directly responds to Research Question 3 by showing where scholarly attention is concentrated and where it remains sparse.

In terms of geographic focus, Asia is the most frequently studied region, accounting for 14 (31%) out of 45 studies. Within Asia, research covers diverse contexts, including solo female travel constraints and experiences in Southeast Asia (Brugulat & Coromina, 2021), hotel selection criteria and Gen Z solo travel intentions in Bali, Indonesia (Pitanatri et al., 2025), tourism potential and mobility barriers in Pakistan (Batoool et al., 2024), motivations and constraints in Turkey (Kaba, 2021; Tukenmez, 2022), and female travellers' satisfaction and safety in various parts of India (Chhajer et al., 2022; Iqbal & Woodcock, 2023; Peiris et al., 2022; Somasiri et al., 2022; Talukdar & Tripathi, 2023). Studies also explore solo travel intentions in Taiwan (Nguyen & Hsu, 2022) and protest tourism and harassment fears in Japan (Somasiri et al., 2022).

North America is represented by four studies, focusing on gender-based heat maps of campus walking settings (Chaney et al., 2024), female business travellers' willingness to travel during COVID-19 (Liu-Lastres et al., 2021) and hotel satisfaction in Canada (Zhou et al., 2024). Europe features in one study, specifically in an exploration of queer tourism geographies in Copenhagen (Gajić et al., 2025). Meanwhile, a significant portion of the literature (15%) covers multiple regions, often through analyses of user-generated content on platforms such as YouTube, TripAdvisor, and Instagram, examining international solo women travellers' experiences, hotel selection criteria, and narratives of Iranian solo female travellers (Hosseini et al., 2022).

19 studies (42%) do not specify a particular geographical focus, comprising systematic literature reviews on female tourism and solo travel (Hamid et al., 2021; Kolkesen & Özdemir, 2025; Otegui-Carles et al., 2022; M. K. Singh & Prammar, 2023; Zhang et al., 2024), analyses of women's travel rights (Al-Souri & Youssef, 2024), solo female travel trends (Ghai & Chowdhri, 2022; Herjanto et al., 2020) and broader discussions on algorithmic safety and spatial constraint negotiation.

Table 3: Geographic Distribution of Studies

Region	No. of Studies	Focus
Asia	14	Solo female travel motivations, constraints and experiences in Asia, such as Bali, Indonesia, Pakistan, Turkey, India, Taiwan and Japan
North America	4	Studies on female business travellers and public space perceptions in Canada and the United States of America
Europe	1	Risks and safety perceptions in Copenhagen
Multiple Regions	7	YouTube and Instagram thematic analysis of solo female travellers
No Specific Region	19	Systematic literature reviews on female tourism and solo travel, including hotel trends, risks and constraints, and market segmentation of solo travel intentions and constraints

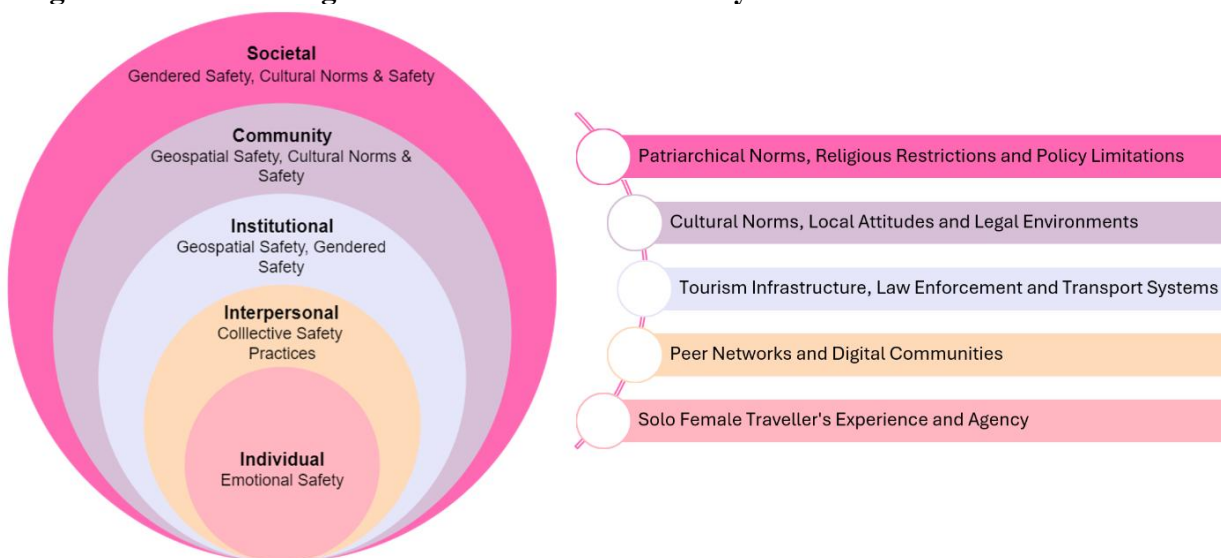
Table 3 provides a regional breakdown, highlighting that no study explicitly focused on the Malaysian context, despite Malaysia being a significant tourism hub in Southeast Asia and a country where gendered, religious, and cultural norms distinctly shape women's mobility. This absence highlights a notable empirical and contextual gap in solo female travel research. Future studies should address this by incorporating country-specific analysis, particularly in

underrepresented yet culturally complex regions like Malaysia, where issues of digital safety, cultural norms, and female autonomy intersect in unique ways.

CONCEPTUALISING GENDERED SAFETY IN SOLO FEMALE TRAVEL FROM A SOCIAL ECOLOGICAL PERSPECTIVE

In synthesising the thematic patterns, methodological trends, and digital platform analyses across the reviewed studies, a crucial insight emerges: the safety experiences of solo female travellers are not shaped in isolation but are multi-layered, context-specific, and digitally mediated. To illustrate this complex interaction, a conceptual model was developed, grounded in the Social-Ecological Model (SEM) developed by American psychologist Urie Bronfenbrenner to understand human development and the interplay between individuals and their social environments (Campbell, 2025). This framework positions safety not as an isolated concern, but as the outcome of interacting layers of individual, interpersonal, institutional, community, and societal influences, each shaping perceptions of risk, expressions of agency, and safety strategies. As depicted in Figure 3, the SEM-based model integrates five dominant safety themes identified in the literature: Gendered Safety, Cultural Norms & Safety, Geospatial Safety, Emotional Safety, and Collective Safety Practices. The layered structure allows a thematic mapping of how safety concerns manifest and interact across different levels of social experience.

Figure 3. Social-Ecological Model of Gendered Safety Discourse in Solo Female Travel



The outermost layer, the Societal Level, encompasses broad structural and cultural constraints that fundamentally condition women's travel experiences. Findings indicate that patriarchal norms, religious regulations, and restrictive policy environments in many conservative societies, particularly in the Middle East and Muslim-majority countries, often view solo female travel as deviant or inappropriate. This can lead to familial disapproval, social stigma, and even legal requirements such as the need for a male guardian. Furthermore, media portrayals reinforce the idea that women are inherently at risk, contributing to a culture of fear and self-censorship. This societal layer is most strongly associated with Gendered Safety and Cultural Norms & Safety, as it establishes the pervasive conditions under which women must navigate their mobility and confront gender-specific threats, often requiring strategic acts of compliance and defiance to reclaim agency. The concept of double discrimination, where Muslim women wearing the hijab

face Islamophobic attitudes and cultural stereotyping abroad, further illustrates how societal biases intersect with individual experiences.

Moving inward, the Community Level highlights the immediate cultural norms, local attitudes, and legal environments that directly impact a traveller's safety. For instance, Southeast Asian solo female travellers often encounter patriarchal expectations that stereotype them as submissive or vulnerable. This can compel them to hide solo travel plans from family or opt for local destinations to minimise confrontation. While some destinations receive positive reviews for local hospitality, issues like local poverty and weak law enforcement in specific areas contribute to increased risk. The influence of ethnicity and appearance also shapes how female travellers are treated, adding another layer to their safety navigation. This level significantly impacts Geospatial Safety and Cultural Norms & Safety, as it dictates the perceived safety of specific locations and influences women's route planning and physical navigation based on local conditions and attitudes.

The Institutional Level comprises the formal structures and services that govern travel and public safety, including tourism infrastructure, law enforcement, and transport systems. Despite improvements in urban safety infrastructure, the perception of male-dominated public spaces remains unchanged, leading women to report feelings of unsafety. Issues with unreliable, overcrowded, or slow public transportation systems also affect mobility and safety perceptions. The effectiveness of law enforcement in addressing incidents such as theft or harassment is also critical. This level strongly aligns with Geospatial Safety and Gendered Safety, as poor infrastructure, weak policing, or male-dominated public spaces perpetuate discomfort or danger for solo female travellers.

The Interpersonal Level focuses on direct interactions and relationships that influence a solo female traveller's safety. The review highlights the crucial role of peer networks and digital communities in fostering collective safety practices. Platforms like Facebook groups, travel blogs, forums, and online videos are frequently used to exchange safety tips, destination reviews, and personal experiences, providing real-time advice and a sense of connectedness. In-person exchanges in hostels and acts of kindness from local hosts or staff also reinforce emotional comfort and trust. This level directly supports Collective Safety Practices, demonstrating how shared knowledge and social solidarity are essential coping mechanisms that help solo female travellers mitigate risk and foster belonging.

At the core of the model is the Individual Level, representing the solo female traveller, whose experiences and agency are shaped by all preceding layers. Despite pervasive challenges, solo female travel is consistently framed as a space of agency and feminist resistance. It fosters self-confidence, resilience, and a renewed sense of independence, allowing women to challenge traditional gender roles and assert autonomy. This level captures internalised strategies for safety, such as itinerary planning, behavioural adaptation, and emotional resilience. This layer directly influences Emotional Safety, as it reflects the psychological comfort and security experienced, alongside the active management of fear and vulnerability.

By layering the five dominant safety themes, specifically Gendered Safety, Emotional Safety, Geospatial Safety, Cultural Norms & Safety, and Collective Safety Practices, onto this SEM-based model, their distribution and interactions across different ecological levels can be better understood. For instance, gendered safety, with its pervasive influence, spans all layers, reflecting how societal norms, community attitudes, institutional responses, interpersonal support, and individual agency all contribute to its manifestation. This SEM-based conceptual model not only provides a holistic interpretation of the literature but also directly responds to Research Question

1 by mapping the dominant safety narratives found in digital discourse and Research Question 3 by integrating thematic prevalence with digital mediation and structural conditions. It also identifies critical research gaps, particularly at the intersection of institutional and digital safety mechanisms, an area largely underrepresented in current empirical studies.

CONCLUSION

This scoping review has mapped the evolving discourse of safety in solo female travel by synthesising 45 peer-reviewed studies published between 2020 and 2025. Guided by three core research questions, the study unpacked the dominant themes, methodological approaches, and gaps across platform and regional coverage. The findings reveal that gendered safety concerns remain deeply rooted in structural inequalities, often exacerbated by cultural norms and spatial restrictions. These are further mediated through digital platforms where safety narratives are constructed, shared, and negotiated by solo female travellers. Thematic analyses surfaced five major safety discourses: Gendered Safety, Emotional Safety, Geospatial Safety, Cultural Norms & Safety, and Collective Safety Practices. Each theme was intricately shaped by the interplay of societal expectations, institutional structures, interpersonal networks, and individual agency.

From a methodological standpoint, this review highlights a heavy reliance on qualitative approaches, particularly interviews and thematic analysis. However, there is a critical underutilisation of computational tools and natural language processing techniques that could offer scalable insights from user-generated content on platforms such as TripAdvisor, Reddit, YouTube, and Instagram. Furthermore, while Asia emerged as the most studied region, many investigations lacked a clear geographical focus or failed to explore underrepresented regions such as the Middle East, Latin America, and Sub-Saharan Africa. Similarly, platform-specific safety discourses remain limited to a few channels, underscoring the need to broaden digital ethnographic inquiry across a wider array of online platforms.

The Social-Ecological Model (SEM)-based conceptual framework introduced in this study offers a powerful lens to understand safety as a multi-layered, interconnected issue. By positioning safety themes across individual, interpersonal, institutional, community, and societal levels, the model provides clarity on how structural and relational forces intersect to shape women's mobility, agency, and risk perceptions. This conceptualisation also bridges the thematic findings with broader theoretical discourses in gender studies, digital sociology, and travel behaviour.

Several recommendations for future research emerge. Firstly, future studies should expand computational approaches, adopting advanced techniques such as sentiment analysis, aspect-based sentiment analysis, and topic modelling to extract nuanced insights from large-scale digital discourse. Such tools can effectively complement qualitative methods and scale thematic interpretations across platforms and geographies. Secondly, it is imperative to broaden platform coverage. Digital discourse around solo female travel extends far beyond TripAdvisor and Instagram, such as future research should include underexplored platforms like Reddit, TikTok, and Facebook groups, where safety conversations are often dynamic, real-time, and peer-supported. Thirdly, to address the existing geographical imbalance, researchers should enhance geographical diversity, prioritising regions with underrepresented perspectives, such as the Middle East, Latin America, and Sub-Saharan Africa, where cultural norms and mobility rights are often highly contested.

In conclusion, this review contributes a comprehensive synthesis of how safety in solo female travel is discussed, perceived, and mediated across global digital and academic spaces. It encourages a methodological shift towards more inclusive, data-rich, and context-sensitive analyses that acknowledge the complexities of gendered mobility in the 21st century. By bridging tourism studies, gender theory, and computer science, future interdisciplinary approaches can develop more inclusive and gender-sensitive digital infrastructure, ultimately contributing to the United Nations Sustainable Development Goals 5 (Gender Equality) and 11 (Sustainable Cities) and fostering safer, more empowering travel experiences for solo female travellers globally.

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019-010

EXPLORING WOMEN'S EMPOWERMENT AND INTIMATE PARTNER VIOLENCE IN CAMBODIA: A PSEUDO-LONGITUDINAL ANALYSIS

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ABSTRACT

Intimate partner violence (IPV) remains a persistent global issue that significantly affects women's health and well-being. This study examines the trends and determinants of intimate partner violence (IPV) among married Cambodian women through a pseudo-longitudinal analysis of data from the Cambodia Demographic and Health Surveys (CDHS) conducted in 2014 and 2021-2022. Using binary logistic regression models, the study investigates how women's sociodemographic factors, indicators of empowerment, and spousal characteristics influence women's experiences of various forms of IPV. The prevalence of IPV declined from 19.9% in 2014 to 13.7% in 2021-22, reflecting a notable improvement. In general, women's empowerment emerged as a protective factor against IPV. However, the effect weakened when spouses exhibited controlling behaviour or frequently consumed alcohol. These findings highlight a backlash effect, whereby women's empowerment challenges patriarchal and gender norms, potentially bringing about adverse responses from partners. Sociodemographic factors such as women's education, wealth status, age at first marriage, and number of living children were significantly associated with IPV experiences. These findings underscore the need for a comprehensive approach to IPV prevention that not only strengthens women's empowerment but also addresses harmful partner behaviors, such as control and alcohol misuse. This study contributes to the literature on IPV in Southeast Asia and provide insights for developing more targeted interventions and policies to address IPV effectively.

Keywords: Intimate Partner Violence (IPV), Women's Empowerment, Cambodia, Controlling Behavior, Pseudo-Longitudinal Analysis.

023-014

PERSPEKTIF LELAKI TERHADAP GANGGUAN SEKSUAL DI MALAYSIA: NORMA SOSIAL, KECENDERUNGAN JANTINA DAN IMPLIKASI TERHADAP KESEJAHTERAAN MASYARAKAT

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ABSTRAK

Gangguan seksual merupakan isu berasaskan jantina yang memberi implikasi besar terhadap kesejahteraan masyarakat, perpaduan sosial, dan kesaksamaan gender. Penyelidikan ini mengkaji bagaimana lelaki dewasa di Malaysia memahami dan respon terhadap gangguan seksual, dengan memberi tumpuan kepada pengaruh norma sosial, dinamika gender, dan strategi pencegahan. Seramai 205 orang lelaki dewasa telah melengkapkan borang kaji selidik dalam talian dengan penelitian terhadap motivasi, reaksi emosi dan kognitif, serta pandangan mereka terhadap langkah pencegahan. Dapatan menunjukkan bahawa pengaruh rakan sebaya (55.6%), persepsi galakan daripada pihak mangsa (53.7%), serta naratif menyalahkan mangsa seperti penampilan fizikal (45.9%) merupakan faktor sosial utama terhadap perlakuan gangguan. Selain itu, 45.4% responden menganggap perlakuan gangguan seksual sebagai satu bentuk gurauan, mencerminkan normalisasi budaya yang membimbangkan dalam kalangan orang lelaki apabila mereka berada dalam satu kumpulan sosial. Seterusnya, dapatan di mana gangguan oleh wanita kurang kerap dilabel sebagai tidak wajar, menggambarkan bagaimana dinamika kuasa dan ideal maskuliniti membentuk tafsiran terhadap tingkah laku seksual. Walaupun lebih 85% responden menganggap gangguan seksual sebagai isu serius dalam masyarakat, hanya 32.2% menyedari kewujudan Akta Antigangguan Seksual 2022. Namun begitu, 96.1% menyatakan sokongan terhadap usaha pencegahan. Langkah pencegahan yang dicadangkan termasuk penguatkuasaan hukuman lebih tegas (74.6%), reformasi undang-undang (72.2%), dan pendidikan seksualiti (72.7%). Penemuan ini menekankan keperluan intervensi transformasi gender dalam dasar kependudukan, termasuk pendidikan masyarakat yang menyeluruh, kebertanggungjawaban institusi, dan strategi untuk mengubah norma maskuliniti yang toksik. Fokus kepada perspektif lelaki adalah penting dalam membangunkan strategi yang holistik bagi mewujudkan persekitaran yang lebih selamat, mencapai keadilan gender, dan membina budaya yang menghormati maruah serta hak wanita dalam masyarakat.

Kata Kunci: Gangguan Seksual, Perspektif Lelaki, Norma Gender, Pengaruh Sosial, Strategi Pencegahan.

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THE SILENT GAP: EXPLORING THE SOCIAL IMPACT OF ABSENT FATHERS IN MALAYSIAN FAMILIES

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ABSTRACT

The absence of fathers whether physical or emotional has significant implications for a child's emotional and psychological development. In urban Malaysian society, the phenomenon of the 'absent father' increasingly encompasses not just physical absence due to factors such as divorce, incarceration or work migration, but also emotional disengagement despite physical presence. This study, grounded in Attachment Theory explores the emotional and psychological consequences of father absenteeism, asking: "What are the emotional implications of growing up with an absent father in Malaysia?". Using a mixed-methods approach, data were gathered from 170 individuals raised without consistent paternal emotional support in the Klang Valley. Survey items were adapted from validated instruments to ensure cultural and conceptual relevance, expanding the definition of father presence beyond physical co-residence to include the subjective experience of being fathered. Qualitative findings highlight two dominant domains. First, emotional availability or the lack thereof emerged as a core issue, with participants reporting feelings of rejection, emotional disconnection and difficulty forming secure attachments. Many described barriers to emotional expression within the home, often resulting in mistrust or emotional self-reliance.

Second, the psychological impact of father absence was evident in reports of long-term emotional distress, low self-esteem and attachment insecurities. However, some participants also reflected on experiences of resilience and personal growth, particularly when supported by emotionally attuned caregivers. This research underscores how a father's emotional presence is critical for healthy psychological development and attachment formation. This study highlights how emotional unavailability from fathers disrupts secure attachment formation and contributes to lifelong psychological vulnerabilities. Future research should explore these dynamics in rural settings, consider the role of surrogate or extended male figures in emotional development and examine culturally grounded interventions that address emotional needs in father-absent households.

Keywords: Absent Fathers, Family Institution, Fatherhood, Parenting Gap, Child Development, Social Impacts.

INTRODUCTION

In many societies, including Malaysia, there is an unspoken but widely accepted perception that mothers are the primary caregivers in a child's life. This assumption often renders fathers less visible in discussions of child development, emotional support and family dynamics. Kellerman and Katz (1978) observed that within familial settings, women predominantly take on roles that involve emotional nurturing, the establishment of consistent routines, the implementation of behavioural discipline and the provision of guidance during the early and formative years of a child's development. Similarly, Noor (1999), in her study of Malaysian Malay and Chinese families in Peninsular Malaysia, found that mothers were significantly more involved in day-to-day childcare responsibilities compared to fathers. While these gendered caregiving roles have been socially and culturally reinforced over time, they also contribute to a growing concern: the silent gap created by the emotional and physical absence of fathers in the family unit. This absence whether due to work migration, separation, death or disengagement can have profound social and psychological implications on children and the overall well-being of families. Yet, the issue often remains unaddressed, hidden beneath traditional gender expectations and assumptions about paternal roles. This paper aims to explore the social impact of absent fathers within the Malaysian context, examining how this gap affects children's development, maternal burden and the broader family structure.

Paternal Presence and Its Impact on Child Development

Fathers play a vital role in shaping their children's development. According to Yusof et al. (2023), a father's presence contributes positively to a child's emotional stability, confidence, academic achievement and communication skills. Sons tend to model their behaviour after their fathers while daughters often form their understanding of men based on their relationship with their father, who serves as the first male figure in their lives. Studies by Ishii-Kuntz (1992) and Marino & McCowan (1976) emphasize that being a father is not just about physical presence or financial support; it includes emotional bonding and active involvement in the child's life. This emotional presence is essential as highlighted by Krampe & Newton (2006), who describe the father as a psychological anchor that shapes the child's emotional world. The absence of a father whether physical, emotional or psychological can have significant negative consequences. Research shows that children without an involved father are more likely to struggle with academic performance, behavioural problems, emotional difficulties and delayed development (Aldous & Mulligan, 2002;

Lamb, 2010; Yusof et al., 2023). In Malaysia, the issue of father absenteeism is increasingly relevant due to factors like divorce, labour migration and urbanization. Zuliani et al. (2024) argue that father absence includes not only physical separation but also emotional unavailability, even when the father is physically present. The current study adopts this broader definition to explore the nuanced forms of paternal absence in Malaysian households and their impacts on children's well-being.

Challenges Faced by Malaysian Fathers

Over the years, parental roles have shifted with fathers now expected to contribute more than just financial support. They are increasingly seen as emotional caregivers and active participants in child-rearing. However, institutional support for these evolving roles remains limited. Ariff (2024), writing for *The Star*, highlights that many Malaysian fathers especially those from the B40 income group face high levels of stress and mental health challenges such as anxiety and depression. These issues are often the result of balancing multiple responsibilities at work and home with little support from workplace policies. The lack of paid paternity leave and rigid job structures adds to their burden, leading to emotional detachment from their families. Although they may be physically present, many fathers become psychologically and emotionally unavailable to their children. Ariff also notes a troubling mental health trend in Malaysia between 2020 and 2023, nearly one million Malaysians aged 15 and above were diagnosed with depression, with men being at least three times more likely to die by suicide. These figures point to an urgent need to address father well-being as a key factor in child development.

Another major challenge is the impact of divorce on father-child relationships. According to the Father's Rights Association of Malaysia (2024), more than 78,000 divorces have occurred since the COVID-19 pandemic, many resulting in fathers losing custody of their children. This limits their ability to remain involved in their children's lives and weakens their paternal role. Zuliani et al. (2024) found that children with absent fathers are at higher risk of poor academic performance, emotional problems, behavioural issues and identity confusion. Similarly, Yahya et al. (2023) reported that Malaysian adolescents without paternal warmth tend to experience low self-esteem and greater psychological distress. These outcomes not only harm individual children but also carry long-term societal risks, such as reduced social cohesion and economic productivity. To address this, national policies must support father involvement through legal reforms, improved mental health services and father-inclusive social programmes.

Behavioural and Emotional Consequences of Father Absence

Father absence significantly affects children's behavioural development and emotional well-being. Globally, children without a paternal figure are more likely to exhibit externalising behaviours such as delinquency, aggression, and antisocial tendencies, along with increased vulnerability to internalising symptoms like anxiety and depression (Zuliani et al., 2024). In the Malaysian context, children from father-absent or single-parent households are reported to experience higher levels of emotional distress, including sadness, low self-esteem and identity confusion (Latiff et al., 2016; Yahya et al., 2023). The emotional void left by an absent father disrupts the development of secure attachments, emotional regulation and a sense of stability, especially during adolescence. Adolescents often struggle with feelings of abandonment, reduced self-worth and difficulties forming trusting relationships. Furthermore, in collectivist societies where fathers are seen as key authority and emotional anchors, the absence is felt more deeply. Emotional unavailability, even

in cases where fathers are physically present but disengaged can have similar adverse effects, leading to withdrawal, suppressed emotions or heightened behavioural outbursts. These findings reaffirm the essential role of fathers not just as providers but as active emotional figures whose presence shapes children's behavioural choices, coping mechanisms and emotional resilience.

RESEARCH QUESTION AND OBJECTIVES

This study seeks to examine the social impact of father absenteeism within the Malaysian context, focusing on how the absence of a paternal figure affects children's development, increases maternal burdens and alters the overall family structure. Guided by the central research question: What are the social and emotional implications of father absenteeism on families in Malaysia?, the study aims to explore the multidimensional effects of father absence, particularly through the lived experiences of children and adults who have grown up without a father. Despite extensive international evidence linking father absence to behavioral problems, academic underachievement, anxiety and depression (McLanahan & Teitler, 1999; Zuliani et al., 2024), Malaysian research on this issue remains sparse and fragmented. This gap underscores the need for a localized understanding of the causes, consequences and coping strategies related to fatherlessness. By centering the voices of affected individuals, this research intends to provide culturally grounded insights into the psychosocial and socioeconomic dimensions of father absence in Malaysia.

LITERATURE REVIEW

Impact of Father Absenteeism on Families and Children

Father absenteeism whether due to physical absence, emotional unavailability or disengagement from parental responsibilities has far-reaching consequences on both family structures and child development. According to Zuliani et al. (2024), father absence often originates from a father's neglect of familial duties with varied effects on each child's emotional and developmental trajectory. Traditional societal norms that position mothers as primary caregivers and fathers primarily as financial providers further reinforce this divide, diminishing the perceived importance of paternal involvement. Ntoma and Kusmawati (2024) describe fatherlessness not merely as physical absence but also as a lack of psychological or emotional presence, even in households where fathers are physically present. Hadi et al. (2024) echo this concern, emphasizing the harm caused by emotionally disengaged fathers. Arbiyana and Kholil (2024) broaden this understanding to include cases of death, divorce and estrangement. Research by Adewale (2013) links father absence to lower IQ scores among children, highlighting the father's significant role in cognitive development. Cristy and Soetikno (2023) further support this by noting that fatherlessness impairs both cognitive and psychological functioning in children.

Building on this foundation, Kucukkaragoz (2025) identifies multiple domains in which father absenteeism negatively affects children. Academically, children from father-absent households often demonstrate poor performance and limited school engagement. Psychologically, they are more susceptible to anxiety, depression and behavioural disorders. Social difficulties also arise, including challenges in peer relationships and increased likelihood of delinquent behaviours. Economically, father absence contributes to intergenerational poverty and limited employment opportunities while also restricting access to quality healthcare, thereby increasing risks of malnutrition and obesity. Gender-specific outcomes are evident whereby boys tend to exhibit more externalising behaviours, whereas girls are more prone to internalising emotional distress. These

consequences are further exacerbated in conflict zones, migrant families and marginalised communities. The cumulative impact of father absence thus extends beyond individual families, influencing broader societal wellbeing. Kucukkaragoz (2025) calls for multi-layered interventions, including government assistance for single-parent families, school-based mentoring and culturally sensitive community engagement to promote paternal involvement. In short, father absenteeism is not merely a familial concern but a multidimensional issue with implications for psychological, cognitive, social and economic well-being.

Global and Local Perspectives on Father Absenteeism

International research has consistently demonstrated the far-reaching consequences of father absenteeism on children's emotional, social and academic development. For example, Kurata et al. (2024) reported that children without father figures often experience intense feelings of abandonment, anxiety and low self-esteem. Many struggles with emotional instability, social withdrawal or hostility, which can hinder their ability to build healthy relationships. These challenges are further exacerbated in economically vulnerable regions, where the lack of paternal presence coincides with poverty and limited access to resources. Although alternative caregivers such as mothers, grandmothers, or aunts may offer some emotional stability, they often lack the financial and psychological resources typically provided by fathers. Academically, these children tend to show reduced motivation, difficulty concentrating, and a higher likelihood of school dropout due to the need to assume adult responsibilities. Guay et al. (2020) emphasized the critical role of fathers in cultivating self-directed motivation and academic resilience. Furthermore, father absence can hinder social development, leading to poor peer integration and increased risk of delinquent behavior. Studies by Nuraqmarina and Wisudawati (2023), DaViera and Roy (2019), and Roy et al. (2021) also indicate a higher prevalence of risky behaviors and emotional instability particularly among girls where paternal figures are absent.

While much of the discourse stems from Western contexts, recent Malaysian research provides culturally grounded insights into the impacts of father absenteeism. Yahya et al. (2023) found that reduced paternal involvement whether due to physical absence or emotional detachment was associated with greater psychological distress, low self-worth and impaired emotional regulation among Malaysian adolescents. In a collectivist society like Malaysia, the father's role is deeply embedded in identity formation, moral guidance, and emotional validation, making his absence particularly consequential. Latiff et al. (2016) explored the academic and emotional outcomes among adolescents from single-parent and non-nuclear families in urban Malaysia, revealing increased vulnerability to depression, behavioral issues and poor academic performance. These effects were intensified by competitive academic settings and societal pressures unique to urban environments. The weakening of peer relationships and emotional instability was also more pronounced in the absence of paternal support. Collectively, Malaysian studies align with global findings but stress the importance of cultural context, family expectations and localized support systems. As Malaysia continues to experience rapid urbanization and shifting family dynamics, addressing the multifaceted effects of father absenteeism is critical for shaping effective interventions and fostering resilient youth development.

Attachment Theory

The study incorporates John Bowlby's Attachment Theory, which emphasizes the importance of early interactions in a child's emotional, social and psychological development. According to

Holmes (2014), a child's relationship with a caregiver provides a secure base from which to explore the world, encouraging resilience, self-esteem and social competence (Goldberg et al., 2013). When this tie is broken or absent, like in the case of paternal absence, children may experience emotional uncertainty, anxiety and difficulty building and maintaining relationships (Fredricks et al., 2016). Such interruptions have a major impact on their academic achievement, emotional well-being and social development (Renk et al., 2006). Attachment Theory provides an important framework for understanding how the absence of a father figure affects children's lives. It helps to explain how a lack of vital attachment might lead to increased anxiety and decreased confidence in overcoming social and academic problems. This theoretical framework proved useful in understanding topics such as insecurity, emotional resilience and interpersonal challenges. When assessing the findings, Attachment Theory was used to contextualize observed behaviors and derive relevant conclusions about the impact of father absence on children's development.

METHODOLOGY

This study employed a mixed-method approach, combining both quantitative and qualitative data to explore the social and emotional impacts of father absenteeism in Malaysia. Data collection was conducted among selected participants residing in the Klang Valley, with a total of 170 individuals participating in the study. The sample size was determined based on guidelines for diary studies, which recommend a minimum of 100 participants with at least five measurement points (Ohly, 2010). With 170 participants assessed across a four-week period, this study exceeded the recommended benchmark, ensuring robust data for analysis. The quantitative phase utilised a structured survey, initially distributed among university students and later shared through snowball sampling to reach relatives, friends and acquaintances who had experienced similar circumstances of father absence. The survey was organised around two thematic sections to capture multiple dimensions of paternal absence. The first theme, Emotional Availability, assessed the father's emotional responsiveness and the level of perceived support. The second theme, Psychological Impact evaluated the emotional and behavioural outcomes associated with father absence, such as self-esteem, anxiety and resilience. Each theme included five statements rated on a five-point Likert scale (from Strongly Disagree to Strongly Agree), resulting in 10 items designed to measure participants' perceptions of their father's presence and involvement.

The Father Absence Scale (FAS) employed in this study was primarily developed based on the framework established by Ellis et al. (2003). To ensure both cultural and conceptual relevance, selected items were adapted from the Father-Love Absence Scale (FLAS) developed by Xiang and Zhou (2023). The integration of these instruments provided a comprehensive assessment of the emotional and behavioural dimensions of father engagement. To complement the survey data and gain deeper insight into lived experiences, the qualitative phase involved semi-structured interviews with a purposively selected subset of participants. These interviews focused on personal narratives of growing up with an absent father: physically, emotionally or both. Guided by the central question, "*How do Malaysian individuals personally experience and interpret the absence of their father throughout different stages of their life?*", this phase allowed for a nuanced understanding of how father absence shapes identity, emotional development and social interactions within the Malaysian socio-cultural context.

FINDINGS AND DISCUSSIONS

The quantitative findings were structured around two central themes: Emotional Availability and Psychological Impact, each offering measurable insights into participants' experiences of father absence. Complementing this, the qualitative data from semi-structured interviews revealed deeper, emerging themes such as Emotional Disconnection, Barriers to Emotional Expression, Emotional Distress and Positive Influence. Together, these mixed-method findings provide a more holistic understanding of how father absenteeism affects individuals emotionally, socially and psychologically within the Malaysian context.

Table 1: Demographic Profile of Participants (N = 170)

<u>Category</u>	<u>Subcategory</u>	<u>Percentage (%)</u>
Gender	Male	49.4
	Female	50.6
Age Group	15–20 years	51.2
	21–30 years	40.6
	31 years and above	8.2
Ethnicity	Chinese	65.4
	Malay	22.9
	Indian	7.9
	Bumiputera (Sabah & Sarawak)	3.8
Education Level	Diploma	12.4
	Bachelor's Degree	78.8
	Postgraduate	8.8

Table 1 presents the demographic analysis of the 170 participants, revealing a fairly balanced gender distribution, with 49.4% male and 50.6% female respondents. Most participants (51.2%) were aged between 15 to 20 years, followed by 40.6% in the 21 to 30 age group and a smaller segment (8.2%) aged 31 years and above. Ethnically, the sample was predominantly Chinese (65.4%), with Malay (22.9%), Indian (7.9%) and Bumiputera from Sabah and Sarawak (3.8%) also represented. In terms of education, most participants held a bachelor's degree (78.8%), while 12.4% had completed a diploma and 8.8% pursued postgraduate studies. This demographic spread provides a diverse yet youth-centric perspective on paternal absence in urban Malaysian settings.

Emotional Availability: Emotional Disconnection and Barriers to Emotional Expression

Emotional availability refers to a parent's ability to be attuned, responsive and empathetic toward their child's emotional needs. When this connection is lacking, children may struggle with expressing feelings, forming secure attachments or understanding their own emotions.

Emotional Disconnection

Table 2 shows that a significant 25.9 percent of respondents remained neutral when asked whether their father was emotionally distant, while 16.5 percent agreed and 7.1 percent strongly agreed, indicating a general tendency toward moderate or unclear perceptions. On the other hand, 24.1 percent strongly disagreed and 7.1 percent disagreed, suggesting that a fair portion did not perceive their fathers as emotionally distant. On the statement “*I felt that my father didn’t understand my feelings*”, the highest proportion, 34.1 percent, chose to be neutral, followed by 19.4 percent who agreed and 10.6 percent who strongly agreed. In contrast, 21.8 percent disagreed and 14.1 percent strongly disagreed, reflecting mixed views with a tilt towards emotional misunderstanding. When asked if their father rarely expressed affection, 29.4 percent were neutral and 24.1 percent agreed while another 8.8 percent strongly agreed. However, 24.1 percent disagreed and 13.5 percent strongly disagreed, again showing an evenly split perception on paternal affection.

Table 2: Respondents’ Perspectives on Emotional Availability

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
<i>My father was emotionally distant from me.</i>	7.1	16.5	25.9	7.1	24.1
<i>I felt that my father didn’t understand my feelings.</i>	10.6	19.4	34.1	21.8	14.1
<i>My father rarely expressed affection toward me.</i>	8.8	24.1	29.4	24.1	13.5
<i>I couldn’t talk to my father about personal or emotional issues.</i>	24.1	20.0	26.5	18.8	10.6
<i>My father showed little interest in my emotional well-being.</i>	8.8	18.8	25.3	32.4	14.7

Interview narratives vividly reinforced this disconnection. Several participants expressed a profound sense of sadness, loneliness, or emotional void in their interactions with their fathers. One remarked, “*I feel rejected and alone*” while another shared, “*He told me to stop crying, so I felt he doesn’t want to hear me out*”. These voices highlight a recurring pattern where children felt unseen or unimportant, especially when they were vulnerable or emotionally overwhelmed. The lack of emotional support, whether through listening, comforting or affirming presence, created a sense of emotional abandonment. This emotional gap also impacted how respondents viewed their father’s role. One participant candidly said, “*All males can be a dad, but not all dads can be called a father. It takes a lot, especially presence, to make a child feel they have somebody when things go south*”. These insights reflect that emotional disconnection goes beyond occasional absence. It becomes a persistent lack of presence, affection and mutual understanding, leading to long-term emotional detachment.

Barriers to Emotional Expression

On the ability to discuss personal or emotional matters with their father, 26.5 percent responded neutrally. However, a significant 24.1 percent strongly agreed and 20.0 percent agreed that they couldn’t talk to their fathers while 18.8 percent disagreed and 10.6 percent strongly disagreed, indicating that communication barriers were common among many. Lastly, in response to whether their father showed little interest in their emotional well-being, 25.3 percent were neutral, 18.8

percent agreed and 8.8 percent strongly agreed. However, a larger group of 32.4 percent disagreed and 14.7 percent strongly disagreed, suggesting that although some experienced emotional neglect, many felt that their fathers were at least somewhat emotionally present.

The interviews further illuminated these barriers. Respondents often spoke of withholding feelings due to fear of dismissal or misunderstanding. Common remarks included: *"I'll shut up"*, *"I never share my thoughts with him"* and *"I stay quiet and go do activities that help with my thoughts and feelings"*. These illustrate a self-imposed silence, developed over time due to repeated emotional shutdowns or invalidation. A pattern of learned suppression emerged from these narratives. One respondent stated, *"Generally I don't share these things with him ... used to it"* indicating resignation and the normalization of emotional distance. Another revealed how this dynamic affected self-expression: *"I just bottle things up. When I need help, I'll ask my friends or write it down"*. When asked what they wished their fathers knew, participants often expressed longings for empathy and space to speak: *"I want him to know that I need him"* and *"Please listen to my opinion first before saying I'm wrong"*. These statements underscore the emotional risk children take when trying to open up and how unmet emotional needs result in long-term barriers to healthy expression.

Lamb (2010) and Palkovitz (2007) highlight the importance of fathers being emotionally involved in their children's lives. In this study, children expressed a strong need for empathy, attention and meaningful communication. However, these needs were often unmet by fathers who focused mainly on providing financial support but lacked emotional connection. This supports McLanahan and Sandefur's (1994) finding that children from father-absent homes tend to experience lower educational and emotional well-being. Similarly, Sarkadi et al. (2008) found that children with emotionally involved fathers are more likely to develop strong social and psychological skills. The findings also align with Amato and Gilbreth's (1999) meta-analysis, which shows that children with non-resident or emotionally distant fathers often face greater emotional difficulties.

Psychological Impact: Emotional Distress and Positive Influence

The psychological effects of father presence or absence vary. Some individuals experience longterm emotional distress, while others find strength and growth in their experiences. These outcomes depend on various personal, familial and social coping mechanisms.

Emotional Distress

As shown in Table 3, the psychological impact on children, highlighting several noteworthy themes. Regarding the item on feeling rejected or unloved by their father, 31.2 percent of respondents remained neutral while 30 percent disagreed and 27.1 percent strongly disagreed. However, 9.4 percent agreed and 2.4 percent strongly agreed with the statement, indicating a minority who felt rejected.

Table 3: Respondents' Experiences of the Psychological Impact of Paternal Presence

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)

<i>I often felt rejected or unloved by my father.</i>	2.4	9.4	31.2	30.0	27.1

<i>I struggled with self-worth because of my father's absence.</i>	5.9	8.8	27.1	25.9	32.4

<i>My relationship with men or authority figures is affected by my father's absence.</i>	7.6	12.9	30.0	24.7	24.7

<i>I feel anger or resentment toward my father.</i>	2.9	10	25.9	27.1	34.1

<i>I longed for a stronger bond with my father growing up.</i>	10.0	27.6	36.5	11.2	14.7

The survey also explored whether the father's presence or absence influenced respondents' confidence, happiness, or emotional stability. Notably, 60 respondents stated that they were unaffected. However, responses from others were alarming, with terms such as "irresponsible", "self-centred", "verbally abusive", "tense", "awkward", "fearful" and "disappointed" frequently used. These suggest a lack of emotional responsibility by fathers. Standout comments include:

"He never lets us speak up for ourselves. He shuts us down whenever we try to say something. When we point out his faults, he changes and ignores us. This shows our voices are not heard, making it hard to build confidence".

"I have a father, but he never acts like one. I feel as if he doesn't exist".

"Dia kena faham generasi dia tak sama macam dulu. Dia perlu sokong apa yang anak dia buat, asalkan benda tu tak salah dari sisi undang-undang". (He needs to understand that his generation is not the same as today's. He should support what his child is doing, as long as it's not something illegal).

These personal accounts provide context to the statistics. On the item regarding whether their relationship with men was affected due to their father's absence, 12.9 percent agreed and 7.6 percent strongly agreed, while 30 percent were neutral and 24.7 percent disagreed or strongly disagreed respectively. One poignant response stated:

"Growing up, I developed a fear of male authority figures, which I think stems from my relationship with my father ... I find it hard to talk to other people, male or female. They remind me of how my dad would question everything. I rarely message my lecturers or friends, even when I'm confused. I'd rather struggle silently than risk being questioned or misunderstood".

As for feelings of anger or resentment towards their fathers, 10 percent agreed and 2.9 percent strongly agreed while 25.9 percent were neutral. Meanwhile, 27.1 percent disagreed and 34.1 percent strongly disagreed. Regarding the desire for a stronger bond with their fathers during childhood, 27.6 percent agreed and 10 percent strongly agreed. However, 36.5 percent were neutral, 11.2 percent disagreed and 14.7 percent strongly disagreed. Emotional security is a fundamental component of a healthy home. Its absence can amount to a silent form of emotional harm. The data clearly indicates that fatherly involvement or the lack thereof has left an emotional mark. Although 12.9 percent may seem like a small proportion, it is sufficient to demonstrate that children can carry lasting emotional scars due to inadequate paternal support.

Positive Influence

On a positive note, based on the survey, Interestingly, 8.8 percent and 5.9 percent agree and strongly agree they struggle with self-worth due to their father's absence. However, 25.9 percent and 32.4 percent disagree and strongly disagree struggling with self-worth with 27.1 percent are neutral. To some extent, it is a positive relief to see participants are not affected with the absence of their fathers in their life. That speaks the volumes as respondents have either made peace without their presence or the presence is always felt around them. On the same subject, participants were directed a similar based question of the influence fathers have on them during rough times. To this, 58 respondents responded to have no influence or took a neutral stand. The other respondents gave positive statements as below:

"When I go through a tough time, I try to be resilient and stoic, just like my father. He rarely shows his emotions and in a way, I've picked up on that. I tend to shut things out, if there are people I don't like or who hurt me, I just stop associating with them and eventually forget their faces and names. From him, I've learned to stay calm, analyze the situation and break it down into manageable parts. I ask myself: 'Where did it go wrong? What can I do about it? What's my next step?' It's a very logical, almost emotionless way of dealing with things and while it's not perfect, it helps me keep control when everything feels overwhelming".

"When I'm going through a tough time, I often think about how my father has always been a calm presence during moments of crisis. His ability to stay grounded gives me strength. I tend to handle challenges more rationally and patiently because that's how he modeled it for me. Sometimes, even just talking to him helps me gain perspective and feel less alone".

"My father would approach me and guide me to voice out what problem am I facing and he will guide me with his knowledge and experience in life".

Besides other respondents mentioned having their father's interference as happiness, feeling confident, secured, stability, reliable, and receiving support from fathers made a huge impact on the children. This is seen in a positive lens. As stated above the importance of fathers' role and the level of their attachment is crucial for a positive growth of a child. Fathers become are the role models that children look up to. As they grow, they tend to emulate their fathers' traits consciously or subconsciously.

CONCLUSION

This study underscores that father absence extends far beyond mere physical detachment; it is profoundly shaped by emotional inaccessibility and a breakdown in meaningful communication. While a few participants shared cherished memories of emotional connection, many conveyed a deep sense of neglect, rejection, or emotional invisibility even in households where fathers were physically present. These findings illuminate the nuanced and layered dimensions of fatherhood in the Malaysian context, particularly its emotional and psychological ramifications on children's selfworth, emotional regulation, and identity formation. Grounded in Attachment Theory, this research reaffirms that fatherhood extends beyond the traditional roles of provider or disciplinarian. Instead, fathers are positioned as emotional anchors, whose consistent presence and responsiveness are essential in shaping a child's sense of security, self-worth and emotional development. When fathers fulfil these roles with emotional availability and attunement, they foster a sense of security and resilience in their children. In contrast, emotional absence regardless

of physical presence can erode foundational bonds, disrupt healthy attachment and hinder the trajectory of emotional development. These insights call for a reconceptualisation of paternal roles, placing greater emphasis on emotional presence as a core dimension of fatherhood.

Future research should expand beyond biological father figures to include stepfathers, male relatives, mentors or other significant paternal presences. These individuals may play a pivotal role in shaping a child's emotional well-being when the biological father is absent or emotionally disengaged. Studies using tools like the Father Presence Questionnaire (FPQ) may yield deeper insights when applied to diverse populations, including individuals with histories of incarceration, addiction or intergenerational trauma. Moreover, understanding the intergenerational dynamics of fathering: how parental relationships and family narratives influence one's experience of being fathered could offer valuable contributions to both clinical and academic fields. Ultimately, ongoing research should aim to redefine fatherhood through a lens of emotional presence, empathy and relational continuity, thus supporting healthier family systems for future generations.

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010-019

**PERANAN KEPIMPINAN LELAKI DALAM KELUARGA
- IMPLIKASI TERHADAP PERANAN GENDER, PENJAGAAN ANAK DAN
PEMERKASAAN KELUARGA**

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ABSTRAK

Institusi keluarga merupakan unit asas pembentukan masyarakat yang menuntut kepimpinan yang stabil, adil dan bertanggungjawab. Lelaki memainkan peranan utama sebagai ketua keluarga yang bertanggungjawab menyara, melindungi dan membimbing ahli keluarga ke arah kesejahteraan holistik. Namun, peningkatan kes penceraian, pengabaian nafkah, konflik rumah tangga, ketidakseimbangan peranan gender, serta pengabaian terhadap keperluan asas dan emosi kanak-kanak menunjukkan wujudnya krisis dalam pelaksanaan peranan kepimpinan tersebut. Kajian dijalankan bagi menilai tahap kepimpinan lelaki dalam keluarga serta mengkaji implikasinya terhadap peranan gender, penjagaan anak dan pemerksaan institusi keluarga. Reka bentuk kajian ini menggunakan kaedah kuantitatif yang melibatkan soal selidik ke atas 213 responden lelaki yang merupakan bapa dan masih dalam ikatan perkahwinan. Hasil kajian ini mempunyai implikasi terhadap pembangunan dasar kekeluargaan, pengarusutamaan gender dan strategi pencegahan pengabaian kanak-kanak.

Kata Kunci: Kepimpinan Lelaki, Pemerksaan Keluarga, Peranan Gender, Amalan Penjagaan Anak, Faktor Sosial, Faktor Ekonomi.

1.0 PENGENALAN

Kepimpinan lelaki dalam institusi keluarga merupakan aspek penting yang mempengaruhi kesejahteraan keluarga secara menyeluruh, merangkumi dimensi peranan gender, penjagaan anak, dan pemerksaan keluarga. Dalam konteks masyarakat Malaysia yang berbilang kaum dan budaya, konsep kepimpinan lelaki sering dikaitkan dengan tanggungjawab sebagai pelindung (*qawwam*), pendidik, pembimbing, serta pengawal kesejahteraan keluarga (Putong & Azhari, 2020; Starowicz et al., 2023). Kepimpinan yang berkesan bukan sahaja melibatkan kuasa membuat keputusan, tetapi juga keupayaan mengimbangi tuntutan ekonomi, emosi, sosial, dan rohani ahli keluarga.

Konsep *qawwam* yang dirujuk dalam al-Quran (Q.S. An-Nisa: 34) menegaskan peranan lelaki sebagai pemimpin keluarga yang memikul tanggungjawab melindungi dan menyara ahli keluarga, serta memastikan keharmonian rumah tangga (Putong & Azhari, 2020; Syahroni & Nurrohim,

2025). Dalam perspektif moden, peranan ini turut merangkumi penyertaan aktif dalam penjagaan anak dan sokongan emosi kepada pasangan (Harun & Mohamad Ali, 2021). Perubahan struktur masyarakat, peningkatan penyertaan wanita dalam tenaga kerja, serta tuntutan kehidupan moden telah mengubah bentuk dan cabaran kepimpinan lelaki dalam keluarga (Hilmi et al., 2023).

Kajian antarabangsa dan tempatan menunjukkan bahawa kepimpinan lelaki yang positif dikaitkan dengan tahap kepuasan keluarga, keupayaan menyelesaikan konflik, dan pembahagian peranan gender yang lebih seimbang (Sukumaran, 2013; Cong et al., 2022). Sebaliknya, kelemahan dalam dimensi kepimpinan boleh menyumbang kepada ketegangan rumah tangga, konflik kerja-keluarga, dan penurunan tahap pemerkasaan keluarga (Sanaz et. al., 2014; Sumari et al., 2020).

Di Malaysia, wacana mengenai kesaksamaan gender dan pembahagian peranan dalam keluarga semakin mendapat perhatian, terutamanya melalui dapatan kajian Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN, 2023) yang menunjukkan perubahan sikap masyarakat terhadap peranan bapa dalam penjagaan anak. Walau bagaimanapun, masih terdapat jurang dalam memahami bagaimana dimensi kepimpinan lelaki mempengaruhi kesejahteraan keluarga secara kuantitatif, termasuk hubungan langsung dan tidak langsung dengan pemerkasaan keluarga, persepsi peranan gender, dan amalan penjagaan anak.

Sehubungan itu, kajian ini dijalankan untuk mendapatkan gambaran tahap kepimpinan lelaki dalam keluarga, menganalisis kekuatan dan arah hubungan antara pemboleh ubah yang terlibat, serta menguji model secara serentak. Dapatan kajian diharapkan dapat memberikan sumbangan signifikan kepada pembangunan polisi keluarga, modul intervensi, dan pengayaan literatur sedia ada dalam bidang kajian keluarga dan gender di Malaysia.

Kajian ini penting kerana ia menyediakan gambaran empirikal tentang tahap kepimpinan lelaki dalam institusi keluarga di Malaysia, diukur melalui dimensi pelindung, didikan dan bimbingan, serta kawalan dan pengawasan. Dapatan ini membolehkan pihak berkepentingan memahami kekuatan dan kelemahan setiap dimensi kepimpinan lelaki, seterusnya mengenal pasti ruang penambahbaikan.

Dari perspektif praktikal, dapatan kajian ini dapat digunakan oleh agensi kerajaan, badan bukan kerajaan (NGO), dan institusi masyarakat untuk merangka intervensi yang memfokuskan kepada pengukuhan kepimpinan lelaki yang menyokong kesaksamaan gender dan penglibatan aktif dalam penjagaan anak. Hasil kajian ini juga berpotensi menjadi asas kepada pembangunan modul latihan, kempen kesedaran, dan polisi keluarga yang responsif terhadap keperluan masyarakat Malaysia yang berbilang kaum dan budaya.

2.0 SOROTAN LITERATUR

2.1 KONSEP KEPIMPINAN LELAKI DALAM KELUARGA

Kepimpinan lelaki dalam keluarga merujuk kepada tanggungjawab seorang lelaki untuk memimpin, melindungi, mendidik, dan membimbing ahli keluarganya bagi menjamin kesejahteraan keseluruhan unit keluarga. Konsep ini turut digariskan dalam al-Quran melalui istilah *qawwam*, yang dalam Surah An-Nisa ayat 34 menekankan peranan lelaki sebagai pelindung dan penyara keluarga berdasarkan tanggung jawab moral, material, dan spiritual (Putong & Azhari, 2020; Syahroni & Nurrohim, 2025).

Dalam konteks sosiologi keluarga moden, kepimpinan ini tidak lagi terhad kepada peranan penyara kewangan, tetapi melibatkan penglibatan aktif dalam penjagaan anak, pembahagian kerja rumah, dan pengambilan keputusan secara kolektif (Starowicz et al., 2023). Peranan ini membentuk keseimbangan kuasa dalam keluarga, yang mempengaruhi dinamika hubungan suami-isteri serta perkembangan anak (Harun & Mohamad Ali, 2021).

2.2 DIMENSI KEPIMPINAN LELAKI

Kajian ini mengukur kepimpinan lelaki melalui tiga dimensi utama iaitu:

1. **Pelindung** yang melibatkan tanggungjawab menjaga keselamatan fizikal, emosi, dan ekonomi keluarga.
2. **Didikan dan bimbingan** yang merangkumi pemberian tunjuk ajar, sokongan rohani, dan pengasuhan nilai.
3. **Kawalan dan pengawasan** yang melibatkan pemantauan terhadap tingkah laku ahli keluarga dan memastikan kepatuhan kepada norma dan nilai keluarga.

Instrumen seperti *Conformity to Masculine Norms Inventory (CMNI-30)*, *Gender Equitable Men (GEM)*, dan *Family Adaptability and Cohesion Evaluation Scale (FACES III)* telah digunakan dalam pelbagai konteks untuk mengukur aspek ini (Mahalik et al., 2007; Olson, 2011; Sukumaran, 2013). Kajian tempatan telah mengesahkan kesahan bahasa dan budaya bagi instrumen ini, membolehkan penilaian yang lebih tepat dalam konteks Malaysia (Cong et al., 2022).

2.3 KEPIMPINAN LELAKI DAN KESEJAHTERAAN KELUARGA

Kesejahteraan keluarga merangkumi dimensi fizikal, emosi, ekonomi, dan sosial yang saling berkait (LPPKN, 2023). Kepimpinan lelaki yang berkesan sering dikaitkan dengan tahap pemerkasaan keluarga yang lebih tinggi, keupayaan mengurus konflik, dan peningkatan kepuasan keluarga (Sumari et al., 2020).

Sebaliknya, kelemahan dalam kepimpinan boleh meningkatkan risiko konflik kerja–keluarga, menjejaskan sokongan emosi, dan mengurangkan kualiti penjagaan anak (Sanaz et al., 2014). Kajian antarabangsa mendapati bahawa penglibatan bapa dalam penjagaan anak bukan sahaja memberi manfaat kepada perkembangan anak, malah meningkatkan kesejahteraan pasangan (Jeong et al., 2023).

2.4 KEPIMPINAN LELAKI DAN PERSEPSI PERANAN GENDER

Persepsi terhadap peranan gender mempengaruhi pembahagian tugas dalam rumah tangga serta cara pasangan berinteraksi (Kabeer, 2015). Di negara membangun seperti Malaysia, peralihan ke arah kesaksamaan gender masih berhadapan dengan cabaran nilai budaya dan norma tradisional (Harris & Muhtar, 2019). Kajian menunjukkan bahawa lelaki yang mengamalkan kepimpinan inklusif lebih cenderung menyokong pembahagian kerja rumah secara adil dan menyertai penjagaan anak (Starowicz et al., 2023).

Instrumen GEM digunakan untuk mengukur sejauh mana individu bersetuju dengan prinsip kesaksamaan gender, dan telah diaplikasikan dalam pelbagai kajian pembangunan sosial (Sukumaran, 2013).

2.5 KEPIMPINAN LELAKI DAN AMALAN PENJAGAAN ANAK

Amalan penjagaan anak melibatkan penglibatan bapa dalam pengasuhan, penyediaan keperluan, dan sokongan emosi (Harun & Mohamad Ali, 2021). Kajian lepas mendapati bahawa penglibatan bapa yang konsisten memberi kesan positif terhadap perkembangan kognitif, emosi, dan sosial anak (Lamb, 2010). Dalam masyarakat Malaysia, penglibatan ini semakin meningkat seiring perubahan struktur pekerjaan dan sokongan dasar kerajaan seperti cuti paterniti (LPPKN, 2023).

2.6 JURANG KAJIAN

Walaupun banyak kajian telah meneliti aspek kepimpinan lelaki, kebanyakan daripadanya berfokus pada satu atau dua dimensi sahaja, tanpa menguji model teori secara serentak. Kajian tempatan juga masih terhad dalam menggabungkan pelbagai instrumen yang telah disahkan kesahan budaya bagi mengukur hubungan langsung dan tidak langsung antara kepimpinan lelaki, pemerkasaan keluarga, persepsi peranan gender, dan amalan penjagaan anak. Oleh itu, kajian ini bertujuan mengisi jurang tersebut dengan menggunakan pendekatan analisis *Structural Equation Modeling* (SEM) bagi menguji kesan langsung dan tidak langsung pemboleh ubah yang terlibat secara serentak.

3.0 METODOLOGI

Kajian ini menggunakan reka bentuk kuantitatif berbentuk tinjauan (survei) dengan instrumen soal selidik. Persampelan bertujuan digunakan dengan kriteria khusus bahawa responden mestilah seorang bapa yang masih dalam ikatan perkahwinan. Sebanyak 227 responden telah mengisi soal selidik, namun hanya 213 responden melepasi soalan saringan dan dianalisis. Saiz ini dianggap mencukupi kerana melebihi keperluan minimum bagi hubungan sederhana dalam kajian korelasi (Faul et al., 2009) dan cadangan minimum 200 responden untuk model SEM bersaiz sederhana (Wolf et al., 2013).

Data dikumpulkan secara dalam talian melalui *Google Form* dari 17 Julai 2025 hingga 5 Ogos 2025. Pautan soal selidik diedarkan melalui rangkaian organisasi, kumpulan media sosial, dan kenalan responden yang memenuhi kriteria kajian.

Instrumen kajian terdiri daripada empat bahagian: (i) Profil Demografi Responden, (ii) Peranan Kepimpinan Lelaki dalam Keluarga, (iii) Kesan terhadap Peranan Gender, Penjagaan Anak dan Pemerkasaan Keluarga, dan (iv) Pengaruh Faktor Sosial dan Ekonomi terhadap Peranan Responden. Item menggunakan skala Likert lima mata kecuali soalan demografi.

3.1 ANALISIS DATA

Data dianalisis menggunakan perisian JASP versi 0.95. Analisis deskriptif digunakan untuk menggambarkan profil responden dan tahap setiap konstruk kajian berdasarkan skor min dan sisihan piawai. Pemeriksaan normaliti melalui nilai skewness dan kurtosis menunjukkan beberapa pemboleh ubah melebihi ± 3 , menandakan andaian normaliti tidak dipenuhi. Oleh itu, analisis korelasi Spearman digunakan untuk menguji hubungan antara kepimpinan lelaki dengan pemerkasaan keluarga, peranan gender, dan penjagaan anak, termasuk hubungannya dengan faktor sosial dan faktor ekonomi.

Seterusnya, *Structural Equation Modeling* (SEM) dijalankan untuk menilai kesan langsung dan tidak langsung kepimpinan lelaki terhadap pemboleh ubah bersandar dengan faktor sosial dan faktor ekonomi sebagai mediator. Kaedah *bootstrapping* sebanyak 5,000 ulangan digunakan bagi mendapatkan anggaran pekali laluan, ralat piawai, dan selang keyakinan 95%.

Ujian kebolehpercayaan menggunakan pekali Alpha Cronbach menunjukkan semua konstruk mencatatkan nilai melebihi piawaian minimum 0.60 (Hair et al., 2019), menandakan tahap konsistensi dalaman yang sederhana hingga sangat baik (Jadual 1).

Secara keseluruhan, analisis kebolehpercayaan ini menunjukkan bahawa instrumen kajian mempunyai kestabilan dan konsistensi dalaman yang memadai untuk menilai pemboleh ubah kajian dengan tepat.

Jadual 1: Nilai Alpha Cronbach dan bilangan item bagi konstruk kajian

Konstruk	Bilangan item	Cronbach's α	Tahap Kebolehpercayaan
Pelindungan	5	0.912	Sangat baik
Didikan & Bimbingan	4	0.876	Tinggi
Kawalan & Pengawasan	7	0.906	Sangat baik
Pemeriksaan Keluarga	6	0.912	Sangat baik
Peranan Gender	4	0.883	Sangat baik
Penjagaan Anak	4	0.943	Sangat baik
Sosial	2	0.645	Sederhana
Ekonomi	3	0.794	Boleh diterima

4.0 DAPATAN DAN PERBINCANGAN

4.1 PROFIL RESPONDEN

Profil responden merangkumi bangsa, agama, umur, tempoh perkahwinan, tahap pendidikan, pekerjaan, pendapatan isi rumah, tanggungjawab kewangan keluarga dan bilangan anak. Jadual 2 menunjukkan ringkasan profil responden.

Jadual 2: Profil responden

Perkara	Kategori	N (%)
Bangsa	Melayu	204 (96)
	Bumiputera Lain	4 (2)
	Cina	3 (1)
	India	1 (0)
	Lain-lain	1 (0)
Agama	Islam	211 (99)
	Kristian	1 (0)
	Lain-lain	1 (0)
Umur	18-29 tahun	7 (3)

	30-39 tahun	115 (54)
	40-49 tahun	45 (21)
	50-59 tahun	22 (10)
	60-69 tahun	24 (11)
Tempoh Perkahwinan	< 5 tahun	22 (10)
	5-10 tahun	54 (25)
	11-20 tahun	93 (44)
	> 20 tahun	44 (21)
Tahap Pendidikan	Menengah (MCE/SPM/SPVM/O Level)	10 (5)
	Menengah Tinggi (STPM/STAM/A Level)	1 (0)
	Sijil Kemahiran	9 (4)
	Diploma	25 (12)
	Ijazah Sarjana Muda	104 (49)
	Ijazah Sarjana	44 (21)
	Doktor Falsafah (PhD)	20 (9)
Pekerjaan	Bekerja Sendiri	30 (14)
	Berniaga	6 (3)
	GLC	17 (8)
	NGO (Sosial)	13 (6)
	Pekerja Gig	1 (0)
	Pelajar	1 (0)
	Penjawat Awam	44 (21)
	Pesara	16 (8)
	Swasta	79 (37)
	Tidak Bekerja	6 (3)
Pendapatan Isi Rumah	RM 2,000 dan ke bawah	14 (7)
	RM 2,001 - RM 4,000	36 (17)
	RM 4,001 - RM 6,000	33 (15)
	RM 6,001 - RM 8,000	37 (17)
	RM 8,001 dan ke atas	93 (44)
Tanggungjawab Kewangan Keluarga	Suami	96 (45)
	Isteri	4 (2)
	Berkongsi	113 (53)
Bilangan Anak	1-2 orang	73 (34)
	3-4 orang	103 (48)
	5 orang atau lebih	37 (17)

Profil responden menunjukkan bahawa majoriti adalah berbangsa Melayu (96%) dan beragama Islam (99%). Dari segi demografi, lebih separuh berada dalam lingkungan umur 30 hingga 39 tahun (54%), diikuti oleh kumpulan umur 40 hingga 49 tahun (21%). Sebahagian besar telah

berkahwin antara 11 hingga 20 tahun (44%), manakala 21% telah menempuh alam perkahwinan melebihi 20 tahun. Dari aspek pendidikan, hampir separuh responden memiliki Ijazah Sarjana Muda (49%), diikuti oleh Ijazah Sarjana (21%) dan Doktor Falsafah (9%), menunjukkan tahap kelayakan akademik yang tinggi dalam kalangan sampel kajian.

Dari segi kerjaya, sektor swasta merupakan penyumbang terbesar (37%), diikuti penjawat awam (21%) dan bekerja sendiri (14%). Pendapatan isi rumah menunjukkan taburan yang pelbagai, namun kumpulan berpendapatan RM8,001 dan ke atas mencatatkan peratusan tertinggi (44%), diikuti RM6,001-RM8,000 (17%). Dalam hal tanggungjawab kewangan keluarga, lebih separuh responden berkongsi beban kewangan dengan pasangan (53%), manakala 45% memikul tanggungjawab sepenuhnya sebagai suami. Bagi bilangan anak, hampir separuh responden mempunyai 3-4 orang anak (48%), manakala 34% mempunyai 1-2 orang anak.

4.2 TAHAP KEPIMPINAN LELAKI DALAM KELUARGA

Analisis deskriptif menunjukkan bahawa ketiga-tiga dimensi kepimpinan lelaki yang diukur berada pada tahap tinggi. Skor min tertinggi dicatatkan oleh dimensi Pelindung ($M = 4.685$, $SP = 0.513$), diikuti Didikan & Bimbingan ($M = 4.587$, $SP = 0.545$) dan Kawalan & Pengawasan ($M = 4.458$, $SP = 0.586$). Skor keseluruhan kepimpinan lelaki turut berada pada tahap tinggi ($M = 4.577$, $SP = 0.513$).

Jadual 3: Analisis deskriptif dimensi kepimpinan lelaki

Dimensi Kepimpinan Lelaki	M	SP	Tahap
Pelindung	4.685	0.513	Tinggi
Didikan & Bimbingan	4.587	0.545	Tinggi
Kawalan & Pengawasan	4.458	0.586	Tinggi
Keseluruhan	4.577	0.513	Tinggi

Nota. Tahap: 1.00-2.33 = rendah; 2.34-3.66 = sederhana; 3.67-5.00 = tinggi.

Keputusan ini selari dengan konsep *qawwam* dalam Surah al-Nisa' ayat 34 yang menekankan tanggungjawab lelaki sebagai pemimpin, pelindung, pendidik, dan pengurus rumah tangga. Skor tertinggi pada dimensi pelindung menunjukkan komitmen dalam menjaga keselamatan dan kesejahteraan keluarga, manakala dimensi didikan dan bimbingan serta kawalan dan pengawasan menggambarkan peranan aktif dalam bimbingan nilai serta pengurusan rumah tangga secara adil. Pelaksanaan kepimpinan berasaskan prinsip amanah, keadilan, kasih sayang, musyawarah, dan teladan akhlak yang baik berpotensi memperkukuh kesejahteraan keluarga.

4.3 HUBUNGAN ANTARA KEPIMPINAN LELAKI DAN PEMBOLEH UBAH BERSANDAR

Ujian korelasi Spearman digunakan untuk menguji hubungan antara kepimpinan lelaki dengan tiga pemboleh ubah bersandar, iaitu pemerikasaan keluarga, peranan gender, dan penjagaan anak. Analisis bukan parametrik ini dipilih setelah mengambilkira nilai *skewness* dan *kurtosis* bagi beberapa pemboleh ubah melebihi ± 3 . Hasil analisis (Jadual 4) menunjukkan bahawa kepimpinan lelaki mempunyai hubungan positif yang signifikan dengan pemerikasaan keluarga ($\rho = .567$, $p < .001$), peranan gender ($\rho = .527$, $p < .001$) dan penjagaan anak ($\rho = .473$, $p < .001$).

Selain itu, kepimpinan lelaki juga mempunyai hubungan signifikan dengan faktor sosial ($\rho = .281$, $p < .001$) tetapi tidak dengan faktor ekonomi ($\rho = -.050$, $p = .471$). Hubungan antara pemboleh ubah bersandar juga menunjukkan korelasi yang tinggi, khususnya antara peranan gender dan pemerkasaan keluarga ($\rho = .750$, $p < .001$).

Hubungan yang kuat dengan pemerkasaan keluarga menggambarkan bahawa kepimpinan lelaki yang berkesan selaras dengan prinsip *qawwam* berupaya memperkukuh fungsi dan peranan keluarga, sekaligus menjadikannya agen perubahan yang dinamik. Hubungan positif dengan peranan gender pula menegaskan pembahagian tanggungjawab yang saling melengkapi antara lelaki dan wanita, yang apabila dilaksanakan mengikut prinsip keadilan dan saling menghormati, dapat mewujudkan suasana harmoni dalam keluarga. Sementara itu, hubungan dengan amalan penjagaan anak menunjukkan bahawa bapa yang berperanan aktif bukan sahaja memastikan pendidikan agama dan nilai moral anak-anak, tetapi juga melindungi mereka daripada pengaruh negatif, khususnya dalam konteks cabaran era digital.

Jadual 4: Analisis korelasi peranan kepimpinan lelaki dalam keluarga terhadap pemerkasaan keluarga, peranan gender dan penjagaan anak

Pemboleh ubah	1	2	3	4	5	6
1. Kepimpinan Lelaki	—					
2. Penjagaan Anak	.473***	—				
3. Peranan Gender	.527***	.745***	—			
4. Pemerkasaan Keluarga	.567***	.578***	.750***	—		
5. Faktor Sosial	.281***	.282***	.378***	.387***	—	
6. Faktor Ekonomi	-.050	.094	-.007	-.029	.040	—

Nota. * $p < .05$, ** $p < .01$, *** $p < .001$.

Secara keseluruhannya, dapatan ini mengesahkan bahawa kepimpinan lelaki yang berlandaskan tanggungjawab, perlindungan, bimbingan, dan keadilan merupakan asas penting bagi mewujudkan keluarga yang berdaya, seimbang, dan sejahtera.

4.4 ANALISIS SEM PERANAN KEPIMPINAN LELAKI

Analisis *Structural Equation Modeling* (SEM) digunakan untuk menguji kesan langsung dan tidak langsung kepimpinan lelaki terhadap pemerkasaan keluarga, peranan gender dan penjagaan anak, dengan faktor sosial dan faktor ekonomi sebagai pemboleh ubah mediator.

Kesan langsung kepimpinan lelaki adalah signifikan dan positif terhadap pemerkasaan keluarga ($\beta = 0.512$, $p < 0.001$), peranan gender ($\beta = 0.518$, $p < 0.001$) dan penjagaan anak ($\beta = 0.489$, $p < 0.001$). Ini menguatkan dapatan korelasi bahawa kepimpinan lelaki memberi impak yang konsisten ke atas ketiga-tiga aspek kesejahteraan keluarga.

Faktor sosial muncul sebagai mediator signifikan dalam hubungan kepimpinan lelaki dengan pemerkasaan keluarga ($\beta = 0.062$, $p = 0.006$) dan peranan gender ($\beta = 0.056$, $p = 0.009$). Hal ini menandakan bahawa sokongan daripada rangkaian sosial seperti keluarga besar, komuniti, atau rakan dapat memperkukuh lagi kesan positif kepimpinan lelaki terhadap fungsi keluarga. Walau bagaimanapun, mediasi sosial terhadap penjagaan anak tidak signifikan ($\beta = 0.035$, $p = 0.063$),

yang berkemungkinan menunjukkan bahawa penjagaan anak lebih dipengaruhi oleh penglibatan langsung bapa.

Jadual 5: Analisis SEM Peranan Kepimpinan Lelaki Dalam Keluarga Terhadap Pemerkasaan Keluarga, Peranan Gender Dan Penjagaan Anak

Laluan	B	SE	z	P	95% CI
Kesan Langsung					
Kepimpinan → Pemerkasaan Keluarga	0.512	0.069	7.462	<.001	[0.356, 0.629]
Kepimpinan → Peranan Gender	0.518	0.069	7.463	<.001	[0.376, 0.647]
Kepimpinan → Penjagaan Anak	0.489	0.082	5.945	<.001	[0.321, 0.642]
Kesan Tidak Langsung					
Kepimpinan → Sosial → Pemerkasaan Keluarga	0.062	0.023	2.753	.006	[0.025, 0.113]
Kepimpinan → Sosial → Peranan Gender	0.056	0.022	2.617	.009	[0.020, 0.105]
Kepimpinan → Sosial → Penjagaan Anak	0.035	0.019	1.857	.063	[0.003, 0.078]
Kepimpinan → Ekonomi → Pemerkasaan Keluarga	-0.0004	0.005	-0.078	.938	[-0.015, 0.008]
Kepimpinan → Ekonomi → Peranan Gender	-0.003	0.006	-0.425	.671	[-0.026, 0.004]
Kepimpinan → Ekonomi → Penjagaan Anak	-0.006	0.010	-0.579	.562	[-0.034, 0.008]

Sebaliknya, faktor ekonomi tidak menunjukkan kesan mediasi signifikan terhadap ketiga-tiga pemboleh ubah bersandar ($p > 0.05$), memberi isyarat bahawa kestabilan kewangan walaupun penting, bukanlah penghubung utama dalam hubungan ini. Faktor bukan material seperti komunikasi, bimbingan, dan sokongan emosi dilihat lebih berpengaruh.

Secara keseluruhan, hasil kajian menegaskan bahawa kepimpinan lelaki yang berkesan apabila disokong oleh faktor sosial yang positif mampu memperkukuh pemerkasaan keluarga, mengoptimumkan pembahagian peranan gender, dan meningkatkan amalan penjagaan anak, sekali gus mewujudkan keluarga yang lebih berfungsi dan sejahtera, tanpa mengira latar belakang budaya atau agama.

5.0 RUMUSAN

Kajian ini mengesahkan bahawa kepimpinan lelaki dalam keluarga berada pada tahap yang tinggi dalam ketiga-tiga dimensi yang diukur iaitu pelindung, didikan & bimbingan, serta kawalan & pengawasan. Kepimpinan lelaki yang efektif terbukti mempunyai hubungan positif dan signifikan dengan pemerkasaan keluarga, peranan gender, dan amalan penjagaan anak. Analisis SEM turut menunjukkan bahawa faktor sosial memainkan peranan sebagai mediator signifikan dalam hubungan antara kepimpinan lelaki dengan pemerkasaan keluarga dan peranan gender, manakala faktor ekonomi tidak memberikan kesan mediasi yang signifikan.

Dapatan ini menegaskan bahawa pengukuhan peranan kepimpinan lelaki yang berpaksikan prinsip tanggungjawab, perlindungan, bimbingan, dan keadilan dapat menyumbang secara langsung kepada keberfungsian keluarga. Sokongan sosial yang kukuh dilihat berupaya mengoptimumkan lagi kesan positif ini, sementara kestabilan ekonomi, walaupun penting, bukanlah faktor penghubung utama.

Kajian ini boleh diperluaskan kepada kumpulan responden daripada pelbagai kaum dan agama bagi memberikan gambaran yang lebih menyeluruh dan tepat tentang kedudukan kepimpinan lelaki dalam keluarga di Malaysia.

Namun secara praktikalnya, kajian ini dapat memberikan asas empirikal kepada pihak pembuat dasar, institusi masyarakat, dan badan bukan kerajaan untuk membangunkan intervensi dan modul latihan yang menekankan peranan kepimpinan lelaki yang seimbang, inklusif, dan responsif terhadap keperluan keluarga. Langkah ini penting bagi memastikan kesejahteraan keluarga dapat dipertingkatkan secara mampan dalam konteks masyarakat Malaysia yang berbilang kaum dan budaya.

6.0 RUJUKAN

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038-035

**TAHAP PENGETAHUAN, SIKAP DAN AMALAN TERHADAP ISU PERLINDUNGAN
KANAK-KANAK DALAM KALANGAN DEWASA DI MALAYSIA: KAJIAN
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ABSTRAK

Penderaan dan pengabaian kanak-kanak adalah isu yang semakin membimbangkan di Malaysia, bukan sahaja dari sudut hak asasi manusia malah dari sudut kesan jangka panjang terhadap kesejahteraan psikososial generasi masa depan. Kajian ini dijalankan bagi menilai tahap pengetahuan, sikap dan amalan orang dewasa di Malaysia terhadap isu perlindungan kanak-kanak, dengan memberi tumpuan kepada bagaimana masyarakat memahami dan bertindak terhadap kes penderaan serta pengabaian. Penyelidikan ini menggunakan pendekatan kaedah campuran melibatkan kajian kuantitatif nasional (n=1148) dan kajian kualitatif melalui temu bual mendalam dengan 10 responden daripada pelbagai latar belakang. Dapatan menunjukkan bahawa walaupun majoriti responden pernah mendengar istilah “perlindungan kanak-kanak”, tahap pengetahuan mendalam dan kefahaman terhadap bentuk penderaan, perkhidmatan bantuan yang tersedia, serta hak-hak kanak-kanak masih rendah. Selain itu, sikap masyarakat masih dipengaruhi oleh norma budaya dan kepercayaan tradisional yang menganggap hukuman fizikal seperti merotan sebagai wajar dan berkesan untuk mendisiplinkan kanak-kanak. Amalan pelaporan juga dilihat masih lemah, dengan lebih 30% responden menyatakan mereka tidak tahu kepada siapa harus dilaporkan, manakala sebahagian lagi memilih untuk tidak campur tangan kerana takut dibalas dendam, pelaku dihormati dalam komuniti atau kerana tidak mempercayai kewibawaan pihak berkuasa. Temu bual kualitatif mengesahkan wujudnya halangan sistemik dan psikososial seperti tekanan ekonomi, trauma sejarah serta kelemahan dalam sistem perlindungan semasa. Faktor seperti peranan pihak berkuasa, kekurangan tempat perlindungan dan kekaburan prosedur pelaporan turut menyumbang kepada kelambatan tindakan dalam kes penderaan. Responden juga menekankan keperluan meningkatkan kesedaran masyarakat melalui saluran media massa, pendidikan formal dan tidak formal, serta memperkasakan jaringan sokongan komuniti di peringkat tempatan. Oleh itu, kajian ini mengesyorkan agar strategi perlindungan kanak-kanak yang lebih menyeluruh digubal dengan menekankan kepada pendekatan advokasi berasaskan bukti, latihan kesedaran, penglibatan aktif komuniti serta reformasi dasar yang lebih responsif dan inklusif. Hasil kajian ini diharap dapat dijadikan rujukan utama kepada pembuat dasar, pendidik dan organisasi masyarakat sivil dalam merangka intervensi yang lebih berkesan untuk melindungi kanak-kanak Malaysia.

Kata Kunci: Perlindungan Kanak-Kanak, Pengetahuan, Sikap, Amalan, Penderaan Kanak-Kanak.

044-038

**INOVASI KESEDARAN KANSER PAYUDARA: MENJAMIN KESIHATAN WANITA,
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ABSTRACT

Kesedaran tentang kanser payudara adalah aspek penting dalam memastikan kesihatan wanita terpelihara, khususnya dalam konteks kesuburan dan peranan aktif wanita dalam pembangunan ekonomi. Pengesanan awal dan pemahaman terhadap risiko serta gejala awal mampu menyelamatkan nyawa dan mengurangkan beban kesihatan awam. Seiring dengan kemajuan era digital dan aspirasi *Society 5.0*, pendekatan inovatif seperti chatbot interaktif telah diperkenalkan untuk meningkatkan literasi kesihatan. *Breast Imaging Education Bot (BieBot©)* merupakan sebuah chatbot dwibahasa (Bahasa Melayu dan Inggeris) yang dibangunkan bagi menyampaikan maklumat yang sahih dan terkini berkaitan kanser payudara serta kaedah-kaedah saringan yang tersedia. Kandungan chatbot ini disertakan dengan elemen visual dan video yang dibangunkan selaras dengan garis panduan kesihatan kebangsaan. Ujian rintis yang melibatkan 100 peserta semasa program kesedaran pada Januari 2025 menunjukkan respons yang positif, khususnya dari segi kemudahan penggunaan, kefahaman maklumat, dan keberkesanan penyampaian visual. *BieBot©* membuktikan potensi teknologi pintar dalam memperkasa wanita melalui akses kepada

pendidikan kesihatan yang mudah dan berkesan, seterusnya menyumbang secara tidak langsung kepada penjagaan kesuburan serta peningkatan daya saing ekonomi negara.

Keywords: Kesedaran Kanser Payudara, Kesihatan Wanita, Literasi Kesihatan, Teknologi Pintar.

PENGENALAN

Peralihan kepada *Society 5.0* menandakan era transformasi baharu di mana teknologi dimanfaatkan secara menyeluruh bagi memenuhi keperluan masyarakat yang semakin kompleks melalui sistem pintar yang menggabungkan persekitaran digital dan fizikal. Dalam bidang kesihatan, konsep ini mendorong peralihan ke arah penyelesaian yang diperibadikan, bersifat antisipatif, serta berintegrasi dengan teknologi. Elemen teras kepada evolusi ini merangkumi penggunaan kecerdasan buatan (AI), Internet Benda (IoT), dan platform berasaskan data dalam menyokong kesihatan awam dan penjagaan pesakit.

Satu cabaran besar dalam kesihatan wanita, terutamanya dalam komuniti berpendapatan rendah dan sederhana, ialah kesedaran yang terhad tentang kanser payudara—tanda-tanda, faktor risiko, dan pilihan saringan. Walaupun kempen kesihatan sedang dijalankan, ramai individu masih kurang pengetahuan yang diperlukan untuk pengesanan awal dan intervensi tepat pada masanya. Kajian menunjukkan bahawa literasi kesihatan secara langsung mempengaruhi keputusan berkaitan saringan dan tingkah laku pencegahan. Oleh itu, meningkatkan pemahaman melalui platform digital yang disesuaikan telah menjadi strategi penting (Almoajel et. al, 2022).

Chatbot, atau alat perbualan berasaskan AI, menawarkan kaedah yang menjanjikan untuk menyebarkan maklumat kesihatan yang tepat secara mudah diakses dan mesra pengguna. Platform ini boleh menyampaikan kandungan yang dinamik dan sensitif terhadap konteks, mensimulasikan interaksi manusia, serta menyesuaikan respons berdasarkan pertanyaan pengguna. Keupayaannya untuk beroperasi secara berterusan dan menyesuaikan mesej mengikut keutamaan pembelajaran individu menjadikannya aset yang bernilai dalam promosi dan pendidikan kesihatan (Nadarzynski et. al, 2019).

METODOLOGI KAJIAN

Reka Bentuk dan Pembangunan Chatbot

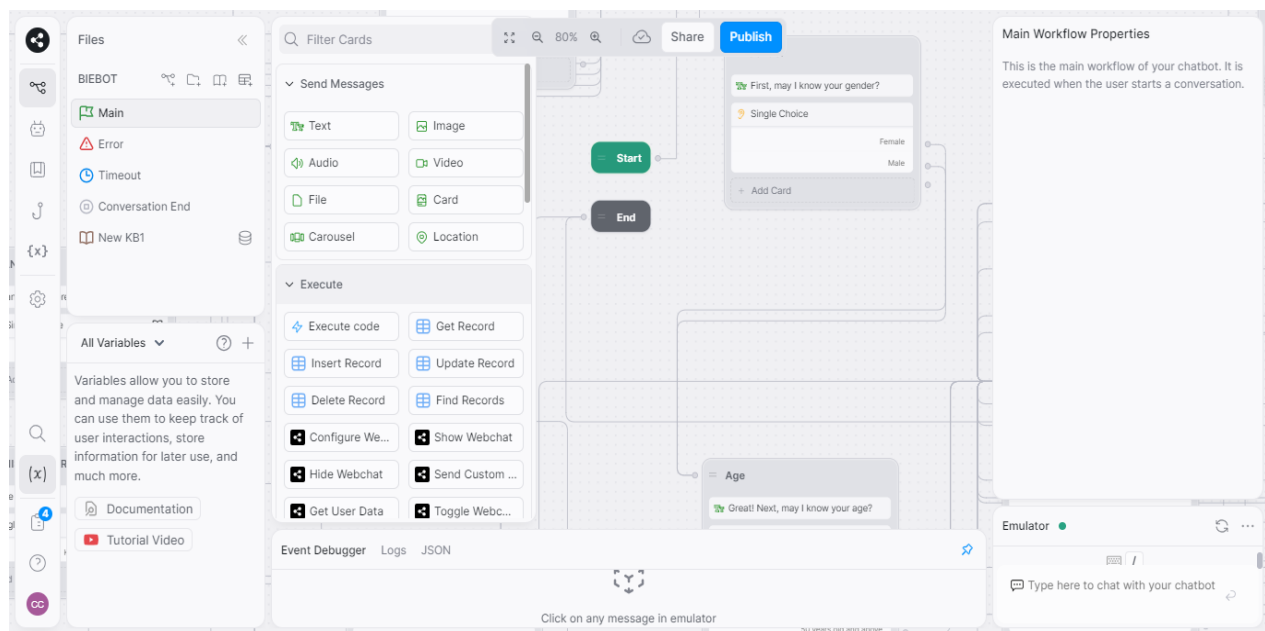
BieBot© dikonsepsikan oleh pasukan pelbagai disiplin yang terdiri daripada pakar onkologi, radiologi, dan reka bentuk pengajaran, dengan kerjasama pakar teknologi maklumat dan komunikasi kesihatan. Inisiatif ini bertujuan untuk merapatkan jurang kesedaran berkaitan kesihatan payudara, terutamanya dalam kalangan wanita berisiko, melalui pembantu digital yang bersifat intuitif, responsif, dan mesra pengguna. Pembangunan kandungan dan reka bentuk antara muka dilaksanakan secara berhati-hati agar selari dengan keperluan budaya dan bahasa tempatan, sekaligus meningkatkan keberkesanan komunikasi kesihatan.

Setelah menilai beberapa platform chatbot yang tersedia, termasuk aspek kebolehskalaan, keselamatan data, dan fleksibiliti pembangunan, pasukan memilih satu penyelesaian berasaskan

web (Rajah 1) yang memenuhi keperluan teknikal projek. Platform ini menyokong komunikasi berbilang bahasa, aliran perbualan interaktif, integrasi pelbagai jenis media seperti imej dan video, serta penjejakan sejarah interaksi pengguna bagi tujuan pemantauan dan penambahbaikan berterusan.

Pemilihan platform ini juga dipengaruhi oleh keupayaannya untuk disesuaikan dengan kandungan kesihatan tempatan serta kebolegunaan di pelbagai peranti, termasuk telefon pintar. *BieBot*® kemudiannya dibangunkan untuk menyokong penggunaan dwibahasa – Bahasa Inggeris dan Bahasa Malaysia – bagi meningkatkan keterangkuman, memperluas capaian, dan memastikan komunikasi kesihatan yang berkesan dalam konteks masyarakat Malaysia yang majmuk.

Pendekatan berpusatkan pengguna diterapkan sejak awal fasa perancangan, termasuk melalui sesi maklum balas bersama kumpulan sasaran, penilaian keperluan, dan pengujian kebolegunaan. Tumpuan diberikan kepada aspek kemudahan akses melalui peranti mudah alih, serta kesesuaian kandungan yang merangkumi pelbagai peringkat literasi kesihatan. Visual, infografik, dan video pendidikan dibangunkan berpandukan garis panduan Kementerian Kesihatan Malaysia bagi memastikan kesahihan maklumat dan pematuhan etika kesihatan.

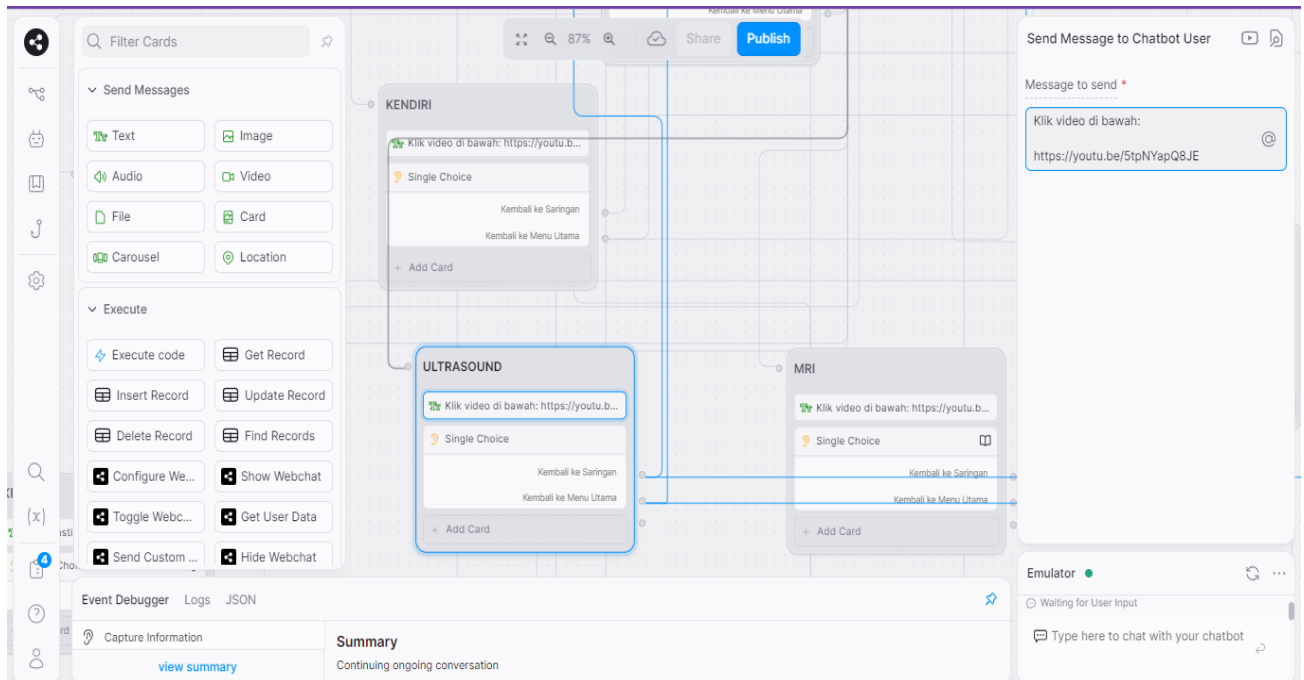


Rajah 1: Aliran kerja dalam Botpress

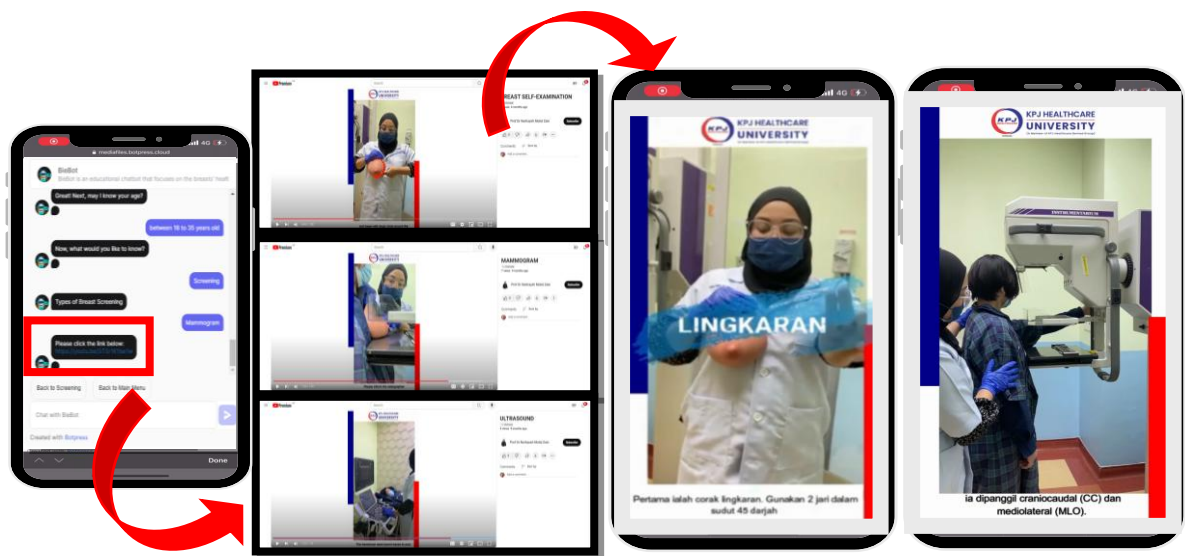
Penyampaian kandungan dalam *BieBot*® dilaksanakan melalui gabungan modul infografik dan video pendidikan pendek (Rajah 2) yang direka bentuk bagi memenuhi pelbagai gaya pembelajaran pengguna, termasuk visual dan auditori. Pendekatan multimodal ini dipilih untuk meningkatkan kefahaman dan pengekalan maklumat, terutama dalam kalangan pengguna yang mempunyai tahap literasi kesihatan yang berbeza.

Bagi memastikan kesahihan dan kesesuaian kandungan, semua bahan telah melalui proses penilaian pakar melibatkan profesional dalam bidang pengimejan perubatan dan kesihatan wanita.

Penilaian merangkumi aspek ketepatan fakta, kesesuaian bahasa, serta keberkesanan mesej dalam kedua-dua Bahasa. Proses ini memastikan bahawa setiap maklumat yang disampaikan adalah selaras dengan garis panduan kesihatan kebangsaan serta bersesuaian untuk penyampaian kepada khalayak umum.



Rajah 2: Penyisipan pautan video Pendidikan *YouTube* ke dalam bot.



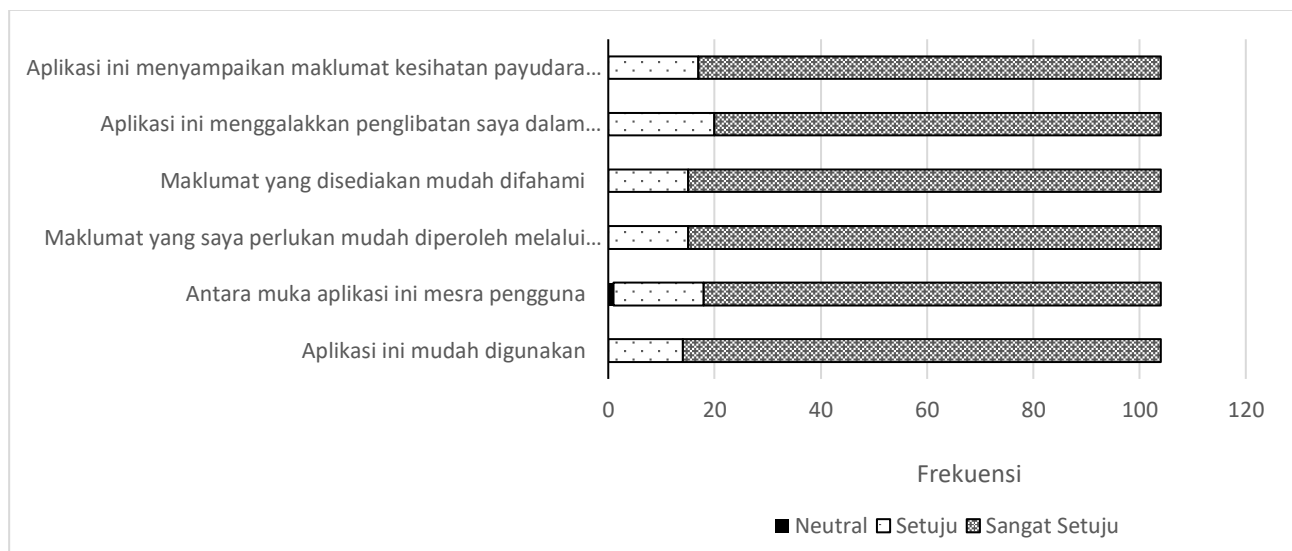
Rajah 3: Pautan video pendidikan di dalam bot.

Kajian Rintis

Chatbot ini telah melalui fasa ujian perintis semasa pelaksanaan kempen kesedaran kanser payudara pada Januari 2025. Seramai 100 orang wanita telah dipilih sebagai peserta kajian dan diminta untuk berinteraksi dengan prototaip *BieBot*®. Selepas sesi interaksi, peserta memberikan maklum balas melalui instrumen penilaian yang meneliti aspek kebolegunaan antara muka, kejelasan kandungan maklumat, serta tahap kepuasan keseluruhan terhadap pengalaman pengguna. Data yang diperoleh daripada penilaian ini digunakan untuk menambah baik reka bentuk dan kandungan chatbot sebelum pelaksanaan berskala lebih besar.

HASIL KAJIAN

Maklum balas pengguna (Rajah 3) menunjukkan respons yang sangat positif terhadap *BieBot*®. Sebilangan besar peserta menyatakan bahawa chatbot ini mudah digunakan dan menghargai pendekatan pendidikan yang bersifat visual serta menarik. Hasil tinjauan mendapati majoriti pengguna menilai aplikasi ini sebagai informatif dan mesra pengguna. Mereka turut memberi penekanan terhadap reka letak yang interaktif dan penggunaan elemen visual, yang dilihat berkesan dalam meningkatkan pemahaman serta mengekalkan minat sepanjang interaksi.

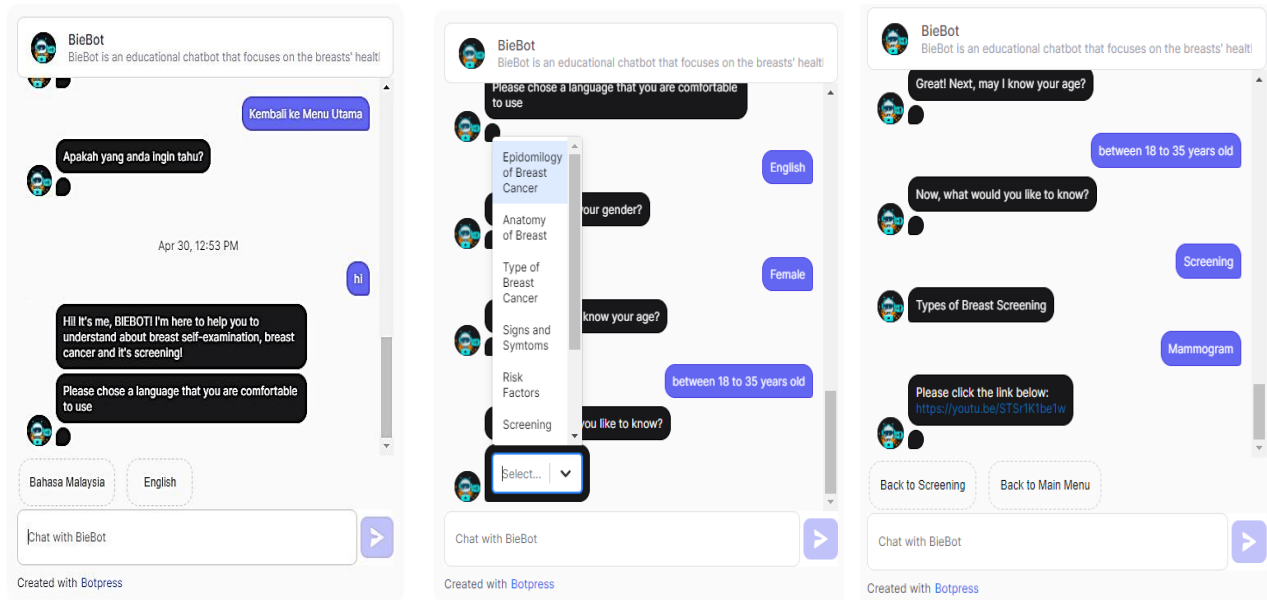


Rajah 4: Maklumbalas pengguna terhadap aplikasi *BieBot*®

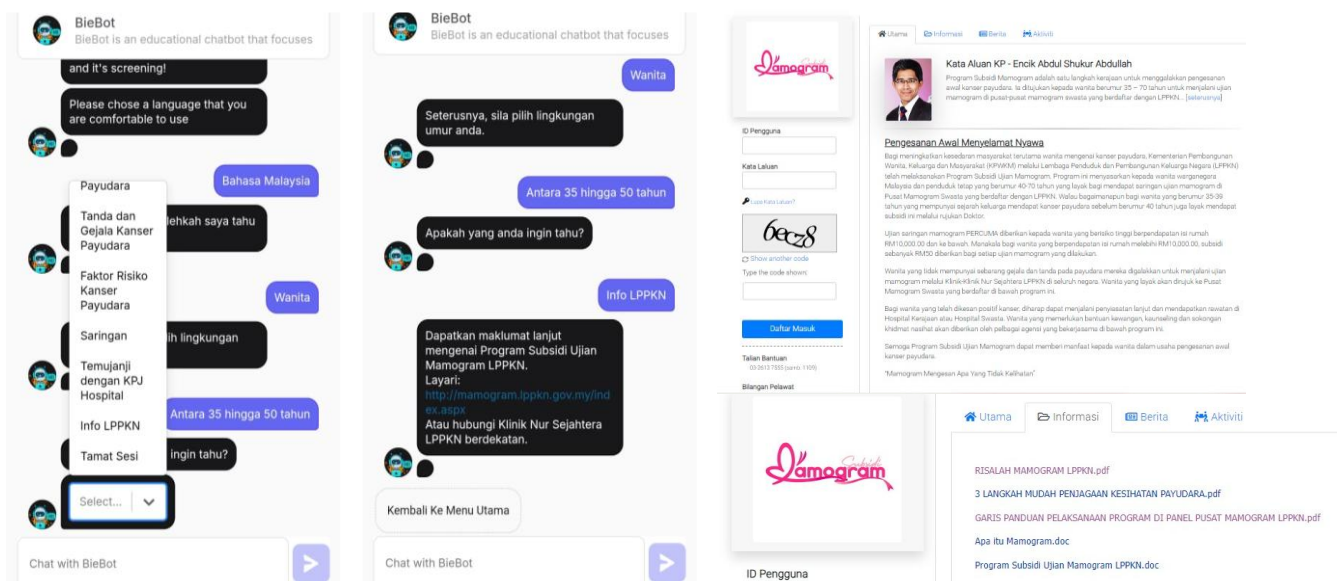
PERBINCANGAN

BieBot® merupakan contoh bagaimana teknologi boleh digunakan secara berkesan dalam pendidikan kesihatan dengan cara yang menarik dan inklusif. Dengan menyediakan maklumat yang mudah diakses dan boleh dipercayai dalam dua bahasa, ia memenuhi keperluan pelbagai lapisan masyarakat (Rajah 5). Gabungan teks, video, dan infografik dalam chatbot ini membantu mempermudah konsep perubatan yang kompleks serta menawarkan persekitaran pembelajaran yang selesa dan mengikut kadar sendiri.

Penyesuaianannya dengan konsep *Society 5.0* mencerminkan pendekatan progresif yang menggalakkan literasi kesihatan melalui pemperibadian berasaskan AI (Rajah 6). Keupayaannya untuk memberi respons secara masa nyata, menjejak interaksi pengguna, dan menyesuaikan laluan pembelajaran menjadikan pengguna lebih berdaya untuk memainkan peranan aktif dalam membuat keputusan berkaitan kesihatan mereka. Seiring dengan perkembangan alat ini, ia mempunyai potensi untuk digunakan dalam kempen kesihatan, persekitaran klinikal, dan pembelajaran jarak jauh.



Rajah 5: Ciri-ciri yang menawarkan keupayaan dwibahasa dan pilihan senarai maklumat.



Rajah 6. Pengguna juga boleh mendapatkan maklumat mengenai program Subsidi Mamogram oleh Kerajaan Malaysia melalui Laman Web LPPKN yang disepadukan dalam BieBot®.

KESIMPULAN

Pembangunan dan pelaksanaan rintis *BieBot*© menyerlahkan potensinya sebagai satu penyelesaian digital yang berkesan dalam meningkatkan literasi kesihatan payudara. Inisiatif ini berjaya mengatasi halangan tradisional dalam pendidikan kesihatan dengan menyediakan kandungan yang jelas, sahih dan dwibahasa dalam format yang menarik serta interaktif. Pendekatan ini bukan sahaja meningkatkan kefahaman, malah menggalakkan penglibatan pengguna secara aktif.

BieBot© mewakili satu langkah signifikan ke arah mewujudkan masyarakat yang lebih berpengetahuan dan berdaya, khususnya dalam kalangan wanita yang mendapat manfaat langsung daripada kesedaran awal dan pengesanan kanser payudara. Selain menyokong aspirasi *Society 5.0*, *BieBot*© turut berfungsi sebagai model inovatif yang boleh ditiru dalam bidang pendidikan kesihatan lain, di mana penggunaan teknologi digital berupaya mendorong kepada hasil kesihatan yang lebih baik.

PENGHARGAAN

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047-040

KEGANASAN RUMAH TANGGA: TAHAP PENGETAHUAN, PANDANGAN DAN AMALAN DALAM KALANGAN WANITA MALAYSIA

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ABSTRAK

Keganasan rumah tangga adalah isu global yang mempengaruhi individu dari pelbagai latar belakang sosioekonomi dan budaya. Kajian ini bertujuan menilai pengetahuan, pandangan dan sikap keganasan rumah tangga di kalangan wanita pernah berkahwin di Malaysia. Kajian juga mengeksplorasi bagaimana faktor-faktor ini mempengaruhi tingkah laku terhadap pencegahan dan intervensi keganasan rumah tangga. Kajian menggunakan pendekatan kuantitatif dengan reka bentuk kajian tinjauan keratan rentas serta kaedah pensampelan berstrata dua peringkat - negeri dan strata (bandar dan luar bandar). Responden adalah terdiri daripada wanita warganegara Malaysia yang berumur antara 15 hingga 49 tahun, pernah berkahwin dan menetap di Malaysia. Sejumlah 2,081 responden terlibat dalam kajian ini dan data dikumpulkan melalui temubual secara bersemuka dan edaran soal selidik secara dalam talian. Kajian ini menggunakan pendekatan soal selidik yang ditadbir sendiri (*self-administered*) dan tanpa nama (*anonymous*). Hasil kajian mendapati wanita di Malaysia mempunyai pengetahuan yang tinggi mengenai keganasan rumah tangga. Kajian juga merumuskan norma budaya dan sikap masyarakat memainkan peranan penting dalam persepsi mengenai keganasan rumah tangga. Pandangan tradisional yang mengekalkan stigma dan peranan gender (*gender roles stereotype*) sering menghalang perbincangan terbuka dalam masyarakat. Norma budaya ini menyebabkan mereka tidak melaporkan keganasan kepada pihak berkuasa, malu untuk tampil ke hadapan atau mendapatkan bantuan. Penilaian terhadap pandangan dalam kajian ini merumuskan sebahagian besar wanita Malaysia membenarkan perlakuan keganasan oleh pasangan mereka. Dari aspek amalan pula, majoriti responden tidak akan melaporkan keganasan rumahtangga kepada polis atau pihak berkuasa. Penemuan ini menekankan kepentingan program pendidikan dan strategi kesihatan awam yang meningkatkan kesedaran serta memberdayakan individu untuk bertindak proaktif dengan sokongan yang sistemik.

Kata Kunci: Keganasan Rumahtangga, Norma Budaya, Stigma, Peranan Gender, Stereotaip.

041-044

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ABSTRAK

Kestabilan perkahwinan merupakan asas keharmonian masyarakat dan negara. Namun demikian, data menunjukkan terdapat peningkatan kadar perceraian khususnya dalam kalangan pasangan muda pada tempoh lima tahun perkahwinan pertama. Pelbagai faktor didapati menyumbang kepada perceraian termasuklah isu tanggungjawab, nafkah, tiada persefahaman dan

campurtangan pihak ketiga. Bagi tujuan memperkasakan perkahwinan, pelbagai aktiviti dan program telah dirancang oleh agensi-agensi yang terlibat. Selain itu, perlu diteliti juga apakah faktor yang menyumbang kepada kestabilan perkahwinan yang telah menjangkau tempoh melebihi dua puluh tahun. Sehubungan itu, satu kajian telah dijalankan bertujuan meneroka faktor penentu kestabilan perkahwinan dalam kalangan pasangan muslim di Terengganu. Menggunakan pendekatan kualitatif, data diperolehi melalui temubual separa berstruktur yang melibatkan sebelas pasangan yang telah berkahwin untuk tempoh melebihi dua puluh tahun. Kesemua pasangan terlibat memiliki anak-anak sama ada yang telah bekerja atau masih belajar. Berdasarkan analisis tematik, terdapat sepuluh tema yang telah dikenal pasti menyumbang kepada kestabilan dan kebahagiaan perkahwinan iaitu faktor latar belakang keluarga, latar belakang pasangan, nafkah, agama, tanggungjawab, komunikasi, pengurusan rumah tangga, pengurusan emosi, pendidikan anak-anak dan kepatuhan. Kajian ini memberikan sumbangan bermakna kepada bidang pembangunan keluarga dan boleh dijadikan rujukan untuk penyediaan program intervensi serta dasar berkaitan institusi kekeluargaan di Malaysia.

Kata Kunci: Perkahwinan, Kestabilan, Terengganu, Nilai Budaya, Agama, Komunikasi.

PENDAHULUAN

Kestabilan perkahwinan adalah tunjang kepada keharmonian keluarga, masyarakat, dan pembangunan negara (Zakaria et al., 2019). Institusi perkahwinan yang stabil bukan sahaja menjamin perkembangan emosi dan sosial anak-anak, malah menyumbang kepada kestabilan sosial secara lebih (Nor, 2019). Namun begitu, statistik perceraian di Malaysia menunjukkan peningkatan, terutamanya dalam lima tahun pertama perkahwinan (Jabatan Kemajuan Islam Malaysia, 2023). Menurut Jabatan Perangkaan Malaysia (DOSM) terdapat sebanyak 62,890 kes perceraian pada tahun 2022 berbanding 43,936 kes pada tahun 2021, ini menunjukkan peningkatan yang ketara iaitu sebanyak peratus 43% (Jabatan Perangkaan Malaysia, 2023).

Di Terengganu, peningkatan permohonan perceraian di mahkamah menghampiri 50 peratus jika dibandingkan dengan jumlah perkahwinan pada tahun semasa iaitu pada tahun 2022, jumlah permohonan cerai di mahkamah adalah sebanyak 4,593 kes iaitu sekitar 43 peratus daripada 10,742 iaitu jumlah perkahwinan yang direkodkan pada tahun yang sama. Pola yang hampir sama juga ditunjukkan untuk tahun 2019, di mana jumlah permohonan cerai di mahkamah adalah sebanyak 4,589 kes, iaitu 44 peratus daripada 10,405 perkahwinan yang direkodkan pada tahun semasa. Dalam jadual 1 dijelaskan secara terperinci, walaupun data tersebut tidak menunjukkan jumlah permohonan cerai mengikut tahun pasangan berkahwin, namun konsistensi bilangan perkahwinan, permohonan cerai, khidmat nasihat dan kes cerai untuk tempoh lima tahun memberikan satu rumusan awal berkaitan pola perceraian di Terengganu.

Jadual 1: Jumlah perkahwinan, khidmat runding cara, permohonan mahkamah dan cerai Terengganu 2019–2023

Tahun	Bilangan perkahwinan	Khidmat runding cara	Peratus mendapatkan nasihat (%)	Permohonan cerai di mahkamah	Bilangan perceraian	Peratus perceraian (%)
2019	10,405	1,517	14	4,589	2,449	23
2020	10,456	1,147	11	4,129	1,224	12
2021	12,394	1,012	8	3,360	2,169	17
2022	10,742	1,316	12	4,593	1,800	17
2023	9,722	959	10	4,539	1,802	18

Sumber: Mahkamah Syariah Terengganu dan Jabatan Hal Ehwal Agama Terengganu (2024)

Sekali pun data menunjukkan pola perceraian yang agak membimbangkan di Terengganu, tidak dinafikan bahawa majoriti pasangan masih mampu mempertahankan perkahwinan mereka sehingga mencecah lebih dua dekad. Justeru, kajian perlu dilakukan bagi mengenalpasti apakah faktor yang menyumbang kepada kestabilan perkahwinan kerana dapatan tersebut sangat penting dalam usaha memperkasakan perkahwinan. Setiap perkahwinan sudah pasti ada cabaran dan dugaan, namun mereka berusaha mempertahankan perkahwinan secara matang. Oleh itu, kajian kualitatif melalui kaedah temubual dijalankan dalam kalangan pasangan Muslim di Terengganu yang telah berkahwin lebih dua dekad bagi meneliti apakah faktor yang menyumbang kepada kestabilan rumah tangga.

Kestabilan perkahwinan telah menjadi fokus pelbagai penyelidikan terdahulu yang menekankan aspek psikososial, budaya, dan keagamaan. Gottman & Silver, (1990) memperkenalkan teori "*The Seven Principles for Making Marriage Work*" yang menekankan komunikasi, penghargaan, dan pengurusan konflik sebagai elemen penting dalam rumah tangga yang stabil. Dalam konteks Malaysia, kajian oleh Baharudin et al., (2018) mendapati bahawa nilai-nilai budaya Melayu seperti hormat-menghormati, sabar, dan tanggungjawab bersama adalah kunci dalam mengekalkan keharmonian rumah tangga.

Menurut Ibrhim et al., (2024) pula, bagi mengekalkan sesebuah institusi perkahwinan, setiap pasangan perlu memainkan peranan dan tanggungjawab masing-masing khususnya bagi menghadapi situasi di luar yang lebih mencabar. Perkara ini selari dengan pandangan yang dikemukakan oleh Zakaria (2023) bahawa setiap tanggungjawab dan peranan perlu dilaksanakan bersama, kerana perkahwinan yang stabil dan kukuh memerlukan kerjasama antara dua pihak.

Selain itu, dalam mewujudkan keseimbangan dan kestabilan perkahwinan menurut Zakaria (2023) lagi, peranan agama sangat penting. Hal ini kerana pasangan yang mengutamakan agama akan berbincang dengan lebih baik, melaksanakan tanggungjawab agama, pendidikan, ekonomi dan lain-lain bersandarkan Al-Quran dan hadis. Nurliana (2022) juga menyokong bahawa pasangan

Muslim yang mengamalkan ibadah bersama lebih cenderung menunjukkan tahap kepuasan perkahwinan yang tinggi dan menghadapi cabaran dengan lebih matang.

Kajian oleh Zakaria (2023) juga mendapati empat (4) elemen dalam perkahwinan iaitu mendalami ilmu fadhu ain, melaksanakan pergaulan yang baik, tanggungjawab dalam urusan nafkah, dan terakhir menjaga kehormatan diri dan pasangan.

METODOLOGI

Reka Bentuk Kajian

Kajian ini menggunakan pendekatan kualitatif dengan reka bentuk kajian fenomenologi. Reka bentuk ini dipilih kerana ia membolehkan penyelidik memahami pengalaman hidup pasangan Muslim berhubung dengan faktor-faktor yang menyumbang kepada kestabilan perkahwinan mereka.

Lokasi Kajian

Kajian dijalankan di negeri Terengganu kerana negeri ini mempunyai majoriti masyarakat Muslim yang masih mengekalkan nilai kekeluargaan tradisional di samping menerima pengaruh moden.

Peserta Kajian

Peserta kajian terdiri daripada pasangan Muslim yang telah berkahwin sekurang-kurangnya 20 tahun. Pemilihan informan dilakukan secara pensampelan bertujuan melibatkan sebelas pasangan.

Kaedah Pengumpulan Data

Data dikumpulkan melalui temu bual separa berstruktur yang dijalankan secara bersemuka. Soalan temu bual dibina berasaskan kajian lepas dan juga teori berkaitan. Data temu bual dirakam menggunakan perakam audio dengan kebenaran peserta dan ditranskripsikan secara verbatim untuk tujuan analisis data.

Analisis Data

Data dianalisis menggunakan analisis tematik. Kaedah tematik merupakan salah satu kaedah yang sesuai untuk menganalisis dan mengklasifikasikan tema (Braun & Clarke, 2022). Ia dapat menggambarkan data secara terperinci yang mempunyai pelbagai subjek kajian melalui tafsiran kajian (Alhojailan, 2012). Proses ini melibatkan beberapa langkah iaitu membaca semula transkrip secara menyeluruh, mengenal pasti kod awal yang berkaitan dengan faktor kestabilan

perkahwinan, mengumpulkan kod kepada tema yang lebih luas dan menyemak semula tema agar konsisten dengan objektif kajian. Untuk meningkatkan kredibiliti data, kaedah triangulasi penyelidik dan semakan peserta (member checking) digunakan.

Etika Kajian

Kajian ini mematuhi prinsip etika penyelidikan dengan mendapatkan persetujuan bertulis daripada peserta, menjaga kerahsiaan identiti mereka, dan memastikan kerelaan untuk menarik diri bila-bila masa tanpa sebarang implikasi.

DAPATAN KAJIAN DAN PERBINCANGAN

Demografi responden

Sebanyak sebelas informan terlibat dalam kajian ini (Jadual 1). Informan terdiri dari pasangan yang telah berkahwin dalam tempoh antara 20 tahun hingga 52 tahun, iaitu satu tempoh yang begitu matang serta telah melalui pelbagai cabaran dalam memastikan kestabilan perkahwinan. Temubual melibatkan kedua-dua pasangan suami dan isteri bagi membolehkan input diperoleh dari kedua-dua pihak. Pemerhatian semasa temubual menunjukkan suami dan isteri saling menyokong dan menghormati pandangan yang diberikan. Memandangkan kebanyakan pasangan telah berusia antara 47 tahun hingga 72 tahun, mereka kelihatan tenang dan sabar serta matang dalam memberikan pandangan masing-masing. Kebanyakan informan memiliki anak-anak yang sudah remaja dan dewasa dan telah berkahwin, selari dengan tempoh perkahwinan mereka yang melebihi 20 tahun. Bilangan anak-anak informan adalah antara dua orang hingga tiga belas orang, namun demikian, majoriti informan memiliki anak lima dan tujuh orang. Dari segi status sosioekonomi, informan terdiri dari pelbagai latar belakang pendidikan dan pekerjaan. Taraf pendidikan terendah adalah SPM dan tertinggi peringkat PhD. Dari segi pekerjaan, ada informan yang menjadi suri rumah sepenuh masa, manakala ada yang bekerja di sektor swasta dan sektor awam.

Ciri demografi	BG1	BG2	BG3	BG4	BG5	BG6	BG7	BG8	BG9	BG10	BG11
Umur suami	47	72	51	70	47	71	70	59	67	72	68
Umur isteri	47	70	47	67	47	62	67	59	61	70	63
Tempoh perkahwinan (tahun)	20	44	21	50	22	41	42	31	37	52	44
Bilangan anak	5	4	2	7	5	7	2	5	5	7	13
Taraf Pendidikan suami	Ijazah Sarjana Muda	MCE	Sijil MARA	SKM/ SVM	Ijazah	Master	MCE	Ijazah Sarjana Muda	Diploma	Diploma	Sek rendah
Taraf Pendidikan isteri	PhD	MCE	SPM	SPM	Ijazah	STPM	MCE	Ijazah Sarjana Muda	Diploma	Sijil	Ting 3

Jadual 1: Demografi informan

Faktor penentu kestabilan perkahwinan

Berdasarkan analisis tematik, terdapat sepuluh tema yang telah dikenal pasti menyumbang kepada kestabilan dan kebahagiaan perkahwinan iaitu faktor latar belakang keluarga, latar belakang pasangan, nafkah, agama, tanggungjawab, komunikasi, pengurusan rumah tangga, pengurusan emosi, pendidikan anak-anak dan kepatuhan.

Latar Belakang Keluarga

Latar belakang keluarga memainkan peranan dalam membentuk nilai dan sikap individu (Ismail et., 2022). Analisis temu bual mendapati pengalaman dan nilai yang diteruskan dari keluarga asal dapat mempengaruhi interaksi dan persepsi pasangan terhadap kebahagiaan. Informan menjelaskan keluarga akan membentuk tingkah laku dan peribadi anak-anak dan seterusnya akan menentukan cara mereka bertingkah laku dalam perkahwinan bersama pasangan. Sebagaimana menurut informan BG11, *"Pergaulan dan percakapan dia selalunya menurun dari mak ayah – kalau baik, maka dia juga akan melakukan perkara yang sama dengan pasangannya"*. Perkara ini turut diakui oleh informan BG 10, *"kita kena cari dari pasangan yang mempunyai latar belakang keluarga yang stabil, kerana ia menjadi contoh untuk pasangan apabila berkeluarga"*. Informan turut menekankan pentingnya mengetahui asal usul pasangan sebelum membina keluarga. Contohnya, *"keturunan kena tengok juga, kena tahu latar belakang dia"* menunjukkan bahawa latar belakang keluarga menjadi penentu dalam memahami sifat dan pengalaman pasangan. Selain itu, pengalaman hidup yang sukar, seperti yang dilalui oleh informan BG4, *"saya datang dari keluarga yang ibu bapa bercerai" dan "keluarga susah, adik-beradik ada 14 orang"*, dijadikan inspirasi untuk memperbaiki kehidupan sendiri. Hal ini membuktikan bahawa cabaran masa lalu boleh membentuk kecekalan dan kesedaran dalam membina masa depan.

Hubungan kekeluargaan yang erat dan pengajaran nilai kekeluargaan turut diberi perhatian sebagaimana yang dinyatakan oleh informan BG11. Contohnya, elemen seperti *"anak kita kenal keluarga dia dulu" dan "pergaulan turun dari mak ayah"* menunjukkan kepentingan hubungan kekeluargaan dalam membentuk keperibadian anak-anak. Kesepaduan antara ahli keluarga, meskipun datang daripada pelbagai latar belakang, menjadi asas untuk mencapai keharmonian. Selain itu, penekanan terhadap nilai tradisional, seperti saling menghormati dan menjaga hubungan baik antara keluarga besar, menyerlahkan usaha untuk memastikan keseimbangan antara generasi.

Latar belakang keluarga memainkan peranan penting dalam membentuk nilai dan sikap individu. Sikap pasangan yang mempunyai latar belakang positif cenderung untuk melahirkan generasi yang lebih bahagia. Keluarga dengan sejarah positif dan pengalaman baik lebih cenderung untuk melahirkan generasi yang bahagia. Antara elemen penting dalam latar belakang keluarga ialah pendidikan awal. Pendidikan yang baik dari ibu bapa memberi kesan positif kepada perkembangan anak-anak. Di samping itu juga, budaya dan cara hidup keluarga sangat penting. Hal ini boleh mewujudkan interaksi sosial yang baik dan harmoni dalam keluarga. Selain itu, hubungan baik dengan masyarakat sekitar juga terjaga seterusnya dapat memperkukuhkan lagi ikatan kekeluargaan.

Latar Belakang Pasangan

Latar belakang pasangan juga mempengaruhi kebahagiaan keluarga. Faktor-faktor seperti pendidikan, nilai-nilai serta budaya baharu yang dibawa dari keluarga asal, dan pengalaman hidup sebelum perkahwinan dapat mempengaruhi dinamik rumah tangga. Analisis temu bual mendapati bahawa latar belakang yang berbeza mewujudkan cabaran dalam hubungan tetapi dalam masa yang sama juga membuka ruang dan peluang untuk saling melengkapi. Justeru kesedaran tentang perbezaan ini penting untuk membina hubungan yang sihat. Faktor ini dijelaskan oleh informan BG4, *“Suami saya seorang yang tegas pendirian dan bertanggungjawab dalam semua perkara”*. Begitu juga menurut informan BG9: *“Suami saya seorang yang berpendidikan agama, boleh bertoleransi, hormat orang tua dan boleh memahami saya”*. Seterusnya, dari pandangan seorang suami pula, oleh informan BG 4, *“Isteri saya bukan sahaja seorang yang bertolak ansur tetapi juga seorang yang tegas dalam mendidik anak-anak”*. Melalui temu bual tersebut, dapat dilihat bahawa antara ciri yang menyumbang kestabilan perkahwinan adalah saling menghargai dan memberi fokus kepada kelebihan yang ada pasangan masing-masing.

Tema ini menjelaskan aspek latar belakang pasangan, khususnya dalam konteks keperibadian, pengalaman awal perkahwinan, dan nilai-nilai yang dipegang bersama. Subtema utama memperlihatkan ciri-ciri positif dalam hubungan, di mana suami digambarkan sebagai seorang yang sabar, bertanggungjawab, tegas, dan cermat dalam menguruskan kewangan keluarga. Sebagai contoh, beberapa pasangan menyebut bahawa suami mereka tidak mudah marah dan bersikap toleransi terhadap kerenah isteri, yang menunjukkan kematangan emosional dalam perkahwinan. Selain itu, suami yang berperanan sebagai pemimpin dalam keluarga turut dipuji atas usaha mereka dalam memastikan keseimbangan kehidupan rumah tangga. Pengalaman awal sebelum perkahwinan turut disentuh, di mana beberapa pasangan mula membina hubungan mereka melalui aktiviti yang berteraskan agama atau minat yang sama, seperti terlibat dalam persatuan mahasiswa Islam.

Tema ini juga memberi perhatian kepada nilai-nilai agama yang menjadi teras hubungan, di mana pasangan menjadikan amalan seperti solat, kesabaran, dan kesederhanaan sebagai pedoman dalam kehidupan berkeluarga. Elemen lain yang diketengahkan ialah tempoh perkahwinan, dengan beberapa pasangan mencapai lebih 30 atau 50 tahun bersama. Ini menunjukkan hubungan yang kukuh dibina melalui persefahaman, saling menghormati, dan sokongan antara satu sama lain. Beberapa pasangan juga berkongsi cabaran awal perkahwinan, termasuk menguruskan kehidupan dengan sumber yang terhad, tetapi mereka berjaya mengatasi masalah tersebut dengan usaha bersama. Dapatan ini memberikan gambaran bahawa kejayaan hubungan bergantung kepada kombinasi nilai agama, toleransi, dan keupayaan untuk menghadapi cabaran bersama.

Ciri-ciri penting pasangan yang dihargai sangat perlu diangkat. Sikap seperti cermat dan berhati-hati mengurus kewangan rumah tangga, kesabaran dan sikap tenang pasangan, pasangan yang bertolak ansur, sikap tegas dan bertanggungjawab, sikap pasangan yang sering mempertahankan keluarga serta tidak membuka ruang kepada pihak lain mencampuri urusan rumah tangga, kerajinan dan kesungguhan pasangan mencari nafkah keluarga, tidak cerewet dalam setiap urusan harian, dan menghargai setiap rezeki yang dianugerahkan dalam keluarga. Selain itu sikap suami atau isteri yang menjaga kebajikan mentua juga merupakan aspek yang menyumbang kepada

kebahagiaan rumah tangga. Kesemua ciri-ciri baik pasangan ini dilihat mempunyai perkaitan yang rapat dengan pendidikan agama serta kepatuhan melakukan kewajipan sebagai seorang Muslim. Dapatan dari temu bual juga mendapati bahawa salah satu cara untuk mengekalkan hubungan ialah dengan mengimbuai kembali masa awal perkenalan. Keindahan masa perkenalan di zaman pengajian atau pun di alam pekerjaan akan memberikan kekuatan dan semangat bagi kedua-dua pasangan untuk saling menghargai antara satu sama lain.

Peranan Nafkah dan Kewangan

Nafkah adalah aspek penting dalam memastikan kesejahteraan keluarga (Mohd Saat & Azahari, 2021; Zulkifli, 2022)). Kestabilan kewangan dapat mengurangkan tekanan dalam rumah tangga dan meningkatkan kebahagiaan (Hadigunawan et al., 2023). Pengurusan nafkah yang baik membantu pasangan merancang masa depan dan memenuhi keperluan asas, yang merupakan asas kepada keharmonian. Suami bertanggungjawab untuk menyediakan keperluan asas seperti makanan, tempat tinggal, dan pendidikan. Tanggungjawab mencari sumber pendapatan yang halal dan diredhai Allah adalah penting untuk menjaga keberkatan rezeki (Mohd Saat & Azahari, 2021). Kestabilan kewangan membantu mengurangkan tekanan dan konflik dalam rumah tangga, serta membolehkan perancangan masa depan yang lebih baik, sebagaimana yang dinyatakan oleh informan BG10, "*Pendapatan masa kerja dulu dan hari ini Alhamdulillah, sentiasa ada untuk kami sekeluarga*". Informan BG4 menyatakan, "*dari segi kewangan, seratus peratus nafkah dari suami kerana dia yang bekerja*". Sementara itu, informan BG11 menyatakan, "*dalam masa yang sama, saya guna kemahiran menjahit untuk menambah pendapatan keluarga*". Situasi ini menunjukkan sekali pun hanya suami yang bekerja, mereka dapat meneruskan kehidupan dengan baik disebabkan pengurusan kewangan yang teratur, manakala jika perlu isteri akan turut membantu menambahkan pendapatan sebagaimana yang dinyatakan oleh informan BG4.

Cabaran kewangan menjadi antara isu utama, namun ia dapat diatasi melalui perancangan dan sikap bertanggungjawab. Contohnya, informan BG4 dan informan BG6 menyatakan "*bersikap jujur mengenai aliran kewangan*" dan "*ukur perbelanjaan mengikut kemampuan sendiri*" menonjolkan keperluan pengurusan kewangan yang telus dan bijaksana. Informan BG9 juga menunjukkan kepercayaan dan penghargaan kepada isteri untuk menguruskan perbelanjaan keluarga apabila menyatakan "*gaji semua saya serah dekat isteri*". Hal ini menunjukkan bahawa kejujuran dan kesefahaman memainkan peranan penting dalam menangani isu kewangan keluarga. Selain itu, informan BG8 juga menekankan elemen pengorbanan dan sokongan antara pasangan. Elemen seperti "*give and take kena ada*" menggambarkan keperluan saling memahami dalam melaksanakan tanggungjawab kewangan. Sebagai contoh, ada pasangan yang sama-sama bekerja untuk menambah pendapatan keluarga. Pada masa yang sama frasa "*jangan ikut gaya hidup orang lain, orang ada kereta besar, kita pun nak, walhal tak mampu*" seperti yang dinyatakan oleh informan BG4 memberi peringatan agar tidak terpengaruh dengan tekanan sosial dalam perbelanjaan. Secara keseluruhan, tema ini menyerlahkan kepentingan keseimbangan antara pendapatan dan perbelanjaan, serta kerjasama dalam membina kestabilan kewangan untuk kesejahteraan keluarga.

Peranan Agama

Agama menjadi asas penting dalam pembentukan keluarga bahagia (Hadigunawan et al., 2023; Zulkifli, 2022). Dalam Islam, pegangan agama yang kukuh bukan sahaja bermatlamat untuk menjaga amalan atau hubungan hamba dengan Tuhan semata-mata tetapi juga sebagai panduan untuk mewujudkan suasana yang harmoni dalam keluarga (Mohd Saat & Azahari, 2021). Matlamat ini dapat menghasilkan nilai kekeluargaan yang penuh dengan kasih sayang dan saling menghormati antara ahli keluarga, lebih-lebih lagi antara suami dan isteri. Keluarga yang berlandaskan ajaran agama akan mengutamakan nilai-nilai ketaatan kepada Allah (Mohd Saat & Azahari, 2021). Penerapan nilai agama dalam diri individu sangat penting. Hal ini kerana nilai agama tersebut akan membentuk individu yang sentiasa mematuhi perintah Allah sebagai panduan dalam setiap tindakan. Dalam konteks ini, hubungan dengan Allah akan menjamin keberkatan hubungan dan keberkatan keluarga.

Aspek hubungan dengan Tuhan seperti menjaga solat akan mewujudkan kebertanggungjawaban dan disiplin yang tinggi. Malah, tanggungjawab ini tidak terhenti pada diri suami sahaja tetapi turut melibatkan pasangan dan juga anak-anak. Dalam hal ini, seorang suami bangun pagi untuk menunaikan solat subuh akan turut mengejutkan isteri dan juga anak-anak untuk menunaikan tanggungjawab terhadap Allah. Tanggungjawab asas ini akan melebar pada tanggungjawab yang lain terutamanya dalam menguruskan rumah tangga (Mohd Saat & Azahari, 2021). Perkara ini diakui oleh informan tentang keperluan seorang bakal suami memiliki ciri patuh agama dan bertanggungjawab, sebagaimana yang dinyatakan oleh informan BG11, "*carilah orang yang beragama, kemudian orang yang bertanggungjawab terhadap keluarga*". Ciri ini dapat dilihat secara zahir melalui amalan seharian seperti melakukan ibadat harian seperti solat dan juga akhlak. Penelitian terhadap aspek ini perlu dibuat oleh setiap pasangan yang bakal berkahwin. Penelitian terhadap aspek agama bakal pasangan bukan sahaja perlu diteliti secara individu tetapi perlu melibatkan ahli keluarga malah dalam keadaan tertentu juga perlu mendapatkan maklumat dari jiran tetangga dan juga masyarakat. Perkara ini diakui oleh beberapa informan seperti informan BG3 yang menyatakan, "*kita kena cari pasangan yang ada agama, barulah keluarga kita jadi molek*". Informan BG 1 turut menyatakan, "*saya kenal dia atas dasar agama, saya tak bercinta pun, sebab saya yakin kalau dia jaga agama, maknanya dia juga boleh jaga keluarga*". Informan BG8 menegaskan, "*hubungan kita dengan Allah tu penting*".

Beberapa informan juga berkongsi pengalaman dan amalan keagamaan yang diterapkan dalam kehidupan mereka. Elemen penting seperti kewajipan solat berjemaah, pengajaran nilai-nilai Islam kepada anak-anak, dan mengekalkan hubungan yang kukuh dengan Allah ditekankan. Contohnya, "*hubungan dengan Allah memang penting*" dan "*setiap hari wajib solat berjemaah di masjid*" menunjukkan bagaimana aktiviti keagamaan harian menjadi asas kebersamaan dalam keluarga. Nasihat untuk tidak mengabaikan solat dan terus mencari keberkatan melalui amalan agama turut disarankan oleh beberapa informan kajian ini. Selain itu, tema ini menekankan kesedaran bahawa agama menjadi penyelesaian kepada pelbagai cabaran hidup. Misalnya informan BG11 dan informan BG4 menekankan elemen seperti "*kuatkan agama bila cabaran muncul*" dan "*ingat Allah sentiasa ada*" menggambarkan keyakinan bahawa keimanan membantu seseorang untuk tabah menghadapi dugaan. Sikap reda dan sabar terhadap ketentuan dan ujian dalam hidup juga

sangat berkait rapat dengan agama. Menurut informan BG1, *“gaji dia memang kecil, tapi agamalah yang mengajar kita untuk redha dan terima ketentuan Allah”*. Turut menyatakan perkara yang sama, informan BG11 menyatakan, *“kena kuatkan agama, bila kuat agama, kesabaran tu ada, boleh selesai masalah”*. Pendidikan agama turut menjadi alat penting dalam membentuk nilai-nilai murni dalam kalangan ahli keluarga, terutamanya anak-anak. Pengajaran asas Islam dan peringatan tentang amalan agama harian, seperti solat dan kesabaran, dilihat penting untuk memastikan kehidupan keluarga kekal harmoni dan diberkati.

Tanggungjawab

Tema tanggungjawab menonjolkan aspek kerjasama, tolak ansur, saling memahami, bersama mendidik anak-anak, melakukan yang terbaik, berlapang dada, saling menghargai dan menghormati antara satu sama lain (Hadigunawan et al., 2023). Informan menekankan pentingnya pembahagian tugas yang adil dan kerjasama antara pasangan dalam mengurus rumah tangga dan keluarga. Suami dan isteri perlu memahami peranan masing-masing untuk menjaga keharmonian keluarga. Menurut informan BG4, *“suami perlu tegas dalam memastikan keharmonian rumah tangga”*, dalam masa yang sama, isteri juga menjalankan peranan sebagai suri rumah tangga dengan memastikan suasana yang harmoni. Misalnya, informan BG7 menyatakan *“rumah tangga tu kita kena jaga biar bersih, suami balik rumah tenang saja”*. Informan BG7 juga berpendapat isteri perlu memantapkan ilmu memasak untuk menambat hati suami. Sementara itu, menurut informan BG3, *“walaupun saya tak agihkan tugas rumah tangga, Alhamdulillah, suami saya akan bantu bila-bila masa”*. Ini menunjukkan sikap saling memahami tanggungjawab amat penting dalam memastikan keharmonian rumah tangga.

Dari aspek tanggungjawab pendidikan anak-anak, pasangan harus bekerjasama dalam memastikan keperluan harian persekolahan anak-anak sebagaimana yang dinyatakan oleh informan BG5, *“banyak yang suami uruskan, seperti memastikan anak siapkan kerja sekolah”*, dan dalam masa yang sama isteri membantu untuk membayar yuran tadika sekolah. Beliau juga menyatakan terdapat keperluan berbeza antara anak lelaki dan anak perempuan. Justeru, anak lelaki akan diberi penekanan dari aspek tanggungjawab sebagai ketua keluarga dan anak perempuan tanggungjawab sebagai isteri. Informan BG2 menyatakan *“bila bersama anak-anak dan keluarga, tunjuk contoh yang terbaik”*, *“anak-anak ni tanggungjawab kita bersama, dan kalau marah tu untuk kebaikan bersama”*. Selain tanggungjawab fizikal, tanggungjawab moral dan menjadi teladan kepada anak-anak juga ditekankan oleh informan kajian ini. Mereka menyatakan bahawa ibu bapa perlu menunjukkan nilai-nilai positif kepada anak-anak melalui tingkah laku mereka sendiri, seperti menjaga kebersihan dan disiplin diri. Tanggungjawab ini juga melibatkan memberi perhatian kepada perkembangan emosi dan keperluan anak-anak.

Selain itu, kedua-dua pihak juga perlu memainkan peranan penting dalam menyelesaikan tugas rumah tangga agar tiada pihak yang merasa terbeban. Ini menunjukkan bahawa hubungan yang seimbang memerlukan usaha bersama untuk mencapai kebahagiaan. Menurut informan BG4 dan informan BG6, *“suami dan isteri perlu tahu dan memahami tugas dan tanggungjawab masing-masing”*, dan *“suami dan isteri hendaklah memahami peranan masing-masing dalam rumah”*.

Pendekatan ini membantu membentuk keluarga yang lebih kukuh, di mana tanggungjawab bersama menjadi asas kepada hubungan yang harmoni dan penuh kasih sayang sebagaimana yang dinyatakan informan. Perkara ini dinyatakan oleh informan BG4 dan informan BG3 iaitu, *“suami dan isteri perlu tahu tugas dan tanggungjawab masing-masing”* dan *“kita tak agih-agihkan tugas, tapi saling membantu bila diperlukan”*. Pengurusan rumah tangga seharusnya boleh berlangsung dengan baik sekiranya wujud sikap saling memahami dan bertolak ansur antara satu sama lain.

Berusaha melakukan yang terbaik, berlapang dada, dan saling menghargai juga merupakan indikator yang menunjukkan sikap bertanggungjawab kedua-dua suami isteri. Informan BG9 menyatakan, *“Saya Alhamdulillah, selagi Allah bagi kesihatan dan kemampuan, saya akan tolong. Contohnya masa saya kerja di laut, saya upah orang gaji untuk tolong isteri sehingga anak-anak besar”*. Informan BG4 pula menyatakan *“suami saya fokus untuk mencari nafkah, dan saya fokus untuk melaksanakan tugas-tugas rumah tangga”*. Sikap ingin melakukan yang terbaik ditunjukkan oleh informan BG7 dengan menyatakan *“kita kena perbaiki diri dari semasa ke semasa”* dan *“selagi saya boleh buat, saya akan buat semampu yang boleh”*. Selain itu, berlapang dada terhadap keupayaan masing-masing juga perlu sebagaimana yang dinyatakan oleh informan BG1, iaitu *“kita terima seadanya dari segi tanggungjawab dia untuk menyediakan kelengkapan rumah. Andai kalau kata dah mampu menyediakan macam makanan, tempat tinggal, basic je tapi terimalah”*. Frasa ini jelas menunjukkan bahawa elemen bertanggungjawab perlu melibatkan kedua-dua pihak suami dan isteri serta dilaksanakan dengan sepenuh hati mengikut kapasiti dan keupayaan masing-masing (Mansor & Hussin, 2023).

Komunikasi

Tema ini menekankan kepentingan persefahaman, komunikasi, dan toleransi sebagai asas hubungan yang harmoni. Komunikasi terbuka dianggap elemen penting untuk menyelesaikan masalah dan memahami keperluan pasangan (Mohd Saat & Azahari, 2021; Hadigunawan et al., 2023)). Informan menekankan kepentingan berbincang secara matang, mendengar secara aktif, dan bercakap dengan penuh hormat. Pendekatan ini membolehkan setiap pihak merasa didengari dan dihargai, sekaligus membantu mengelakkan konflik (Hoesni et al., 2017). Selain itu, elemen toleransi juga ditekankan, di mana pasangan digalakkan untuk menerima perbezaan pendapat, pandangan, dan sikap antara satu sama lain. Pernyataan informan ini dikukuhkan lagi dengan cara komunikasi informan ketika sesi temu bual dijalankan. Melalui pemerhatian penyelidik, pasangan tersebut saling menghormati dan bersikap lemah lembut antara satu sama lain. Antara ciri yang diperhatikan adalah mendengar sehingga pasangan selesai bercakap, menyokong dan mengesahkan kata-kata pasangan dan diselitkan unsur humor dalam perbualan.

Subtema lain yang diketengahkan adalah pentingnya fleksibiliti dan saling memahami dalam hubungan. Pasangan diingatkan bahawa setiap hubungan mempunyai cabaran, dan sikap bertolak ansur dapat membantu mengatasi cabaran tersebut. Terdapat juga cadangan untuk mencari jalan tengah dalam situasi konflik, kerana hal ini membolehkan kedua-dua pihak merasa dihormati (Hadigunawan et al., 2023). Komunikasi yang berkesan dan keupayaan untuk bertolak ansur ini dilihat sebagai elemen utama yang mampu memastikan hubungan yang stabil dan bahagia,

walaupun berdepan dengan cabaran dalam kehidupan seharian (Harsoyo & Darmawan, 2023; Mohd Saat & Azahari, 2021). Pernyataan ini dikukuhkan dengan kenyataan informan BG11, informan BG4 dan informan BG6 sebagaimana berikut: *“Kalau ada sebarang masalah, perlu diperbaiki segera, dan saling nasihat menasihati antara satu sama lain”, “pasangan perlu berbincang dan terbuka untuk mengelakkan salah faham” dan “amalkan sikap bertolak ansur dalam setiap keadaan”.*

Elemen bertolak ansur ditekankan oleh hampir kesemua informan kajian ini, misalnya informan BG5 menyatakan *“perlu bertolak ansur, jangan cepat nak marah”*, begitu juga informan BG6 dan informan BG10 mengamalkan sikap tolak ansur dalam setiap keadaan. Sikap bertolak ansur ini ditunjukkan oleh informan BG8 yang menyatakan *“kalau saya balik lewat, dia lah yang ambilkan anak-anak”*. Informan BG4 juga menyatakan dalam hubungan perkahwinan yang penting perlu selalu bertolak ansur dan buang ego. Kepentingan unsur bertolak ansur dalam mengekalkan kestabilan sebuah perkahwinan dibuktikan oleh BG4 yang mengakui bahawa *“bertahannya kami selama 50 tahun kerana ada sifat tolak ansur”*. Elemen yang turut penting dalam menjayakan sikap bertolak ansur ini adalah perbincangan yang berterusan antara pasangan. Antara topik yang sering dibincangkan menurut BG6 ialah berkaitan kewangan dan peribadi, manakala informan BG11 menyatakan jika ada apa sahaja masalah dalam perkahwinan perlu melakukan perbincangan bersama. Begitu juga menurut informan BG9 sekiranya tiada persetujuan tentang sesuatu perkara, kaedah yang terbaik adalah berbincang. Informan BG7 dan informan BG11 telah mengamalkan konsep berbincang dalam keluarga sejak anak masih kecil lagi, dan jika perlu, menurut informan BG3, perbincangan turut berlaku bersama anak-anak terutamanya jika pandangan anak diperlukan dalam membuat keputusan. Dalam merealisasikan konsep perbincangan dalam keluarga, pada awal perkahwinan mungkin agak sukar, sebagaimana yang dinyatakan oleh informan BG11, *“mungkin masa awal perkahwinan kita rasa sukar untuk berbincang, tapi kita tetap kena cuba untuk berbincang, sebab kita datang dari keluarga yang berbeza, didikan yang berlainan”*. Jadi pentingnya melakukan perbincangan bagi mengelakkan salah faham yang akan menimbulkan konflik rumah tangga.

Dalam memastikan kejayaan komunikasi dalam perkahwinan, antara sifat yang perlu ada menurut informan BG3 dan informan BG7 *“yang penting jangan mudah cemburu, open minded, dan jangan tipu”*, dan *“jangan berkira dengan suami, perlu saling membantu”*. Informan BG3 juga menegaskan *“kita kena sangka baik terhadap isteri kita, dan mengetahui apa yang isteri inginkan dalam rumah tangga”*. Selain itu, informan BG7 menyatakan perlunya menerima kelemahan pasangan dan jangan mengungkit ketika berlaku perbalahan, dan disertai dengan sabar serta tidak mudah berasa hati dan marah, sebagaimana yang dinyatakan oleh informan BG9 dan BG11. Informan BG4 juga mengingatkan agar isteri menyesuaikan diri setelah berkahwin, *“tak boleh hidup seperti dulu, bila ada suami kena hadkan aktiviti”*, bermaksud tumpuan kepada keluarga harus menjadi keutamaan. Sebagai tanda penghargaan atas pengorbanan kedua-dua pihak, menurut informan BG6 dan informan BG7, *“kita perlu menghormati dan menghargai pengorbanan isteri yang penat lelah mengurus rumah tangga”*, dan *“kita kena hargai sekurang-kurangnya dia telah berbuat sesuatu untuk keluarga”*.

Dapatan kajian turut menemui unsur saling memahami dalam kalangan pasangan yang mana ia membolehkan pasangan mengenali antara satu sama lain dengan lebih berkesan. Menurut informan BG3, *“ini penting untuk kita memahami pasangan, kita boleh nampak dia ada masalah jika ada perubahan tingkah laku”*. Dalam situasi ini, ia boleh mengelakkan salah faham serta memudahkan penyelesaian masalah. Informan BG7 turut mengakui *“saling memahami itu penting, kita kena tahu dia suka apa, dan tak suka apa”*. Perkara yang sama turut dinyatakan oleh informan BG3, di mana *“suami beritahu isteri yang ada perkara dia tak suka dan isteri beritahu suami tentang perkara yang dia tidak suka. Ini penting untuk kita lebih memahami pasangan”*. Bagi meningkatkan lagi kefahaman, pasangan boleh melakukan aktiviti bersama sebagaimana yang dinyatakan oleh informan BG3, *“kadang-kadang kami melakukan aktiviti bersama, misalnya lipat kain”*, begitu juga informan BG2 menyatakan *“saya dan isteri ni boleh kata buat semua benda bersama”*.

Tidak dinafikan ada kalanya pasangan menghadapi konflik, namun demikian ia dapat ditangani dengan baik melalui komunikasi yang berkesan. Menurut informan BG7, *“jika saya tak suka, saya akan diam”*. Pendekatan berdiam menurut informan BG2 ialah, *“Maksudnya kena dengar. Ketika dia marah, kena diam”*. Diam adalah satu bentuk komunikasi yang berkesan bagi mengelakkan konflik serta memberi peluang untuk kedua-dua pihak melakukan muhasabah dan berfikir lebih mendalam. Di samping itu, informan BG10 dan informan BG8 menegaskan perlu mengelak campur tangan pihak ketiga dalam konflik suami dan isteri kerana dibimbangi akan memburukkan lagi keadaan. Antara kaedah lain yang digunakan oleh informan BG11 ialah keluar seketika dari situasi tegang iaitu, *“Keluar, ikut lah, kita ke kedai kopi ke mana pun, dia sejuk kita balik. Mana kita tidak pernah bergaduh, macam masam muka tu biasa”*.

Pengurusan Rumah Tangga

Tema ini memfokuskan kepada aspek pengurusan rumah tangga yang efektif melalui pembahagian tugas antara pasangan seperti mencuci pinggan, memasak, dan menjaga anak. Pembahagian tugas adalah penting untuk mengurangkan beban seorang individu sahaja selain dapat meningkatkan keharmonian rumah tangga dengan memastikan bahawa kedua-dua pihak terlibat secara aktif dalam kehidupan keluarga (Shukry & Zakaria, 2019). Selain itu, pasangan digalakkan untuk berbincang dan membuat perancangan bersama, terutamanya dalam hal-hal rumah tangga seperti menguruskan jadual harian atau menyediakan keperluan keluarga (Hoesni et al., 2017). Kerjasama dalam rumah tangga tidak hanya melibatkan pembahagian tugas tetapi juga sikap saling memahami dan berkompromi (Hoesni et al., 2017) sebagai contoh, ada pasangan yang membantu membersihkan rumah selepas kerja atau menyediakan makanan untuk keluarga pada hujung minggu. Pengurusan rumah tangga yang baik bukan hanya tentang tugas fizikal, tetapi juga tentang membina hubungan yang lebih erat melalui usaha bersama (Harsoyo & Darmawan, 2023). Sikap tolong-menolong ini membantu memastikan keharmonian dalam keluarga tetap terjaga. Perkara ini dijelaskan oleh informan BG6 sebagaimana berikut: *“Pasangan perlu berkerjasama dalam melaksanakan tanggungjawab rumah tangga”*. Antara bentuk kerjasama dalam mengurus rumah tangga menurut informan BG2, *“contohnya bila isteri tengah cuci kain, saya tolong jaga anak-anak”*. Informan BG10 pula menyatakan, *“tugas-tugas memasak tu isteri buat, dan selepas tu*

suami basuh pinggan mangkuk". Selain itu, menurut informan BG7, *"suami tolong jemur kain, dan saya angkat kain dan lipat sebab dia tak pandai nak lipat kain"*. Informan BG1 pula menjelaskan peranan suami Ketika anak masih kecil, *"suami basuh berak anak dan bancuh susu, dan hantar anak"*. Begitu juga dengan informan BG9 menyatakan, *"kena buat kerja sama-sama, suami jaga kawasan persekitaran luar rumah, saya bahagian dalam rumah"*. Pengurusan rumah tangga bukanlah satu bebanan sekiranya dilakukan bersama atas nama tanggungjawab disertai dengan saling menghormati dan menghargai antara satu sama lain.

Pengurusan Emosi

Tema pengurusan emosi menekankan pentingnya kawalan emosi dalam kehidupan berumah tangga. Kemampuan untuk mengawal ego dan marah adalah langkah asas dalam mengelakkan konflik (Mohd Saat & Azahari, 2021). Sikap bertenang dan mengelakkan daripada memberi sebarang reaksi negatif ketika menghadapi masalah akan membantu mencegah konflik daripada menjadi lebih serius. Selain itu, pendekatan untuk tidak memperbesarkan isu kecil juga dilihat sebagai kaedah bijak dalam memastikan keharmonian hubungan. Ini termasuk kesediaan untuk melihat kelemahan pasangan sebagai peluang untuk saling melengkapi, bukannya mempersoalkan satu sama lain. Informan menyatakan berdiam diri adalah satu kaedah yang berkesan dalam mengawal emosi, sebagaimana menurut informan BG4, BG11 dan BG3, iaitu *"kita simpan saja dalam hati, perkara-perkara kecil tidak perlu diperbesarkan, nanti okey lah tu"*, *"kalau saya nak marah pun, saya senyap saja"*, *"kalau kita tak mampu nak lawan dengan kata-kata, lebih baik kita diam"*. Pendekatan yang sama juga digunakan informan BG2, *"kalau salah seorang pasangan tengah panas, atau tidak puas hati, seorang lagi perlu tenang, nanti okey lah balik"*. Berdiam diri bukan bermakna tidak berbuat apa-apa ketika menghadapi ketegangan emosi, namun menurut informan BG9, *"berdiam diri bukan bermaksud jadi bisu, tetapi otak kita tengah berfikir"*, bertujuan untuk mengelakkan ketegangan emosi. Informan BG10 juga menyatakan *"kalau tak bersetuju antara satu sama lain, kami memilih untuk diam"*. Informan BG9 pula menggunakan pendekatan keluar seketika bagi mengelakkan pertengkaran.

Selain kawalan diri, komunikasi yang baik juga menjadi teras kepada pengurusan emosi yang berkesan. Informan menekankan bahawa berbincang secara terbuka dan jujur adalah cara terbaik untuk menyelesaikan perselisihan. Misalnya, jika berlaku ketegangan, berbicara dengan tenang dan mencari penyelesaian bersama lebih diutamakan daripada menyimpan dendam. Perkara ini dinyatakan oleh informan BG4 *"kalau dia tersalah cakap saya terus bagitahu yang saya tak suka"*. Sementara itu, menurut BG3, *"yang penting kita tidak stres, boleh berbincang dan duduk sekali"*, menunjukkan walaupun dalam keadaan emosi yang tidak stabil, perbincangan dengan pasangan merupakan kaedah yang terbaik dalam mengawal emosi. Namun demikian, dalam hal ini, menurut informan BG9 dan informan BG2, *"kita kena hilangkan sifat ego kita, jangan terbawa-bawa terlalu lama"*, dan *"jangan terlalu ikut perasaan"*. Menurut informan BG4 juga, *"elakkan sikap ego dan hadapi permasalahan dengan hati yang terbuka"*.

Informan BG1 juga menyatakan bahawa pasangan perlu mengelakkan pergaduhan daripada berlaku di hadapan anak-anak. Selain itu, pasangan tidak perlu memanjangkan tempoh berkonflik

dan segera mencari jalan penyelesaian sebagaimana yang dinyatakan oleh informan BG7 dan BG3, *“biasanya sekejap saja, kalau malam ada pergaduhan, esok pagi tu reda lah”*. Pendekatan ini membina hubungan yang lebih kukuh, kerana kedua-dua pihak merasa dihargai dan difahami. Secara keseluruhan, tema ini menggalakkan pasangan untuk saling menyokong dan bersabar dalam menghadapi cabaran emosi. Melalui pemerhatian semasa temu bual, penyelidik juga mendapati kebanyakan pasangan menjelaskan bahawa sekiranya berlaku perselisihan faham atau konflik, mereka akan pastikan perkara tersebut dapat diselesaikan dalam tempoh yang paling singkat dan tidak akan dibawa sehingga keesokan harinya. Mereka juga mudah untuk meminta maaf dan memberi maaf atas kesalahan atau keterlanjuran kata-kata yang tidak disengajakan.

Pendidikan Anak-anak

Pendidikan anak-anak adalah kunci kepada masa depan keluarga. Pendidikan bukan sahaja merangkumi aspek akademik tetapi juga pendidikan moral dan agama. Pendidikan formal di sekolah mahu pun di universiti bertujuan untuk membekalkan anak-anak dengan ilmu pengetahuan di samping menjamin kelangsungan hidup dalam pekerjaan. Namun, aspek lain yang sering diabaikan ialah aspek pendidikan akhlak dan agama. Didikan anak-anak tentang nilai-nilai moral dan agama agar mereka menjadi individu yang bertanggungjawab dan berakhlak mulia sangat perlu dilakukan secara berterusan (Mohd Saat & Azahari, 2021). Malah, perancangan pendidikan anak-anak daripada pelbagai aspek perlu dirancang bersama oleh pasangan suami dan isteri. Pendidikan agama yang cukup dan seimbang perlu dirancang supaya pendidikan mereka tidak hanya tertumpu kepada aspek keduniaan semata-mata.

Aspek ini sepatutnya bermula dari rumah dan seawal usia yang boleh. Nasihat dan peraturan agama seperti solat perlu diamalkan secara bersama. Sebolehnya aktiviti pengajian al-Quran dibuat dan diajar oleh ibu bapa sekiranya berkemampuan dan berkecukupan. Lebih daripada itu, aktiviti kehidupan harian juga perlu dilibatkan anak-anak secara bersama seperti mengemas rumah dan penjagaan barangan peribadi mereka seperti pakaian dan bilik tidur. Kesilapan dan kesalahan anak yang keterlaluan boleh diajar secara memukul yang tidak mencederakan dan dalam masa yang sama memberi kefahaman terhadap kesan melakukan kesalahan sama ada terhadap diri sendiri atau pun orang lain. Adab harian anak-anak juga perlu dititikberatkan. Tingkah laku seperti memecahkan barangan atau menconteng dinding perlu ditangani dengan baik agar tidak menyekat kreativiti anak-anak dan dalam masa yang sama mengajar mereka bertanggungjawab terhadap hak milik peribadi dan juga masyarakat awam.

Pasangan juga perlu menghormati pasangan masing-masing dalam mendidik anak-anak. Pasangan tidak seharusnya membela kesalahan anak-anak yang jelas salah serta menyalahkan pasangan. Hal ini boleh menghilangkan hormat mereka terhadap ibu atau bapa mereka (Mohd Saat & Azahari, 2021). Selain itu peraturan keluar rumah dan aktiviti di luar juga perlu digarap sebaik mungkin agar peraturan tersebut tidak mengekang aktiviti mereka dan dalam masa yang sama mampu mengekang mereka dari sebarang aktiviti yang tidak baik di luar rumah. Informan kajian ini juga didapati amat menitikberatkan aspek pendidikan anak-anak. Perkara ini dijelaskan informan BG4 dan BG6, *“kami bersama-sama dalam merancang pendidikan anak-anak sejak daripada kecil*

lagi”. Manakala informan BG3 menyatakan, “*Didikan agama seperti membaca al-Quran saya terapkan sewaktu mereka tadika lagi*”.

Taat/Patuh

Tema taat/patuh memaparkan pandangan tentang peranan ketaatan dan penghormatan dalam hubungan suami isteri (Mansor & Hussin, 2023). Informan menekankan bahawa ketaatan kepada pasangan adalah penting, selagi tidak melanggar batas agama dan norma kehidupan (Shukry & Zakaria, 2019). Contohnya, informan BG2 menyatakan bahawa seorang isteri perlu menghormati suami, tetapi ini harus disertai dengan kesedaran tentang nilai kesetaraan dan saling memahami. Sikap hormat kepada pasangan ini memastikan hubungan sentiasa harmoni, di mana kedua-dua pihak merasa dihargai dalam peranan mereka. Selain itu, kepercayaan terhadap pasangan turut menjadi elemen utama dalam tema ini. Beberapa informan menyebut bahawa ketaatan datang dengan keyakinan bahawa setiap individu mempunyai keistimewaan dan kelebihan masing-masing. Sikap menghormati pasangan tanpa merendahkan mereka atau membandingkan dengan orang lain juga ditekankan sebagai aspek penting. Perbincangan ini menonjolkan bahawa ketaatan dalam hubungan bukanlah bentuk kepatuhan yang buta, tetapi lebih kepada saling melengkapi dan memahami demi menjaga keharmonian rumah tangga. Perkara ini dijelaskan informan BG3, “*kita perlu taat kepada suami selagi arahan dia tidak melanggar batas yang telah ditetapkan agama*”.

Kesimpulan

Secara keseluruhan, hasil temu bual bersama pasangan bahagia ini, terdapat sepuluh tema yang telah dikenal pasti menyumbang kepada kestabilan dan kebahagiaan perkahwinan iaitu faktor latar belakang keluarga, latar belakang pasangan, nafkah, agama, tanggungjawab, komunikasi, pengurusan rumah tangga, pengurusan emosi, pendidikan anak-anak dan kepatuhan. Perkahwinan yang bahagia tidak bermaksud tiada konflik atau masalah dalam rumah tangga, namun setiap perbezaan pandangan atau masalah dikendalikan dengan penuh berkesan. Kedua-dua pihak berusaha untuk memastikan apa sahaja perkara yang berlaku dalam rumah tangga ditempuhi bersama serta memberi ruang untuk perbincangan terbuka. Namun demikian, tidak dinafikan bahawa setiap pasangan adalah unik, dan faktor-faktor ini mungkin berbeza mengikut keperluan dan dinamik hubungan. Yang penting adalah komitmen bersama untuk membina dan mengekalkan hubungan yang sihat dan bahagia sehingga hujung usia.

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055-048

**MEMPERKASA INSTITUSI KELUARGA MELALUI PERKONGSIAN SUSU IBU:
ANALISIS ETIKA, KESIHATAN, TEKNOLOGI DAN DASAR PATUH SYARIAH**

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ABSTRAK

Krisis demografi yang melibatkan kelewatan usia perkahwinan, penurunan kesuburan dan kadar kelahiran memberi kesan langsung kepada kelangsungan institusi keluarga dan kesejahteraan sosial di Malaysia. Dalam lanskap ini, isu pemakanan bayi menjadi semakin kritikal, terutamanya apabila penyusuan oleh ibu kandung tidak dapat dilaksanakan. Amalan perkongsian susu ibu, iaitu pemberian susu oleh wanita selain ibu kandung, muncul sebagai sokongan alternatif dalam penjagaan awal kanak-kanak. Namun begitu, dalam konteks masyarakat Muslim, amalan ini tidak bebas daripada pertimbangan etika dan hukum syariah, khususnya berkaitan status mahram, penjagaan nasab, batas pergaulan dan hak kekeluargaan. Kajian ini meneroka dimensi etika, kesihatan, teknologi dan dasar patuh syariah berkaitan amalan perkongsian susu ibu melalui pendekatan kualitatif. Data diperoleh menerusi perbincangan kumpulan berfokus (FGD) bersama pakar kesihatan, ilmuwan syariah, penggiat teknologi, penggubal dasar, aktivis penyusuan dan ibu penderma. Analisis tematik mengenal pasti empat isu utama: (i) kesedaran etika (Rada'ah); (ii) keselamatan dan saringan kesihatan; (iii) kebolehesanan teknologi; serta (iv) sokongan dasar dan institusi. Penemuan kajian mencadangkan keperluan mewujudkan sistem penyusuan patuh syariah yang bersepadu, dengan sokongan teknologi seperti *blockchain* bagi meningkatkan ketelusan dan kebolehesanan data penderma dan penerima. Kajian ini menyumbang kepada pembangunan dasar reproduktif dan keluarga yang lebih responsif terhadap isu bioetika Islam dan teknologi digital, serta menyokong agenda nasional dalam menangani cabaran megatrend kependudukan dan institusi keluarga masa depan.

Kata Kunci: Perkongsian Susu Ibu, Keluarga Susuan, Etika Islam, Kesihatan Reproduksi, Dasar Keluarga, *Blockchain*.

058-052

WOMEN, WEALTH AND WELL-BEING: THE ROLE OF FINANCIAL PLANNING IN EMPOWERING MALAYSIAN FAMILIES

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ABSTRACT

Financial planning is central to enhancing women's independence, economic security, and well-being. Grounded in the Capability Approach and Social Capital Theory, this study explores how financial planning enables Malaysian women to expand their choices, freedoms, and control over life circumstances. In Malaysia's evolving socio-economic context, understanding how women navigate financial decisions offers valuable insights into empowerment and resilience.

Using a phenomenological design, in-depth semi-structured interviews was conducted with ten working women aged between 21 to 70. Thematic analysis revealed that financial planning extends beyond managing resources—it represents a form of self-determination and empowerment, particularly amid financial uncertainty, caregiving, or relationship transitions.

Findings show that respondents were largely risk-averse, engaged in independent information-seeking, and reported no significant cultural barriers to financial decisionmaking. This indicates an emerging shift towards personal responsibility and pragmatic financial behaviour, moving beyond traditional gender expectations.

The study highlights the need for inclusive, gender-sensitive financial education that reflects women's diverse experiences and decision-making patterns. By promoting financial literacy and agency, such initiatives can enhance women's well-being and contribute to equitable, resilient families and communities.

Keywords: Financial Planning, Women's Empowerment, Financial Well-Being, Gender Equity, Malaysia.

061-055

**ANTARA KONFLIK DAN KESEPAKATAN:
KAJIAN KUALITATIF KONTEKSTUAL TERHADAP REALITI DINAMIK
PASCA-PERCERAIAN DI MALAYSIA**

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ABSTRAK

Menghadapi cabaran masa depan, perceraian kini dilihat semakin menjadi kebiasaan. Fenomena ini telah berkembang tanpa disedari menjadi suatu *megatrend* yang menjadi suatu hakikat sosial yang tidak dapat dielakkan. Dalam menangani perubahan dinamik pola keluarga pasca-perceraian ini, pemahaman mendalam terhadap realiti yang dihadapi oleh individu pasca-perceraian dan pendekatan yang sistematik amat diperlukan. Kajian ini bertujuan untuk mengkaji dinamika serta implikasi sosial perceraian melalui pendekatan kualitatif, dengan menggunakan analisis kontekstual sebagai asas kepada analisis tematik. Fokus utama adalah membezakan pengalaman perceraian bermasalah (*nasty*) dan tidak bermasalah (*healthy*) dalam kalangan individu yang telah bercerai (*divorcees*). Data diperolehi daripada kajian perpustakaan dan dokumentasi, meliputi tinjauan kajian terdahulu serta bahan ilmiah berkaitan institusi kekeluargaan, perceraian dan kesejahteraan sosial. Sumber yang dirujuk termasuk jurnal akademik, kertas kerja, buku ilmiah, laporan statistik, artikel media, dan penerbitan yang berkaitan isu kekeluargaan dan sosial. Analisis kontekstual mengenalpasti tema utama seperti *kestabilan emosi pasca-perceraian*, *peranan sokongan sosial*, *pengurusan hubungan lanjutan kekeluargaan*, dan *dinamika fungsi keibubapaan*. Dapatan kajian menunjukkan bahawa perceraian tidak bermasalah lazimnya melibatkan komunikasi yang matang dan sokongan sosial yang efektif, manakala perceraian bermasalah berkait rapat dengan konflik berpanjangan dan kekurangan sistem sokongan. Kajian ini mengetengahkan perlunya pengurusan perubahan untuk membangunkan kerangka intervensi yang responsif, lestari, serta berasaskan realiti sosial semasa bagi memperkukuhkan struktur keluarga masa depan secara strategik dan inklusif.

Kata Kunci: Pasca-perceraian, Analisa Kualitatif, Dinamika Pola Keluarga, Pengurusan Perubahan, Kerangka Intervensi, Sokongan Sosial.

PENGENALAN

Dalam beberapa tahun kebelakangan ini, kadar perceraian di Malaysia menunjukkan trend meningkat yang membimbangkan. Menurut Jabatan Perangkaan Malaysia (DOSM), jumlah kes perceraian melonjak daripada 43,936 kes pada tahun 2021 kepada 62,890 kes pada tahun 2022, satu peningkatan sebanyak 43.1% dalam tempoh setahun. Walaupun terdapat sedikit penurunan

pada tahun 2023, dengan 57,835 kes direkodkan, kadar perceraian terus menjadi cabaran besar dalam membentuk institusi keluarga yang stabil (Paslan, 2024).

Secara kasar, kadar perceraian (Crude Divorce Rate – CDR) meningkat daripada 1.4 kepada 1.9 per 1,000 penduduk antara tahun 2021 dan 2022 (Jabatan Perangkaan Malaysia, 2022). Walaupun kadar perceraian kasar menurun sedikit daripada 1.9 kepada 1.8 per seribu penduduk pada tahun 2023 (Jabatan Perangkaan Malaysia, 2024), kadar ini adalah yang tertinggi sejak data tersedia bermula 2016, dan menandakan perubahan ketara dalam corak sosial dan institusi keluarga negara.

Jumlah perkahwinan pula dilihat agak menurun sedikit iaitu daripada 215,973 pada tahun 2021 kepada 214,824 pada tahun 2022, diikuti 188,100 pada tahun 2023 (Jabatan Perangkaan Malaysia, 2024). Dengan catatan penurunan yang besar dan konsisten ini, pastinya menampakkan ianya tidak dapat menyeimbangkan peningkatan bahaya perceraian yang sangat besar. Golongan yang paling terkesan adalah pasangan berumur 30 hingga 34 tahun, dengan kes cerai tertinggi dikesan dalam kumpulan umur ini (Md. Nor, 2024).

Pelbagai faktor yang tidak dapat dielakkan yang menyumbang kepada trend perceraian ini. Kajian Mohamad et al. (2021) melaporkan punca utama perceraian dalam kalangan mereka yang berumur 40 tahun ke atas di kalangan masyarakat Islam adalah pengabaian nafkah dan tanggungjawab, isu orang ketiga, poligami, penglibatan dalam penyalahgunaan dadah dan penganiayaan. Konflik yang berlaku bukan sahaja melibatkan pihak yang bercerai, tetapi juga ahli keluarga, masyarakat dan institusi sosial yang berkaitan. Di sinilah pentingnya kemahiran menguruskan konflik dalam kalangan masyarakat. Malangnya kemahiran menguruskan konflik tidak begitu dititik-beratkan dalam institusi sosial dan kekeluargaan di negara ini (Ibrahim & Rasip, 2025).

Walaupun kita tidak berkuasa untuk mencegah keputusan sesetengah pasangan untuk bercerai — kerana penyebab seperti tekanan kewangan, ketegangan komunikasi, atau ketidaksesuaian tidak dapat dielakkan sepenuhnya — pendekatan yang bersifat **proaktif, bersedia dan berstruktur** adalah penting. Dengan melihat fenomena ini sebagai realiti sosial yang memerlukan pengurusan sistematik, kita dapat memastikan impaknya terhadap ekosistem masyarakat tidak menjadi tidak terkawal. Ini termasuk elemen-elemen seperti perlindungan anak-anak, hubungan antara keluarga mentua, serta tanggungjawab antara bekas suami dan isteri.

Penerimaan ke arah pendekatan sistematik membantu memastikan implikasi perceraian tidak menjejaskan keharmonian keseluruhan struktur sosial. Antaranya, soal **penjagaan dan pendidikan anak-anak**, perancangan sokongan emosi dan kewangan, serta mekanisme komunikasi yang teratur antara pihak-pihak berkaitan adalah amat diperlukan. Dengan strategi kolaboratif yang melibatkan kerajaan, komuniti, institusi agama dan profesional kaunseling, masyarakat dapat menghadapi fenomena perceraian dengan lebih berdaya tahan — bukannya terkesan secara bersemuka dan berlarutan hingga memberi kesan negatif kepada generasi masa depan.

PENINGKATEGORIAN PERCERAIAN

Dalam konteks pengurusan perubahan, pengkategorian jenis perceraian adalah sangat penting bagi memudahkan pemahaman sosial terhadap pola hubungan pasca-perceraian. Dengan mengenal pasti sama ada perceraian itu bermasalah (*nasty*) atau tidak bermasalah (*healthy*), pihak-pihak tertentu yang berkepentingan dapat merangka pelan intervensi yang lebih bersesuaian dan berkesan. Klasifikasi ini bukan sahaja membantu dalam menangani konflik yang wujud, tetapi juga memperkuat jaringan sokongan sosial serta meminimumkan kesan negatif terhadap anak-anak dan institusi kekeluargaan. Oleh itu, pengkategorian yang jelas dan sistematik menjadi asas penting dalam merangka strategi pengurusan pasca-perceraian yang holistik dan berimpak, seterusnya menyumbang kepada pembentukan masyarakat yang lebih stabil dan harmoni.

i) Perceraian Bermasalah vs Tidak Bermasalah (Konteks Bukan Islam)

Perceraian bermasalah (*nasty divorce*) dalam sistem sivil bukan Islam lazimnya merujuk kepada *contested divorce*, di mana pasangan gagal mencapai persetujuan terhadap isu penting seperti hak penjagaan anak, pembahagian harta, dan nafkah. Proses ini membawa kepada pertikaian di mahkamah, sering berlanjutan dan menjejaskan kesejahteraan emosi pihak terlibat. Contohnya, dalam satu kes perceraian *contested* atau *defended* (yang dibawa ke mahkamah, mahkamah terpaksa campur tangan untuk menyelesaikan isu hak penjagaan anak kerana hubungan pasangan sangat bertelagah dan tidak mampu diselesaikan secara luar mahkamah. the courts have encouraged other consensual processes

Sebaliknya, *uncontested divorce* atau *healthy divorce* berlaku apabila pihak-pihak mencapai kata sepakat secara damai, menyelesaikan isu bersama tanpa konflik besar, dan prosesnya lebih cepat serta kurang memberi tekanan psikologi. Perceraian jenis *uncontested* biasanya direkodkan melalui prosedur yang lebih ringkas (Quek, Chua & Ning, 2022), dan kebanyakan perkara berbangkit dipersetujui bersama tanpa melalui perbicaraan di dalam mahkamah (Menon, 2017). Sekaligus, kurangnya konflik dalam perceraian jenis ini juga cenderung mengurangkan impak negatif kepada anak-anak dan menjurus kepada transisi kehidupan pasca-perceraian yang lebih harmoni.

Perceraian bermasalah (*nasty divorce*) biasanya berlaku dalam kes *contested divorce*, di mana pihak-pihak tidak mencapai persetujuan mengenai isu penting seperti hak penjagaan anak, pembahagian harta atau nafkah. Proses ini sering dilanjutkan ke mahkamah dengan pertikaian yang panjang dan menimbulkan tekanan emosi. Contoh ketara di mana mahkamah menetapkan bahawa *sole custody* hanya wajar dipertimbangkan dalam keadaan luar biasa seperti keganasan kanak-kanak; sebaliknya inisiatif untuk menjadikan penjagaan bersama sebagai pilihan nampak sebagai penanda bahawa konflik antara pasangan cukup serius sehingga memerlukan campur tangan pecah dan membimbangkan emosi anak-anak.

Pendekatan *uncontested* ini lebih tertib, kurang konflik, dan hasilnya lebih mesra emosi kepada anak-anak dan kedua-dua pihak yang terlibat. Biasanya, **uncontested divorce** atau *healthy divorce* ini dicirikan oleh komunikasi yang lebih rasional dan penyelesaian di kalangan pihak tanpa membawa kes ke mahkamah. Proses yang lancar ini mengurangkan beban psikologi,

memberi ruang transisi yang lebih kondusif kepada anak-anak, dan mengekalkan hubungan yang lebih harmoni selepas perceraian.

ii) Perceraian Bermasalah vs Tidak Bermasalah (Konteks Islam)

Dalam konteks Islam di Malaysia, membawa kes perceraian ke Mahkamah Syariah bukanlah penunjuk perceraian bermasalah (*nasty*), kerana semua proses perceraian di sisi undang-undang Islam mesti melalui mahkamah untuk menjadi sah secara rasmi. Menurut Seksyen 47 Enakmen Undang-Undang Keluarga Islam Wilayah-Wilayah Persekutuan 1984, suami atau isteri yang ingin bercerai wajib memfailkan permohonan di Mahkamah Syariah dan hanya hakim syarie boleh mengesahkan lafaz talak tersebut. Lafaz cerai yang diucapkan di luar mahkamah tanpa kebenaran dianggap suatu kesalahan jenayah syariah dan boleh dihukum denda tidak melebihi RM 1,000 atau penjara tidak lebih enam bulan atau kedua-duanya.

Oleh itu, tindakan membawa perceraian ke mahkamah bukanlah refleksi konflik atau permusuhan, tetapi suatu prosedur wajib yang menunjukkan pengurusan yang teratur dan beretika — berbeza dengan definisi *nasty divorce* yang merujuk kepada situasi pertelingkahan dan perselisihan yang tidak tertib. Dalam konteks syariah Islam juga, *uncontested divorce* berlaku apabila pihak-pihak mencapai kata sepakat secara damai, menyelesaikan isu bersama tanpa konflik besar, dan prosesnya lebih cepat serta kurang memberi tekanan psikologi (Fadil, Mazidah, & Mahmudi, 2024)

Menariknya dalam konteks Islam, perceraian yang dianggap beretika dan kurang konflik sering dikaitkan dengan **talak sunni**. Ia berlaku apabila talak dilafazkan dengan syarat syariah seperti isteri dalam keadaan suci (bukan haid), serta memberi masa iddah dan peluang rujuk (Arofik & Scolichah, 2024). Pendekatan ini memberi ruang muhasabah dan menjaga kehormatan semua pihak. Sebaliknya, **talak bid'ii** berlaku jika talak dilafazkan ketika isteri haid, atau talak tiga sekaligus (triple talaq), tanpa iddah dan tanpa ruang rekonsiliasi. Ia dianggap salah dari sudut syarak dan membawa kesan psikososial yang lebih berat kepada individu, termasuk anak-anak.

Al-Quran menekankan pentingnya usaha rujuk dan perantara dalam hubungan suami isteri. Allah SWT berfirman dalam Surah An-Nisa' ayat 130:

وَاِنْ يَتَفَرَّقَا رِقًا يَغْنُ َاللُّ كُ لَا مِّنْ سَعَتِهِ َ وَكَانَ َاللُّ وَاَسِعًا حَكِيمًا

Maksudnya: **“Dan jika keduanya bercerai, maka Allah akan mencukupkan (keperluan) masing-masing dari limpah kurnia-Nya. Dan (ingatlah) Allah Maha Luas limpah kurniaNya, lagi Maha Bijaksana.”**

Ayat ini menegaskan bahawa walaupun kes perceraian berlaku, Allah menjanjikan rezeki dan kecukupan kepada setiap pihak — merupakan satu bentuk pengajaran tentang keikhlasan dan keadilan dalam pengakhiran hubungan yang teratur. Ia mencerminkan nilai talak sunni sebagai bentuk perceraian yang **teratur dan bertanggungjawab**, serta mengingatkan kepada kasih sayang dan kesejahteraan selepas pemisahan.

METODOLOGI KAJIAN

Data diperolehi daripada kajian perpustakaan dan dokumentasi, meliputi sorotan literatur kajian terdahulu serta bahan ilmiah berkaitan institusi kekeluargaan, perceraian dan kesejahteraan sosial. Sumber yang dirujuk termasuk ayat al-Quran, jurnal akademik, kertas kerja, buku ilmiah, laporan statistik, artikel dan temuramah media, dan penerbitan yang berkaitan isu kekeluargaan dan sosial.

KERANGKA DISKUSI

Masalah utama yang dihadapi adalah kekeliruan dalam mengambil langkah awal selepas berlakunya perceraian (Abd Malib, et al., 2022). Empat kategori permasalahan yang berkait dengan kekeliruan ini adalah kestabilan emosi, ketiadaan sokongan sosial, hubungan lanjutan kekeluargaan dan perubahan fungsi keibubapaan.

Secara berperingkat, perbincangan ini dibahagikan kepada beberapa bahagian kerangka pemikiran yang diilustrasikan seperti di bawah;

Kategori	Perceraian Bermasalah (<i>Nasty Divorce</i>)	Perceraian Tidak Bermasalah (<i>Healthy Divorce</i>)
1. Kestabilan Emosi Pasca-Perceraian	Trauma, kemurungan, dendam, tekanan berpanjangan, kekeliruan identity	Lega, penerimaan, keyakinan diri, kestabilan emosi, motivasi hidup baru
2. Peranan Sokongan Sosial	Terpinggir, stigma sosial, sokongan tidak konsisten, konflik komuniti, rasa bersalah	Jaringan komuniti, keluarga menyokong, rakan memahami, akses bantuan profesional, keterhubungan sosial
3. Pengurusan Hubungan Lanjutan Keluarga	Permusuhan berterusan, komunikasi tegang, enggan bekerjasama, saling menafikan peranan, hubungan mentua terputus	Komunikasi matang, kerjasama fleksibel, hormat peranan masingmasing, penyelesaian bersama, kesinambungan silaturrahim
4. Dinamika Fungsi Keibubapaan	Perebutan hak jagaan, sabotaj keibubapaan, manipulasi anak, inkonsistensi peraturan, kurang fokus terhadap perkembangan anak	Keibubapaan bersama, keseimbangan peranan, keutamaan kesejahteraan anak, konsistensi didikan, penjagaan berstruktur

Bagi menyokong kefahaman secara visual terhadap perbezaan antara **perceraian bermasalah (nasty divorce)** dan **perceraian tidak bermasalah (healthy divorce)**, gambarajah 1 yang ilustrasi janaan AI telah dihasilkan. Ilustrasi ini bukan sekadar sebagai hiasan, tetapi berfungsi sebagai alat pedagogi yang berkesan untuk menyampaikan mesej bahawa bukan semua perceraian membawa kepada keretakan emosi yang mendalam, dan perpisahan yang diurus secara matang

masih mampu membentuk ekosistem keluarga yang stabil dan sihat untuk anakanak serta pihak-pihak terlibat.



Rajah 1. Ilustrasi janaan AI.

Visual ini memaparkan dua situasi secara bersebelahan: sebelah kiri menunjukkan gambaran perceraian bermasalah dengan suasana tegang, ibu bapa yang saling bertengkar dan anak yang kelihatan tertekan di tengah-tengah konflik. Manakala ruangan sebelah kanan menggambarkan perceraian tidak bermasalah, di mana kedua-dua ibu bapa berkomunikasi dengan tenang, menghormati satu sama lain dan anak dilihat gembira serta sejahtera.

Kajian ini memperincikan kategori perbandingan antara **perceraian bermasalah** (*nasty divorce*) dan **tidak bermasalah** (*healthy divorce*). Setiap kategori dihuraikan dalam untuk isu, kesan, serta keperluan intervensi yang bersesuaian.

Kestabilan Emosi Pasca-Perceraian

Kestabilan emosi pasca-perceraian merupakan faktor terpenting yang mempengaruhi keupayaan individu untuk menyesuaikan diri selepas perpisahan. Dalam kes perceraian bermasalah, emosi seperti marah, kecewa, dendam dan kesedihan mendalam sering tidak ditangani dengan baik. Ini boleh membawa kepada gangguan psikologi seperti kemurungan, kegelisahan, dan ketagihan tingkah laku merosakkan. Individu terperangkap dalam naratif konflik yang tidak selesai, menjadikan proses "move on" amat perlahan atau tidak berlaku langsung. Kesan ini juga boleh menjalar kepada hubungan sosial dan tanggungjawab keibubapaan.

Sebaliknya, dalam perceraian tidak bermasalah, kestabilan emosi lebih mudah dicapai kerana wujud ruang untuk penerimaan dan penyembuhan yang sihat. Komunikasi yang terbuka dan kurang permusuhan membolehkan individu mengurus emosi dengan lebih berkesan. Walaupun kesedihan tetap wujud, individu dapat membina semula harga diri dan mengembangkan potensi baharu dalam kehidupan pasca-perceraian. Ini menjadikan mereka lebih berdaya tahan (resilient) dan bermotivasi untuk terus membina masa depan yang stabil, sama ada secara individu atau sebagai ibu/bapa tunggal yang fungsional.

Teori Lewin banyak digunakan untuk memahami konteks peralihan emosi dan psikologi pasca perceraian oleh kajian-kajian berkaitan menangani kekusutan (Megawati & Maulana, 2024; Pertiwi & Syah, 2024). Bersesuaian dengan kerangka teori perubahan Lewin, kestabilan emosi boleh dilihat melalui tiga fasa utama: "*unfreeze*", "*change*" dan "*refreeze*". Individu yang melalui perceraian perlu 'mencairkan' ikatan emosi dan psikologi daripada perkahwinan lama, melalui proses refleksi dan penerimaan realiti baharu.

Fasa perubahan memerlukan adaptasi terhadap identiti baharu sebagai individu tunggal, manakala fasa '*refreeze*' membantu membina kestabilan emosi yang baharu dan lebih kukuh. Dalam kes perceraian tidak bermasalah, ketiga-tiga fasa ini berlaku dengan lebih lancar kerana adanya kesediaan mental dan emosi untuk berubah, manakala dalam kes bermasalah, proses ini sering tersekat dalam fasa '*unfreeze*' kerana trauma atau penolakan terhadap realiti perpisahan.

Peranan Sokongan Sosial

Sokongan sosial menjadi penentu penting dalam menentukan sama ada individu pascaperceraian akan mengalami pengasingan atau mampu pulih dengan baik. Dalam konteks perceraian bermasalah, individu sering berasa terpinggir kerana stigma masyarakat, konflik keluarga mertua, serta hilang sokongan rakan-rakan yang sebelum ini berpihak kepada pasangan. Lebih memburukkan keadaan, apabila tiada akses kepada kaunseling atau sokongan komuniti, tekanan yang dihadapi menjadi lebih menebal dan berpanjangan. Situasi ini menjejaskan kualiti hidup dan menghalang proses pemulihan.

Namun begitu, dalam perceraian tidak bermasalah, sistem sokongan sosial memainkan peranan proaktif. Keluarga, rakan, dan komuniti cenderung bersikap lebih neutral dan menyokong kedua-dua pihak secara adil. Akses kepada kaunselor, kumpulan sokongan atau program intervensi membantu individu membina semula rangkaian sosial yang sihat. Dengan kehadiran sokongan seperti ini, individu lebih berupaya menjalani fasa transisi dengan positif serta mengurangkan risiko implikasi jangka panjang terhadap kesihatan mental dan fungsi sosial mereka.

Dalam konteks pasca-perceraian, kehadiran sokongan sosial yang kuat berfungsi sebagai gabungan sokongan (*support coalition*) yang membantu individu menstrukturkan semula kehidupan sosial dan emosi mereka. Mereka yang melalui perceraian tidak bermasalah lazimnya mendapat akses awal kepada rangkaian ini – keluarga, rakan, kaunselor – yang bertindak sebagai ‘agen perubahan’. Sebaliknya, individu dalam perceraian bermasalah gagal membina gabungan sokongan yang efektif, menyebabkan proses pemulihan tertangguh dan cabaran menjadi lebih berat tanpa bantuan yang sistematik.

Selaras dengan model perubahan Kotter, terdapat lapan prinsip penting untuk mewujudkan gabungan dan pembentukan sistem sokongan (Sihite, 2023) yang biasanya digunakan untuk mengendalikan perubahan dalam organisasi mahupun institusi. Dalam konteks kajian ini, perubahan yang tersusun dan terancang seperti ini adalah penting dalam menjadi pemangkin dan menggerakkan perubahan yang sihat dan positif pada pasca perceraian.



Rajah 3. Model 8 Peringkat Kotter

Sumber: Abdul Hadi & Abdul Wahab (2021)

Aplikasi model Kotter ini boleh digunakan dalam membentuk acuan sokongan institusi yang lebih berstruktur. Tidak dinafikan, sekiranya pasca-perceraian diurus dengan lebih baik, penderitaan dan kepincangan dari kehidupan berumah tangga yang toksik beralih kepada kehidupan yang lebih teratur, gembira dan berdaya tahan.

Pengurusan Hubungan Lanjutan Kekeluargaan

Selepas perceraian, hubungan dengan bekas pasangan, keluarga mertua, serta anggota keluarga yang lain tetap berterusan terutama jika wujud anak bersama. Dalam perceraian bermasalah, hubungan lanjutan ini biasanya penuh dengan ketegangan. Konflik yang tidak diselesaikan membawa kepada komunikasi yang kasar, boikot silaturrahim dan ketidakmampuan untuk membuat keputusan bersama. Hubungan dengan keluarga mertua sering terputus, malah anak-anak juga berdepan dengan kekeliruan terhadap hubungan kekeluargaan mereka, lalu menjejaskan identiti sosial mereka.

Sebaliknya, dalam perceraian tidak bermasalah, hubungan lanjutan dikekalkan secara profesional dan penuh adab. Bekas pasangan bersetuju untuk mengekalkan komunikasi sihat khususnya berkaitan hal anak. Hubungan dengan mertua masih dihormati walaupun batasbatas baharu ditetapkan. Dinamika ini mengekalkan kestabilan jaringan kekeluargaan dan memberi isyarat positif kepada anak-anak bahawa keluarga masih wujud dalam bentuk baharu yang lebih matang dan berfungsi. Ini membina persekitaran sosial yang selamat dan mengurangkan kecederaan emosi dalam jangka panjang.

Transformasi adaptif dalam pengurusan perubahan menjelaskan keupayaan individu dan sistem sosial untuk menyesuaikan diri dengan realiti baharu. Dalam konteks hubungan lanjutan pasca-perceraian, perubahan peranan kekeluargaan (contohnya bekas suami/isteri kepada rakan keibubapaan) memerlukan penyesuaian struktur sosial dan komunikasi. Perceraian tidak bermasalah menampakkan keupayaan tinggi untuk adaptasi, dengan peranan yang disusun semula secara jelas dan fleksibel. Namun dalam kes bermasalah, ketiadaan kejelasan peranan dan penolakan terhadap struktur baharu menyebabkan berlaku ketegangan yang berterusan, sekali gus mengganggu kesinambungan hubungan kekeluargaan yang harmoni.

Dinamika Fungsi Keibubapaan

Fungsi keibubapaan merupakan elemen paling terkesan apabila berlaku perceraian, khususnya dalam kes yang bermasalah. Dalam perceraian nasty, berlaku perebutan hak penjagaan, sabotaj terhadap imej keibubapaan bekas pasangan, serta penggunaan anak sebagai alat konflik. Anak-anak sering menjadi mangsa tekanan psikologi dan konflik kesetiaan antara ibu bapa, yang menyebabkan gangguan tingkah laku serta perkembangan emosi tidak seimbang. Ketidadaan struktur keibubapaan yang konsisten juga menyukarkan pembentukan disiplin dan nilai moral anak.

Sebaliknya, dalam perceraian healthy, fungsi keibubapaan dikekalkan secara bersama (*co-parenting*) dengan penekanan terhadap keperluan anak sebagai keutamaan. Ibu bapa yang matang mampu meletakkan perbezaan peribadi ke tepi demi kesejahteraan anak. Jadual lawatan, pengurusan pendidikan, dan komunikasi bersama dikendalikan dengan penuh tanggungjawab dan kerjasama. Hasilnya, anak-anak membesar dalam persekitaran yang stabil walaupun ibu bapa sudah tidak bersama. Ini menunjukkan bahawa keibubapaan efektif tidak semestinya hanya wujud dalam perkahwinan, tetapi juga boleh diteruskan selepas perceraian yang diurus secara matang dan terancang.

Dalam perspektif pengurusan perubahan, pendekatan perubahan berasaskan pendekatan sistemik menekankan pentingnya konsistensi dan komunikasi dalam menyokong perubahan struktur keluarga. Keibubapaan selepas perceraian memerlukan penyusunan semula peranan dan tanggungjawab melalui pendekatan kolaboratif, yang seiring dengan prinsip ‘*aligning and empowering*’ dalam teori Kotter. Dalam *healthy divorce*, ibu bapa dapat menstruktur semula peranan mereka secara bersama dan berterusan, serta menyampaikan mesej yang konsisten kepada anak. Manakala dalam *nasty divorce*, tiadanya penyelarasan dan komunikasi menjadikan sistem keibubapaan terganggu, menyebabkan anak terdedah kepada konflik peranan dan ketidakpastian emosi yang berpanjangan.

KESIMPULAN

Kesimpulannya, perbezaan antara perceraian bermasalah (*nasty divorce*) dan tidak bermasalah (*healthy divorce*) bukan sekadar terletak pada status hukum atau prosedur perundangan, tetapi lebih tertumpu kepada dinamika emosi, sosial dan fungsi kekeluargaan pasca-perpisahan. Empat dimensi utama – kestabilan emosi, sokongan sosial, hubungan lanjutan kekeluargaan dan fungsi keibubapaan – memperlihatkan kesan yang berbeza secara signifikan terhadap kesejahteraan individu dan anak-anak. Kategori ini penting dalam menilai keperluan serta keutamaan intervensi sosial, agar strategi yang dibentuk tidak bersifat umum, tetapi disesuaikan dengan kerumitan konteks yang dihadapi oleh setiap keluarga pascaperceraian.

Dalam kerangka pengurusan perubahan, pendekatan teoritikal seperti model Lewin dan Kotter memberi panduan berguna dalam memahami bagaimana individu dan sistem sosial menyesuaikan diri terhadap realiti baharu selepas perpisahan. Dengan pemahaman ini, perceraian dapat diurus bukan sekadar sebagai penamatan hubungan, tetapi sebagai permulaan kepada transformasi sosial dan psikologi yang memerlukan struktur, sokongan dan kefahaman yang menyeluruh. Justeru, kajian ini mencadangkan agar dasar dan intervensi kekeluargaan perlu diperkukuhkan dengan pendekatan berasaskan kategori perceraian, supaya setiap keluarga dapat diberi ruang untuk membina semula kehidupan dengan lebih sejahtera, lestari dan bermaruah.

PENGHARGAAN

Kajian ini adalah sebahagian daripada geran penyelidikan UNIMAS (NAT/F01/LPPKN/87129/2025) bertajuk ‘*From Nasty Divorce to Healthy Divorce: The Relationship of Parenting Functional in Post-Divorce Child Well-Being in Sarawak*’

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CABARAN DAN MASA DEPAN WANITA BEKERJAYA DALAM MENYEIMBANGI PERANAN KERJA DAN KELUARGA

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ABSTRAK

Penyertaan wanita dalam dunia pekerjaan semakin meningkat dalam pelbagai sektor, termasuk sektor swasta yang sering menuntut komitmen kerja yang tinggi. Walau bagaimanapun, peningkatan ini turut membawa cabaran besar kepada wanita, khususnya dalam usaha menyeimbangkan tanggungjawab kerjaya dengan peranan sebagai isteri dan ibu. Kajian ini bertujuan untuk meneroka cabaran-cabaran utama yang dihadapi oleh wanita bekerjaya dalam menyeimbangi peranan kerja dan keluarga, serta strategi-strategi yang diamalkan oleh mereka bagi menangani konflik peranan tersebut. Kajian menggunakan pendekatan kualitatif dengan kaedah temu bual separa berstruktur yang melibatkan enam orang wanita yang bekerja di sektor swasta di Sarawak. Pemilihan peserta dibuat secara pensampelan bertujuan dan data dianalisis menggunakan kaedah analisis tematik. Hasil kajian mengenal pasti empat cabaran utama yang dihadapi oleh wanita bekerjaya, iaitu kesukaran mengurus masa, tanggungjawab penjagaan anak, tekanan kerja yang tinggi, serta polisi cuti bersalin yang terhad. Dalam usaha menyeimbangi kedua-dua peranan, lima strategi utama telah dikenal pasti: pengurusan masa yang berkesan, sempadan kerja-keluarga yang jelas, sokongan daripada keluarga khususnya suami dan ibu bapa, dasar kerja yang lebih fleksibel, serta persekitaran kerja yang menyokong. Kajian ini menyokong Teori Peranan yang menerangkan bahawa individu sering mengalami konflik apabila menjalankan pelbagai peranan dengan jangkaan yang berbeza dan bertindih. Secara keseluruhannya, dapatan kajian ini memberi implikasi penting kepada organisasi dan pembuat dasar dalam membentuk polisi kerja yang lebih mesra keluarga. Cadangan dikemukakan agar pihak majikan dan kerajaan menyediakan inisiatif seperti cuti bersalin yang mencukupi, kemudahan penjagaan anak di tempat kerja dan polisi sokongan penyusuan bagi membantu wanita bekerjaya mencapai keseimbangan kerja dan keluarga yang mampan serta menyumbang secara optimum dalam organisasi.

Kata Kunci: Wanita Bekerjaya, Keseimbangan Kerja-Keluarga, Pengurusan Masa, Sokongan Keluarga, Polisi Mesra Keluarga.

PENGENALAN

Peningkatan wanita di alam pekerjaan bukan perkara biasa, malah mereka telah terlibat dalam pelbagai jawatan samada sektor awam, swasta, formal, tidak formal dan termasuk sektor yang

dahulunya di dominasi oleh golongan lelaki seperti penguatkuasaan dan pertahanan. Statistik terkini telah menunjukkan lebih 50% daripada wanita ini adalah penyumbang kepada sumber tenaga kerja dalam sektor formal di Malaysia. (Jabatan Statistik, 2018) dan daripada jumlah ini seramai 70% telah berkeluarga, maka menyumbang kepada keluarga dwi-kerjaya. Apabila kedua-dua suami isteri bekerja, maka ini menyebabkan kesukaran untuk menyeimbangkan peranan kerja dan keluarga khususnya dalam kalangan wanita. Usaha untuk menyeimbangkan peranan di antara kerja dan keluarga kadang kala menimbulkan masalah atau tekanan (Kahn et al, 1964). Dengan keadaan semasa sekarang, yang kadang-kala memerlukan kerja lebih masa, sempadan kerja-keluarga yang semakin kabur akibat kesan teknologi, maka ianya telah menyukarkan wanita bekerja untuk mencapai keseimbangan ini.

Kajian awal di barat oleh The Michigan Quality of Employment Survey oleh Quinn dan Staines pada tahun 1979 telah melaporkan seramai 38% dan 43 % wanita bekerja, berkahwin dan mempunyai anak mengalami konflik kerja-keluarga dan konflik keluarga-kerja. Dapatan kajian yang hampir sama turut diperolehi oleh pengkaji lain dan sehingga kini konflik berlaku namun dalam konteks berbeza akibat pengaruh teknologi dan dunia tanpa sempadan. Di Malaysia, tren yang hampir sama berlaku apabila kajian oleh Noor (2006), Aminah (2005), Sabil & Marican (2011) turut mendapati wanita bekerja menghadapi konflik kerja-keluarga.

Secara umum, jangkaan sosiobudaya dalam gender sering beranggapan bahawa wanita akan memikul tanggungjawab di rumah dan sebagai pekerja. Kajian telah menunjukkan bahawa sektor swasta memberikan cabaran kepada ibu yang bekerja dalam mencapai keseimbangan kerja-kehidupan. Menurut Nwokorie & Okechukwu (2018), kajiannya di Nigeria mendapati bahawa wanita di sektor swasta menghabiskan lebih banyak masa di tempat kerja berbanding di sektor awam, yang membawa kepada kebimbangan tentang ketidacukupan masa penjagaan dan keseimbangan keseluruhan. Berdasarkan '*scarcity hypothesis*' telah mengandaikan bahawa penglibatan dalam pelbagai peranan akan menghadkan sumber tenaga dan masa yang secara tidak langsung akan menyebabkan gejala ketegangan seperti kebimbangan dan mood yang negatif jika konflik tersebut masih berlarutan.

Di samping itu, kekurangan dasar mesra keluarga, seperti sokongan penjagaan kanak-kanak di sektor swasta turut memberi cabaran yang besar kepada wanita bekerja untuk mengurus kerja dan keluarga. Senario ini telah menyebabkan berlakunya penurunan terhadap penglibatan tenaga kerja wanita dalam pekerjaan (Ravindranath et al., 2021). Bagi membantu wanita menangani isu tidak seimbangan, sokongan dari pelbagai pihak khususnya pihak organisasi, kerajaan, badan bukan kerajaan termasuk komuniti adalah diperlukan. Pihak organisasi perlu mempertimbangkan untuk menyediakan pusat asuhan kanak-kanak bagi mengurangkan beban wanita bekerja dan seterusnya memupuk budaya organisasi yang menyokong.

Perlaksanaan pengaturan kerja fleksibel boleh dipertimbangkan memandangkan dalam dunia yang berasaskan teknologi dan digital, kerja pejabat boleh dilakukan pada bila-bila masa dan di mana-mana juga keberadaan seseorang tersebut. Menurut Hidayah (2021), pengurusan yang cermat perlu diterapkan untuk mengelakkan peningkatan konflik peranan yang boleh timbul akibat kekurangan batasan waktu. Ini melibatkan pemantauan terperinci terhadap perubahan jadual kerja dan memberikan sokongan kepada pekerja dalam menyesuaikan diri dengan perubahan tersebut. Selain itu, cuti bersalin juga merupakan aspek penting yang perlu dititikberatkan dalam menyokong keseimbangan hidup-bekerja. Hasnan (2019) menunjukkan bahawa kerajaan telah mengemaskini pindaan kepada Akta Kerja 1955, yang membolehkan pekerja wanita di sektor swasta menikmati cuti bersalin selama 90 hari, berbanding sebelumnya hanya 60 hari.

Peningkatan tempoh cuti bersalin ini memberikan peluang kepada pekerja wanita untuk lebih memberi tumpuan kepada keperluan keluarga dan anak-anak mereka, sekali gus meningkatkan keseimbangan di antara kehidupan pekerjaan dan tanggungjawab keluarga. Dengan demikian, dasar yang fleksibel dan penekanan terhadap cuti bersalin akan memberikan kelebihan kepada pekerja dan mengurangkan konflik kerja-keluarga. Jelaslah bahawa persekitaran dan dasar kerja sektor swasta mempengaruhi keseimbangan kerja-kehidupan wanita bekerja dengan ketara. Kekurangan dalam aspek fleksibiliti, sistem sokongan dan dasar mesra keluarga di sektor swasta menimbulkan cabaran bagi wanita bekerjaya dalam mencapai keseimbangan kerja-kehidupan yang memuaskan.

Bagi menangani permasalahan kajian dan mengkaji dengan lebih mendalam dilema yang dihadapi oleh wanita bekerjaya untuk mencapai keseimbangan kerja-keluarga, maka dua fokus utama objektif kajian adalah seperti berikut:

Objektif 1 : Meneroka cabaran-cabaran yang dihadapi oleh wanita bekerjaya untuk menyeimbangkan peranan kerja dan keluarga.

Objektif 2 : Meneroka strategi-strategi yang diamalkan oleh wanita bekerjaya untuk menyeimbangkan peranan kerja dan keluarga.

SOROTAN KAJIAN LEPAS

Cabaran-Cabaran Dalam Mengimbangi Kerja-Keluarga

Wanita berkerjaya sering dilema samada untuk meneruskan pekerjaan atau berhenti sepenuhnya bagi memberi laluan terhadap penjagaan keluarga sepenuh masa. Satu isu penting yang sering dibincangkan adalah hubungan antara rumah dan kerja. Kebanyakan kajian menunjukkan bahawa wanita bekerja menghadapi masalah berterusan dalam memenuhi harapan kedua-dua peranan kerja dan keluarga. Kajian yang dilakukan oleh Rahamah (2012) membincangkan wanita-wanita ini mengalami beban kerja di rumah sangat tinggi dan masa yang terhad untuk menyelesaikan segala tanggungjawab, termasuk menjaga anak-anak. Di samping itu, apabila berada di tempat kerja, mereka berdepan dengan cabaran seperti prosedur kenaikan pangkat dan hubungan yang kompleks dengan rakan sekerja yang mempunyai pelbagai ragam.

Kajian oleh Rajab & Aisyah (2014), menunjukkan bahawa bebanan kerja lebih memberi kesan kepada keluarga daripada bebanan keluarga kepada kerja. Jelaslah, konflik kerja-keluarga yang dialami oleh wanita ini memberi kesan negatif kepada kesihatan mental dan kepuasan hidup responden. Kajian seterusnya di Ghana yang dilakukan oleh Delle & Arkoful (2014) mendapati bahawa wanita yang memegang jawatan tinggi, khususnya dalam kumpulan pengurusan, mengalami konflik kerja-keluarga yang lebih tinggi berbanding dengan kumpulan bukan pengurusan. Selain itu, konflik ini juga dialami dengan lebih teruk oleh pekerja yang telah berkahwin berbanding dengan mereka yang belum berkahwin. Hasil kajian ini memperkukuhkan lagi kepada teori peranan berkenaan konflik yang berlaku akibat tidak seimbangan kerja dan keluarga.

Kajian oleh Omar et al., (2022) yang dilakukan di Majlis Sukan Negara Malaysia terhadap 100 orang wanita bekerja mendedahkan bahawa mereka menghadapi kesukaran untuk mencapai keseimbangan kerja-keluarga, yang mana pengurusan tekanan, budaya kerja dan peranan majikan adalah penyumbang utama. Kakitangan terutama wanita bekerja, sering menghadapi

masalah dalam memenuhi jangkaan majikan dan keperluan keluarga mereka. Kajian oleh Sabil & Merican (2011) telah membuktikan bahawa hanya 5% suami yang sedia membantu isteri di rumah. Oleh yang demikian, sekiranya kurang sokongan yang diterima daripada ahli keluarga, maka ianya pasti mengundang banyak masalah dan seterusnya tekanan.

Langkah dan Amalan Berterusan Mencapai Keseimbangan Kerja-Keluarga

Kajian empirikal yang dilakukan oleh Fatimah (1985) telah membincangkan strategi-strategi yang diamalkan oleh wanita dalam menangani konflik peranan. Antaranya adalah pengurusan waktu dan tugas. Hasil kajian mendapati responden menghadkan masa tertentu untuk menjalankan sesuatu peranan yakni menetapkan had atau jangka waktu yang khusus sama ada berkaitan dengan kerja di pejabat atau di rumah. Responden juga mengagihkan tugas-tugas mereka kepada staf lain atau berkongsi tugas tersebut dengan orang lain bagi mengurangkan beban kerja dan meningkatkan sokongan sosial. Responden merancang dan mengurus atur masa dengan lebih tersusun untuk memastikan pelaksanaan peranan menjadi lebih teratur seperti merancang jadual yang efisien dan memberikan keutamaan yang sewajarnya kepada setiap peranan.

Kajian oleh Kluczyk (2013) di Ireland juga menekankan keperluan untuk memastikan setiap aspek rumah tangga diselesaikan dengan sempurna. Wanita bekerjaya menghadapi kekurangan masa untuk membantu anak-anak dalam aspek pendidikan. Oleh itu, masalah keseimbangan kerja dan keluarga tidak hanya berkaitan dengan memenuhi tuntutan kerja di pejabat, malah urusan rumah dan pendidikan anak-anak. Inisiatif sokongan seperti program penjagaan anak dan fleksibiliti waktu kerja dapat membantu mengurangkan bebanan wanita yang berusaha mencapai keseimbangan yang diinginkan antara tanggungjawab sebagai ibu dan keperluan profesional mereka.

Kajian ini juga disokong oleh penyelidikan oleh Soidi & Sombuling (2016) menyatakan wanita bekerjaya di Malaysia yang berumur 30-45 tahun menunjukkan bahawa struktur keluarga dan tanggungjawab keibubapaan adalah penting dalam menguruskan kehidupan peribadi dan kerja dengan wujudnya budaya di Malaysia yang mementingkan sistem sokongan. Kajian Hassan et al., (2010) juga menyatakan bahawa budaya timur mengamalkan nilai kolektivis yang mana konsep tersebut lebih mementingkan kekeluargaan. Penyelidikan oleh Sabariah et al. (2020) di Sabah mendapati 32% wanita menyatakan bahawa penglibatan keluarga, suami membantu menjaga anak dan menguruskan kerja rumah mampu memberi kesan kepada keseimbangan kerja-keluarga. Oleh itu, motivasi wanita bekerjaya dalam menangani dwi-bebanan ini juga terikat erat dengan sokongan yang diterima daripada keluarga dan organisasi.

Kajian oleh Carlson et al. (2020) menambah tentang penglibatan suami iaitu dapatan menunjukkan suami yang membantu isteri dalam kerja rumah dan penjagaan anak cenderung lebih bahagia. Sokongan dari suami ini dapat mengurangkan tekanan yang dialami oleh isteri, terutama apabila isteri juga bekerja. Ini dapat mengurangkan konflik antara kerja dan keluarga serta meningkatkan kesejahteraan keseluruhan dalam keluarga. Kesedaran terhadap faktor ini penting untuk membentuk polisi organisasi yang lebih inklusif dan menyokong keperluan pekerja dalam mencapai keseimbangan yang diinginkan dalam kehidupan bekerja.

Teori Peranan

Teori peranan yang dibangunkan oleh Khan et al (1964) memberikan pandangan yang holistik terhadap peranan individu dalam organisasi. Teori ini berkisar pada idea bahawa individu memainkan pelbagai peranan dalam konteks organisasi, dan setiap peranan membawa jangkaan dan tanggungjawab yang tersendiri. Jelaslah, memberi pemahaman bahawa peranan tersebut tidak bersifat terpencil; sebaliknya, mereka saling berkaitan, dan jangkaan yang berkaitan dengan setiap peranan kadang-kadang mungkin bertentangan. Dalam konteks wanita bekerjaya yang berdepan dengan cabaran untuk menyesuaikan diri dengan peranan mereka sebagai profesional, ibu, dan individu. Mereka tidak hanya diharapkan untuk mencapai kecemerlangan dalam kerjaya mereka tetapi juga untuk memenuhi tanggungjawab sebagai ibu dan menjaga keperluan peribadi mereka.

Melalui penerapan teori peranan, pengkaji dapat menilai bagaimana wanita bekerjaya berjaya atau berjuang dalam mengendalikan tuntutan yang kompleks. Penyesuaian yang berjaya dalam peranan ini bukan sahaja memberikan kesan positif ke atas individu tersebut tetapi juga memberi sumbangan kepada pembangunan organisasi yang lebih berdaya saing. Dengan memahami kompleksiti peranan ini, organisasi dapat membangunkan polisi yang bersesuaian dan program sokongan yang lebih baik untuk membantu wanita bekerjaya mencapai keseimbangan yang diinginkan dalam kehidupan mereka.

METODOLOGI KAJIAN

Rekabentuk Kajian

Kajian kualitatif ini menggunakan temu bual separa berstruktur untuk meneroka cabaran dan strategi yang diamalkan oleh wanita bekerjaya untuk menyeimbangi peranan kerja dan keluarga. Pendekatan kualitatif dipilih kerana ia membolehkan penerokaan mendalam tentang perspektif dan pengalaman wanita-wanita ini.

Pemilihan Peserta

Enam orang wanita yang terdiri daripada pelbagai jawatan bekerja di sektor swasta telah terlibat dalam kajian dan pemilihan menggunakan pensampelan bertujuan. Peserta dipilih berdasarkan kriteria berikut:

- i) Berkahwin dan telah mempunyai sekurang-kurangnya seorang anak
- ii) Sekurang-kurangnya lima tahun pengalaman bekerja

Kajian rintis telah dijalankan terhadap dua orang wanita bekerja untuk memperhalusi protokol temu bual dan memastikan kualiti data.

Pengumpulan Data

Temu bual separa berstruktur telah dijalankan dalam Bahasa Melayu, yang membolehkan fleksibiliti sambil memastikan tema utama ditangani. Temu bual telah dirakam audio dan ditranskripsikan secara verbatim.

Analisis Data

Data yang ditranskripsikan telah dianalisis menggunakan analisis tematik, mengikut kerangka kerja yang dicadangkan oleh Braun dan Clarke (2006). Kaedah ini melibatkan pengenalpastian, analisis dan pentafsiran corak dalam data secara sistematik. Untuk meningkatkan kebolehpercayaan analisis, kebolehpercayaan antara penilai telah dinilai antara dua penyelidik, bagi memastikan konsistensi dalam pengenalpastian dan pentafsiran tema.

Etika Kajian

Etika kajian dipatuhi sepenuhnya sepanjang proses penyelidikan. Semua peserta memberikan persetujuan termaklum dan kerahsiaan dikekalkan dengan memberikan nama samaran dan menyimpan data dengan selamat.

HASIL DAPATAN DAN PERBINCANGAN

Seramai enam orang wanita yang bekerja di sektor swasta dengan pelbagai jawatan telah terlibat dalam kajian ini. Mereka merangkumi wanita yang berada pada awal kerjaya, pertengahan kerjaya dan di akhir kerjaya yang secara puratanya mempunyai sekurang-kurangnya 2 orang anak dan keatas.

Jadual 1 : Demografi Informan

Bil	Umur	Jawatan	Kelayakan Akademik	Tempoh bekerja	Bilangan anak
1	35	Pembantu Perolehan	Sijil Pelajaran Malaysia	10	3
2	29	Pembantu Pentadbiran	Ijazah Sarjana Muda	2	1
3	31	Eksekutif	Ijazah Sarjana Muda	4	2
4	55	Eksekutif Pentadbiran / Penyelaras Jabatan	Sijil Pelajaran Malaysia	28	4
5	46	Penyelias Kontrak	Sijil Pelajaran Malaysia	22	1
6	41	Dietetik	Ijazah Sarjana Muda	18	3

Hasil Dapatan Objektif 1

Hasil temubual telah mengenalpasti empat tema utama dalam cabaran mengurus kerja dan keluarga iaitu kesukaran mengurus masa, penjagaan anak, tekanan kerja dan polisi cuti bersalin terhad.

Tema 1 : Kesukaran mengurus masa

Kesemua informant bersetuju bahawa kesukaran mengurus masa merupakan cabaran utama untuk mengurus kerja dan keluarga.

Informan 1:

“...cabaran dalam aspek masa kerana kita sebagai pekerja perlu ikut ketetapan masa yang telah diberikan oleh pihak syarikat. Namun begitu, saya juga perlu ikut jadual persekolahan anak. Oleh itu, saya perlu keluar awal daripada masa makan sebab

perlu ambil anak saya balik sekolah sebelum masa rehat. Sepatutnya, masa makan sejam tetapi dilebihkan kepada 2 jam. Hal ini menyebabkan kerja saya pada masa itu akan terganggu...”

Informan 2:

“...masa saya adalah sangat sangat terhad di mana saya akan bangun awal pagi untuk sediakan kelengkapan anak sebelum dia pergi ke sekolah. Saya juga perlu mengejar masa kerana perlu turun awal pagi dari rumah untuk pergi ke tempat kerja yang mengambil masa sejam untuk sampai...”

Pengurusan masa yang tidak efektif boleh menyebabkan seseorang tidak dapat memenuhi tanggungjawab keluarga mereka secara memuaskan, yang boleh menjejaskan kepuasan dalam hubungan keluarga dan peranan mereka sebagai ibu. Kajian oleh Bianchi et al (2012) juga menekankan kesukaran ini boleh menyebabkan masa yang terhad untuk aktiviti rumah tangga dan menyukarkan perancangan harian, keletihan dan mengurangkan kualiti hidup. Johnson et al. (2022) menunjukkan bahawa ketidakseimbangan kerja-hidup sering kali mengakibatkan ketidakmampuan untuk menguruskan tugas harian secara efisien. Tugas-tugas yang tidak dapat diselesaikan dalam masa yang ditetapkan boleh menyebabkan beban kerja yang meningkat dan mengganggu keseimbangan hidup. Jelaslah, wanita bekerjaya menghadapi kesukaran masa dalam menyeimbangi antara kerja dan keluarga.

Tema 2 : Penjagaan anak

Cabaran dalam penjagaan anak juga adalah cabaran dominan bagi wanita bekerjaya di sektor swasta yang mana mereka perlu meletakkan keutamaan terhadap keluarga terutamanya anak-anak mereka walaupun sedang bekerja. Dapatan kajian ini menyokong konsep Greenhaus dan Callanan (2006) yang mana konflik berasaskan-masa berlaku apabila kedua-dua domain keluarga dan kerja bersaing untuk masa individu.

Informan 1

“...masalah anak sakit tapi the next day perlu buat kerja yang urgent...”

Informan 4:

“...saya perlu hantar dan ambil anak sekolah. Kalau anak demam, cikgu akan call saya dan saya perlu ambil. Masa saya meeting pula, perlu ambil anak balik sekolah lagi...”

Ibu yang bekerja perlu menangani tekanan dwi-peranan sebagai penjaga anak dan pekerja. Tekanan ini boleh menyebabkan keletihan dan tekanan emosi yang tinggi. Perasaan ini boleh menjejaskan kesejahteraan mental dan emosi mereka (Brown, 2019). Tidak semua majikan memahami keperluan wanita yang perlu mengambil cuti kecemasan. Kekurangan sokongan dari majikan boleh menyebabkan wanita merasa tertekan dan tidak dihargai (Nguyen, 2017). Oleh itu, seseorang wanita perlu mengurus masa dengan baik untuk memastikan mereka dapat memberikan penjagaan yang mencukupi kepada anak yang sakit dan pada masa yang sama menyelesaikan kerja yang tertangguh. Ini memerlukan perancangan yang teliti dan keupayaan untuk mengutamakan tugas.

Tema 3 : Tekanan kerja

Selain itu, tekanan kerja juga merupakan antara cabaran bagi wanita mengimbangi hidup bekerja. Hampir semua informan bersetuju bahawa tekanan kerja yang banyak menyebabkan mereka tidak dapat menumpukan perhatian terhadap keluarga.

Informan 4:

"...in term of work, especially pasal staff welfare. Kalau staff masuk hospital, we have to tanya dengan area office. Kalau berlaku kematian, we need to arrange necessary donation. Saya pernah lambat balik untuk uruskan kerja tu. Bukan itu sahaja, sikap pekerja juga adalah cabaran. Pekerja memberi information lambat, tidak ikut dateline dan bergantung. Jadi, information yang diberikan kepada pihak atasan tidak tepat..."

Informan 5:

"...tekanan bebanan kerja juga adalah satu cabaran bagi saya kerana perlu siapkan segala laporan sebelum 2 minggu..."

Tema 4 : Polisi cuti bersalin terhad

Wanita bekerja khususnya di sektor swasta sering dilema dengan isu berkenaan cuti bersalin yang terhad. Misalnya, organisasi untuk Informan 2 bekerja hanya memberi tempoh cuti bersalin selama sebulan sahaja. Wanita yang kembali bekerja semula setelah cuti bersalin pendek boleh memberi implikasi terhadap produktiviti kerja dan juga kesihatan mental jangka panjang mereka (Larose, 2024).

Informan 2:

"...my company kalau cuti bersalin hanya satu bulan sahaja. Kalau dapat, cuti bersalin tu cukup dan lama lah untuk ibu ibu tapi buat masa ni, tiada seorang pun berani bersuara..."

Polisi cuti bersalin yang terhad juga boleh mempengaruhi kualiti pengasuhan anak, kerana tidak mempunyai masa yang mencukupi untuk membina ikatan dengan bayi mereka dan menyediakan penjagaan yang optimum (Kramer & Hinton, 2021). Peralihan daripada cuti bersalin kepada bekerja semula dengan tempoh yang sangat singkat memberikan cabaran kepada wanita yang bekerja dalam mengimbangi penjagaan anak dan tanggungjawab kerja (Kokubo et al., 2023). Oleh itu, cuti bersalin bergaji dalam jangkamasa yang bersesuaian dan polisi tempat kerja yang kondusif adalah penting untuk wanita bekerja.

Hasil Dapatan Objektif 2

Hasil temubual telah mengenalpasti lima tema utama untuk menangani cabaran dalam mengurus kerja dan keluarga iaitu pengurusan masa berkesan, sempadan kerja-keluarga, sokongan keluarga, polisi yang fleksibel dan persekitaran yang menyokong.

Tema 1 : Pengurusan masa berkesan

Kesemua informan bersetuju bahawa pengurusan masa yang baik membantu mereka mencapai keseimbangan antara tanggungjawab kerja dan keluarga. Kajian oleh Greenhaus dan Beutell

(2018) mendapati bahawa wanita bekerja yang dapat menguruskan masa mereka dengan baik lebih cenderung untuk mempunyai hubungan keluarga yang baik dan merasa lebih puas dengan kehidupan mereka, menyelesaikan tugas dengan cepat dan efisien serta mengurangkan tekanan dan keletihan.

Informan 2:

“...kalau saya bekerja adalah bekerja, which is hal family saya ketepikan dulu. Kalau saya balik rumah pula, saya akan fokus dengan family dan hal kerja saya ketepikan...”

Kajian oleh Adam & Jex (1999), membuktikan cara pengurusan masa yang berkesan mampu mengurangkan konflik kerja-keluarga dan menjadikan seseorang lebih efisien dan produktif.

Tema 2 : Sempadan kerja keluarga

Selain itu, menetapkan sempadan yang berbeza antara masa kerja dan keluarga membantu mengelakkan pertindihan, memastikan setiap peranan mendapat perhatian yang mencukupi tanpa menyebabkan keletihan.

Informan 3:

“...untuk kerja, masa dari 830am hingga 5pm saya memang commit ke kerja sahaja. Selepas jam 5pm, saya akan bersama anak-anak ”

Perbincangan tentang persempadanan antara kerja dan keluarga amat penting bagi memudahkan wanita bekerja menghadapi cabaran dalam menguruskan masa dan tenaga dalam kedua-dua tuntutan tersebut. Menurut penyelidikan oleh Clark et al (2021), pekerja yang dapat memisahkan tanggungjawab kerja dan keluarga, cenderung untuk lebih produktif dan mempunyai prestasi kerja yang lebih baik kerana mereka dapat memberi tumpuan sepenuhnya kepada tugas kerja apabila berada di tempat kerja dan memberi tumpuan kepada keluarga apabila di rumah. Kajian oleh Allen et al. (2021) juga menunjukkan bahawa persempadanan yang baik antara kerja dan keluarga dapat mengurangkan tekanan dan meningkatkan kesejahteraan mental.

Tema 3 : Sokongan keluarga

Sokongan keluarga memainkan peranan penting dalam mencapai keseimbangan kerja-kehidupan. Sokongan terdiri daripada suami, ibubapa dan ahli keluarga boleh mengurangkan tekanan berkaitan dengan menguruskan kedua-dua tugas profesional dan peribadi.

Sub-tema 3.1 : Sokongan suami

Tidak dapat dinafikan bahawa pasangan suami isteri yang berkongsi tanggungjawab rumah tangga membolehkan wanita bekerja menumpukan masa yang mencukupi untuk kerjaya mereka tanpa mengabaikan tanggungjawab keluarga. Sokongan keluarga, terutamanya sokongan daripada pasangan, memainkan peranan penting dalam membantu wanita bekerja menguruskan keseimbangan kerja-kehidupan dengan berkesan (Manandhar, 2017).

Informan 1:

“...sokongan daripada suami sangat membantu kalau saya tak dapat cuti, dia yang cuti. In case, anak sakit, suami dapat tolong untuk jaga anak...”

Informan 5:

“...jadi, sokongan suami sangat penting. Dalam rumah tangga saya, suami yang selalu ambil anak balik sekolah, tolong jaga anak. Jadi, Komunikasi sangat penting dalam rumah tangga...”

Kajian oleh Carlson et al. (2020) menunjukkan bahawa suami yang membantu isteri dalam kerja rumah dan penjagaan anak cenderung lebih bahagia. Kajian oleh Abdel-Monem et al. (2020) terhadap ibu bekerja di Mesir mendapati bahawa sokongan suami memberikan sokongan praktikal dan emosi secara tidak langsung mampu mengurangkan beban kerja dan meningkatkan kesejahteraan mental ibu bekerja. Oleh itu, komunikasi yang baik sangat penting antara pasangan untuk mencapai keseimbangan yang lebih baik.

Sub-tema 3.2 : Sokongan ibu-bapa

Berbeza pula dengan informan 6 yang mana beliau lebih memerlukan sokongan daripada ibu bapanya, terutamanya dalam penjagaan anak dan kerja rumah kerana ia boleh meringankan bebannya kerana suaminya bekerja di luar negara. King et al. (2019) menekankan bahawa peningkatan sokongan keluarga boleh membawa kepada kadar penyertaan wanita yang lebih tinggi dalam tenaga kerja, kerana ia membolehkan mereka mengurus peranan mereka dengan lebih berkesan.

Informan 6:

“...sokongan ibu bapa dapat kurangkan beban lah untuk jaga anak sebab suami saya jauh...”

Kajian oleh Ickes et al., (2021) menekankan bahawa sokongan daripada ibu bapa adalah penting untuk kesejahteraan wanita bekerja. Sokongan ini bukan sahaja membantu dalam penjagaan anak tetapi juga memberikan sokongan emosi yang mengurangkan tekanan dan meningkatkan kepuasan hidup wanita bekerja. Kajian Sattari et al., (2020) ini juga mendapati bahawa sokongan daripada ibu bapa adalah penting untuk keseimbangan kerja-kehidupan wanita bekerja. Ibu bapa yang memberikan bantuan praktikal dan emosi membantu wanita bekerja mengurangkan tekanan dan meningkatkan kesejahteraan mereka. Kajian oleh Maponya et al., (2021) menunjukkan bahawa sokongan daripada ibu bapa membantu ibu bekerja mengurangkan tekanan yang dihadapi mereka. Ibu bapa yang terlibat dalam penjagaan anak dan tugas rumah tangga membantu ibu bekerja mencapai keseimbangan kerja-kehidupan yang lebih baik.

Tema 4 : Polisi mesra keluarga

Polisi mesra keluarga merujuk kepada cuti bersalin dan cuti menyusukan anak.

Hasil dapatan temu bual bersama Informan 2 menyatakan bahawa tempoh cuti bersalin di organisasinya hanya satu bulan, dan tiada pekerja yang berani bersuara mengenai cabaran kekurangan cuti bersalin di tempat kerjanya. Hal ini secara tidak langsung menunjukkan bahawa tempoh cuti bersalin yang pendek dikaitkan dengan kesukaran dalam amalan penyusuan ibu dalam kalangan ibu bekerja.

Informan 2:

“...harap dapat beri cuti bersalin yang panjang dan cukuplah untuk kami sebagai ibu...”

Informan 6

“...in future, cadangan saya adalah wujudkan Breastfeeding Leave dan dibayar separuh gaji...”

Kajian telah menekankan bahawa cuti bersalin berbayar, polisi cuti yang fleksibel, dan waktu rehat penyusuan adalah intervensi yang berkesan dalam mengekalkan penglibatan wanita dalam dunia pekerjaan (Dun-Dery & Laar, 2016). Penyusuan susu ibu penting untuk kesihatan bayi dan ikatan ibu-anak, juga boleh dipengaruhi oleh cabaran yang dihadapi oleh wanita bekerja, seperti masa yang terhad, kemudahan yang tidak mencukupi, dan halangan di tempat kerja (Ravindranath et al., 2021). Keputusan untuk kembali bekerja lebih awal dan kekurangan sokongan untuk penyusuan susu ibu boleh memaksa wanita bekerja menggunakan susu formula, yang boleh menjejaskan kesihatan ibu dan anak. Buktinya, kajian oleh Miller dan Davis (2021) di sektor swasta, Amerika Syarikat mendapati bahawa kemudahan penyusuan di organisasi tersebut adalah kurang dan telah memaksa ibu untuk beralih kepada susu formula lebih awal daripada yang disarankan.

Kesejahteraan ibu bekerja dalam sektor swasta juga dipengaruhi oleh bagaimana cuti penyusuan susu ibu diuruskan. Penyelidikan oleh Al-Hassan & Al-Badawi (2024) menunjukkan bahawa sektor swasta di negara Timur Tengah yang melaksanakan polisi cuti penyusuan susu ibu secara efektif menunjukkan peningkatan dalam keseimbangan kerja-kehidupan dan kepuasan kerja. Dengan menyediakan sokongan yang diperlukan, majikan dapat membantu ibu bekerja menyesuaikan diri dengan lebih baik dan mengurangkan ketegangan yang berkaitan dengan penyusuan dan pekerjaan.

Tema 5 : Persekitaran kerja yang menyokong

Informan 1:

“...company saya sangat fleksibel. Ada pelepasan kalau anak sakit, ibu bapa yang minta cuti untuk jaga anak dapat dititikberatkan tanpa potong annual leave...”

Informan 3:

“...syarikat saya sangat menjaga kebajikan ibu bekerja seperti mereka akan bagi emergency leave jika anak sakit. Kelonggaran untuk ambil anak sekolah pun ada. Cuti bersalin juga sangat lama jadi masa rehat bersama anak-anak lebih lama...”

Komunikasi yang efektif dan hubungan kerja yang baik mampu menyokong pekerja dalam mencapai keseimbangan kerja-kehidupan. Kajian oleh Kinnunen et al. (2023) mendapati bahawa sokongan tempat kerja memainkan peranan penting dalam mengurangkan tekanan dan meningkatkan kesejahteraan psikologi wanita bekerja. Ketiadaan sokongan boleh mempengaruhi masalah kesihatan mental. Sebagai contoh, program sokongan keluarga dan anak seperti penjagaan kanak-kanak di tempat kerja atau subsidi untuk perkhidmatan penjagaan kanak-kanak dapat membantu wanita bekerja.

Kesimpulannya, dapatan daripada temu bual ini menunjukkan bahawa fleksibiliti dan sokongan majikan dalam menyediakan cuti kecemasan dan kelonggaran waktu bekerja adalah faktor kritikal dalam membantu pekerja, khususnya ibu bapa, menguruskan tanggungjawab keluarga dan kerja. Sokongan seperti ini membolehkan pekerja menangani situasi kecemasan tanpa menjejaskan kerjaya mereka. Selain itu, komunikasi yang baik dan kerjasama di tempat kerja juga memainkan peranan penting dalam mengurangkan tekanan dan membantu pekerja mencapai keseimbangan antara kerja dan kehidupan peribadi.

IMPLIKASI, CADANGAN DAN KESIMPULAN

Implikasi

Kajian ini menyumbang kepada Teori Peranan, yakni hasil dapatan telah menunjukkan kekangan masa, tekanan kerja dan keluarga telah menyumbang kepada berlakunya konflik untuk menyeimbangkan peranan kerja dan keluarga. Dalam aspek praktikal, kajian ini juga turut memberi peluang dan ruang khasnya di sektor swasta untuk meneliti semula polisi-polisi mesra keluarga yang sedia ada supaya ianya seiring dengan keperluan semasa dan memelihara hak dan kebajikan pekerja. Ianya juga diharapkan dapat membantu dalam merangka strategi yang lebih berkesan dan sokongan untuk membantu mereka mengatasi masalah tekanan di tempat kerja dan rumah. Selain itu, organisasi boleh menggunakan hasil kajian ini untuk meningkatkan persekitaran kerja yang lebih kondusif dan memperkenalkan inisiatif yang akan menyokong kesejahteraan wanita bekerjaya.

Cadangan

Dari aspek polisi, kajian ini mencadangkan agar pengubal dasar meneliti dasar mesra keluarga yang sedia ada khasnya cuti bersalin dan cuti menyusukan anak khasnya dalam sektor swasta agar adanya satu keseragaman atau sekurang-kurangnya tempoh minima yang perlu dipatuhi untuk melindungi hak dan kebajikan pekerja wanita. Cuti bersalin yang mencukupi memberikan masa kepada ibu bapa, khususnya ibu, untuk menjaga dan mengasuh anak mereka pada peringkat awal kehidupan. Di samping itu, pihak berkaitan juga dicadangkan untuk menyediakan ruang kemudahan untuk ibu menyusukan bayi dan kemudahan pusat penjagaan anak di tempat kerja yang secara tidak langsung menyumbangkan kepada persekitaran kerja yang menyokong dan mesra. Pengkaji akan datang dicadangkan untuk meneruskan kajian ini dengan melihat aspek lain, misalnya pengaruh teknologi dan manfaat bekerja dari rumah atau hibrid dalam mengimbangi peranan kerja dan keluarga yang mana hasil kajian mungkin agak berbeza.

Kesimpulan

Kajian telah mengenalpasti cabaran utama yang dihadapi oleh wanita bekerja serta langkah-langkah mengatasinya agar mencapai keseimbangan kerja dan keluarga. Melalui dapatan kajian ini ianya akan dapat membantu golongan wanita untuk lebih bersedia dalam menghadapi dunia pekerjaan yang semakin mencabar dan urusan keluarga. Pihak organisasi diharapkan dapat memberi sokongan berterusan khasnya mewujudkan dasar mesra keluarga yang lebih baik seiring dengan keperluan semasa. Justeru, sokongan organisasi dan keluarga yang berterusan akan memastikan wanita bekerjaya ini dapat menyeimbangkan peranan kerja dan keluarga dengan lebih berkesan.

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080-069

UNDERSTANDING AUTISM THROUGH A PUBLIC HEALTH LENS: A SCOPING REVIEW OF CURRENT RESEARCH

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ABSTRACT

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition that presents significant public health challenges. As the prevalence of autism continues to rise, there is an urgent need to examine its implications through a public health lens. This scoping review aims to explore the interplay between autism and public health, highlighting the current state of research and identifying key themes, gaps, and opportunities for future inquiry. A systematic search was conducted across multiple databases, including PubMed, Scopus, and Google Scholar, using a range of keywords related to autism and public health. Inclusion criteria encompassed peer-reviewed articles, reports, and policy documents published in English from 2000 to 2023. Data were extracted and synthesised to map existing literature and highlight significant findings. The review identified several critical areas. Firstly, it revealed barriers to healthcare access for individuals with autism, including stigma and inadequate training among healthcare professionals, which contribute to delays in diagnosis and treatment. Secondly, the variability in educational support was noted, with inconsistencies leading to disparities in outcomes for children with autism. Societal attitudes towards autism were also examined, revealing pervasive stigma that hinders social inclusion. Lastly, the review underscored the necessity for cohesive policy frameworks that integrate health, education, and social services to provide comprehensive support. The findings emphasise the need for an integrated public health approach to autism, encompassing early intervention strategies, community support, and ongoing research. By addressing the multifaceted challenges associated with autism, stakeholders can improve the quality of life for individuals with ASD and foster a more inclusive society. This scoping review serves as a foundational resource for policymakers, healthcare providers, and researchers, advocating for collaborative efforts to enhance understanding and support for autism within the public health domain.

Keywords: Autism Spectrum Disorder, Public Health, Healthcare Access, Educational Support, And Policy Frameworks.

082-072

IMPACT OF PERIMENOPAUSAL SYMPTOMS ON WORK AND QUALITY OF LIFE AMONG MALAYSIAN WORKING WOMEN: A NARRATIVE REVIEW USING PRISMA

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ABSTRACT

Perimenopause, the transitional phase preceding menopause typically occurring in women's mid-40s, involves hormonal fluctuations that manifest as physical, psychological, and cognitive symptoms. These changes can adversely affect quality of life, work performance, and gender equity, especially when combined with employment demands, family responsibilities, and societal expectations. This narrative review, guided by PRISMA 2020 reporting standards, synthesises Malaysian and international evidence on the multifaceted impact of perimenopausal symptoms on work performance and quality of life among working women. A systematic search of PubMed, Scopus, Web of Science, and Google Scholar was conducted for publications from 2005 to 2024. Search terms included "perimenopause," "menopausal symptoms," "working women," "work performance," "quality of life," and "Malaysia," combined with Boolean operators to optimise results. Inclusion criteria encompassed peer-reviewed articles, government reports, and international guidelines focusing on working women aged 40–55 years. Eligible studies were screened, assessed for methodological quality, and synthesised thematically. Findings reveal that Malaysian working women frequently experience fatigue, cognitive difficulties, musculoskeletal pain, and vasomotor symptoms. These symptoms contribute to decreased productivity, increased absenteeism and presenteeism, and negatively affect mental health and social well-being. Cultural stigma, limited awareness, and a lack of gender-sensitive workplace policies exacerbate under-recognition and under-treatment, reflected in low rates of medical consultation and hormone replacement therapy utilisation. Perimenopause represents a significant yet under-addressed occupational health and gender equity issue in Malaysia. Integrating menopause awareness into occupational safety and health policies, providing supportive workplace accommodations, and implementing culturally sensitive interventions are vital steps to enhance women's health, workforce participation, and empowerment.

Keywords: Perimenopause, Gender Empowerment, Working Women, Work Performance, Quality of Life.

INTRODUCTION

Perimenopause is the gradual transitional phase preceding menopause, generally occurring between the ages of 40 and 55. It is characterised by fluctuating ovarian hormone levels, notably declining estrogen, which may span several years before menstruation ceases. During this period, many women experience vasomotor symptoms (e.g., hot flashes, night sweats), psychological changes (e.g., mood swings, anxiety, depression), and cognitive difficulties (e.g., impaired

concentration, memory lapses) (Santoro et al., 2021). These symptoms can impair daily functioning and have direct consequences for occupational performance and overall well-being.

Globally, recognition of perimenopause as an important workplace and public health issue is increasing, particularly as populations age and more women remain in the workforce through midlife. In Malaysia, the average age of menopause is 50.7 years (Jahanfar et al., 2006), with women constituting 55.6% of the labour force (DOSM, 2023). Many hold senior roles requiring sustained cognitive engagement, leadership, and productivity functions potentially compromised when perimenopausal symptoms are unmanaged or poorly understood.

The intersection of perimenopausal changes with professional demands, career aspirations, and family responsibilities can heighten stress and role strain, impacting productivity, career progression, and workforce retention. Yet, menopause remains a neglected topic in Malaysian workplace discourse and policy, perpetuating stigma and leaving health needs unmet

This narrative review, conducted in accordance with PRISMA 2020 guidelines, synthesises Malaysian and international evidence on the prevalence and impact of perimenopausal symptoms among working women. It explores consequences for work performance and quality of life, examines cultural and policy barriers, and identifies priority areas for workplace and public health interventions

METHODOLOGI

This narrative review was undertaken following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency and replicability. The objective was to synthesise evidence on the prevalence, impact, and management of perimenopausal symptoms among working women, focusing on Malaysia and relevant international contexts.

Search Strategy

A comprehensive literature search was conducted across five electronic databases—PubMed, Scopus, Web of Science, ScienceDirect, and Google Scholar—covering publications from January 2005 to March 2024. Search terms combined Medical Subject Headings (MeSH) and free-text keywords such as “perimenopause,” “menopause,” “menopausal symptoms,” “working women,” “work performance,” “productivity,” “quality of life,” “Malaysia,” and “gender empowerment,” utilising Boolean operators (“AND,” “OR”) to optimise results. Full search strings are available upon request.

Eligibility Criteria

Inclusion criteria:

Publications in English from 2005 to 2025.

1. Studies including women aged 40–55 years in paid employment.
2. Focus on perimenopausal or menopausal symptoms affecting work performance and/or quality of life.
3. Data from related document from Malaysia, comparable Southeast Asian countries, or relevant international contexts.

Exclusion criteria:

1. Studies on postmenopausal-only populations.
2. Non-working populations.
3. Opinion pieces or editorials without primary data

Study Selection and Data Extraction

Two reviewers independently screened titles/abstracts and assessed full texts. Extracted data included location, design, sample, symptom prevalence, workplace impact, quality of life outcomes, and reported interventions.

Synthesis Approach

A thematic synthesis grouped findings into six themes: symptom prevalence, workplace impact, quality of life, treatment-seeking behaviour, gender and empowerment issues, and workplace policies

PRISMA Flow Diagram

The selection process is detailed in the PRISMA 2020 flow diagram, outlining records identified, screened, excluded, and included (Figure 1)

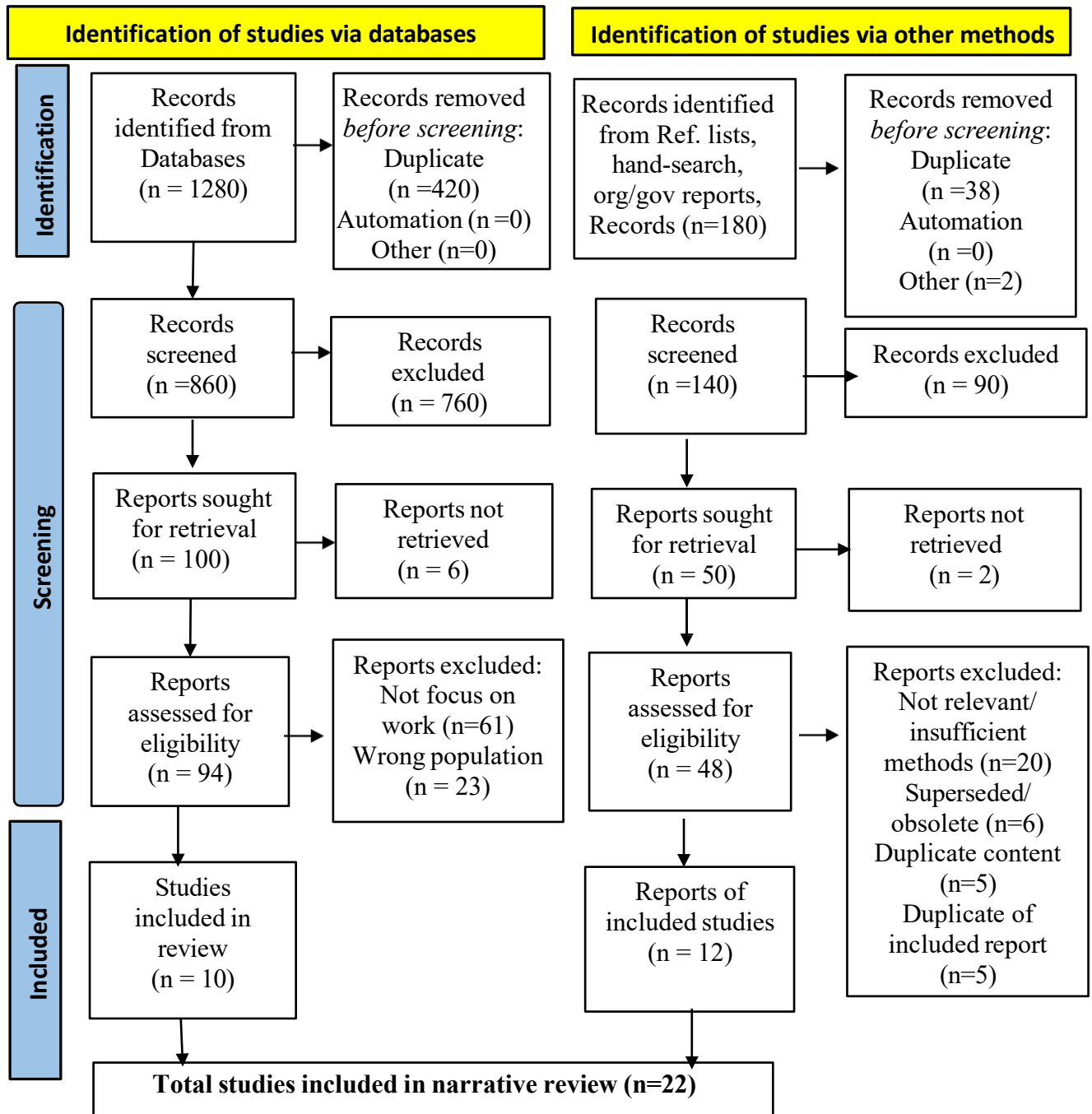
THEMATIC FINDINGS

Following the thematic synthesis of the included studies, six interconnected themes emerged: (1) common perimenopausal symptoms, (2) impact on work performance, (3) implications for quality of life, (4) treatment-seeking behaviours, (5) perimenopause as a gender and empowerment issue, and (6) workplace policies and interventions. A summary of the reviewed literature is presented in Table 1.

3.1 Common Perimenopausal Symptoms

Both Malaysian and international studies report frequent vasomotor symptoms, psychological disturbances, cognitive challenges, and physical complaints. In Kelantan, the most common symptoms were fatigue (79%), poor concentration (77.5%), and musculoskeletal pain (70.6%), while hot flashes affected 44.8% of women (Dhillon et al., 2006). Similarly, a Klang Valley study found that 52% of women experienced moderate to severe symptoms that disrupted their daily activities (Abdullah et al., 2017). International literature reinforces these findings, consistently identifying vasomotor, cognitive, and mood-related symptoms as central to perimenopausal experience (Avis et al., 2015; Hunter & Rendall, 2007).

Figure 1: PRISMA 2020 Flow Diagram summarizes the process of study selection.



A total of 22 studies were included in the review (10 identified from databases and 12 from other methods).

3.2 Impact on Work Performance

Symptoms such as fatigue, poor sleep, and cognitive decline have been shown to correlate with reduced productivity, concentration, and efficiency (Hardy et al., 2019; Sarrel, 2012). Malaysian data further highlight associations between menopausal symptoms and increased job stress (Kamarludin et al., 2024). International surveys suggest that approximately half of working

women report negative impacts on their work performance, with around 10% considering leaving employment due to menopause-related difficulties (Griffiths et al., 2013). Beyond symptoms, working conditions—such as job stress, workload, and lack of support—play a significant role in shaping outcomes (Hardy et al., 2019), underlining the importance of organizational as well as individual-level interventions.

3.3 Quality of Life Implications

Perimenopausal symptoms affect physical health, emotional stability, and social engagement, often leading to irritability, social withdrawal, and strained relationships. In Malaysia, where female life expectancy between 78.3 years (DOSM, 2023) to 79.4 years (World Bank, 2023), women may spend one-third of their lives post-menopause, emphasizing the importance of effective management. Poorly managed symptoms can significantly diminish quality of life (QoL), affecting not only personal wellbeing but also occupational and family functioning (Williams et al., 2009, Williams et al., 2022).

3.4 Treatment-Seeking Behaviour

Help-seeking among Malaysian women remains low. In one Klang Valley study, only 24.8% sought medical advice, and just 20.3% reported use of hormone replacement therapy (HRT), with uptake strongly influenced by education and income levels (Abdullah et al., 2017). The Malaysian Ministry of Health's 2022 Clinical Practice Guideline on menopause provides evidence-based management strategies, including lifestyle modification, non-hormonal therapies, and menopausal hormone therapy (MHT) where appropriate (MOH, 2022). However, cultural attitudes, stigma, and limited workplace health support contribute to underutilization of these options (Rahman et al., 2010).

3.5 Perimenopause as a Gender and Empowerment Issue

Perimenopause intersects with broader issues of gender equity, career progression, and leadership opportunities. A lack of workplace discourse perpetuates stigma and fosters “gendered ageism,” a compounded bias against older women that can undermine career trajectories (Atkinson et al., 2021). Organizational structures and decision-making processes can exacerbate inequalities, with sexism both hostile and benevolent shaping policies and practices (Stamarski & Son Hing, 2015). International evidence shows that gender-sensitive workplace support improves retention and productivity, positioning perimenopause not only as a health concern but also as an empowerment and equity issue (CIPD, 2023).

3.6 Workplace Policies and Interventions

In contrast to the UK and Australia, where menopause has been incorporated into occupational health strategies, equality frameworks, and wellbeing programmes (CIPD, 2023; ACAS, 2023), Malaysia currently lacks structured workplace policies addressing menopause. Effective interventions internationally include menopause awareness training for supervisors and HR staff, confidential workplace health consultations, flexible scheduling, remote work options, and inclusion of menopause considerations in Occupational Safety and Health (OSH) risk assessments (BSI, 2023; NHS Employers, 2023; HSE 2022). Within the Malaysian context, the Clinical Practice Guideline (2022) can serve as a foundation for workplace health strategies, but employer-level policies are still sparse, highlighting an urgent need for culturally appropriate workplace frameworks

DISCUSSION

This review confirms the high prevalence of perimenopausal symptoms among Malaysian working women particularly fatigue, concentration difficulties, musculoskeletal pain, and hot flashes which is consistent with global patterns (Avis et al., 2015; Gartoulla et al., 2016). However, Malaysia's unique cultural context, healthcare-seeking behaviours (Mohamad Ishak et al., 2021), and policy environment shape women's coping strategies and willingness to disclose their symptoms.

The negative impact of perimenopausal symptoms on occupational performance is significant. Cognitive difficulties, fatigue, and sleep disturbances reduce productivity, impair decision-making, and may result in reduced working hours, career stagnation, or premature exit from the workforce (Hardy et al., 2019; Griffiths et al., 2013). These outcomes carry economic consequences for individuals, employers, and the national economy.

Cultural stigma and workplace silence present major barriers to care. The fact that 80% of symptomatic Malaysian women do not seek professional help (Jahanfar et al., 2006) reveals a critical gap in health communication. Low HRT uptake, influenced by misconceptions and insufficient health education, parallels trends in Southeast Asia (Johnson et al., 2019).

From a gender equity perspective, the absence of menopause-inclusive policies exacerbates inequalities in career advancement and leadership representation. The concept of "gendered ageism" underscores this double bias against older women (Atkinson et al., 2021). International experience shows that targeted workplace interventions—such as awareness training, flexible work, and confidential health consultations—enhance retention, morale, and productivity (CIPD, 2023; Jack et al., 2016).

Table 1: Summary of Key Literature on Perimenopausal Symptoms, Work Performance, and Quality of Life Among Working Women

No	Author(s), Year	Study Location	Study Design	Sample Characteristics	Key Findings	Relevance to Review	Source of Identification
1	Abdullah et al., 2017	Klang Valley, Malaysia	Cross-sectional survey	356 women, 40–60 years	71% reported ≥ 1 symptom; vasomotor common; QoL negatively affected; low help-seeking.	Estimates national symptom burden and QoL impact; supports need for workplace support.	Databases
2	ACAS, 2023	UK	Policy/Guidance Document	N/A	Provides workplace risk-assessment considerations for supporting staff during menopause.	Highlights organizational responsibilities and practical measures.	Other methods
3	Atkinson et al., 2021	UK	Narrative review	N/A	Gaps in HRM practice; calls for organisational responsibility and guidance.	Frames policy/HR implications.	Other methods
4	Avis et al., 2015	USA	Longitudinal cohort study	1,449 women, 42–52, diverse ethnic groups, 17 yrs follow-up	Median duration of vasomotor symptoms = 7.4 years; longer if started earlier; African American women reported longer duration.	Highlights persistence and burden of symptoms; informs workplace support.	Databases
5	BSI, 2023	UK	Standards/Guideline	N/A	Published BS 30416 standard on menstruation, menstrual health, and menopause in the workplace.	Establishes benchmarks for inclusivity and support.	Other methods

No	Author(s), Year	Study Location	Study Design	Sample Characteristics	Key Findings	Relevance to Review	Source of Identification
6	CIPD, 2023	UK	Organizational report/guideline	Employee surveys, employer case studies, policy analysis	Menstruation-related symptoms affect work; stigma & absenteeism linked to lack of policies.	Supports gender-sensitive workplace policies.	Other methods
7	Department of Statistics Malaysia, 2023	Malaysia	National report	Labour force statistics	Female labour participation and sectoral distribution.	Situates scale of workplace impact in Malaysia.	Other methods
8	Dhillon et al., 2006	Kelantan, Malaysia	Cross-sectional	356 women, 40–65 years	High fatigue & musculoskeletal pain; hot flushes less prevalent than Western data.	Shows cultural/regional symptom differences.	Databases
9	Griffiths et al., 2013	UK	Electronic survey	896 employees	Lack of workplace support; symptoms affect performance; many conceal symptoms.	Identifies barriers & need for supportive culture.	Databases
10	Hardy et al., 2019	UK	Intervention study	114-line managers	Online training improved knowledge & attitudes.	Demonstrates feasibility of workplace training.	Databases
11	HSE, 2023	UK	Guidance report	N/A	Focuses on thermal comfort & workplace adjustments.	Relevant to occupational health.	Other methods

No	Author(s), Year	Study Location	Study Design	Sample Characteristics	Key Findings	Relevance to Review	Source of Identification
12	Hunter & Rendall, 2007	International	Narrative review	N/A	Discusses bio-psycho-socio-cultural perspectives on menopause.	Frames menopause beyond medical model.	Other methods
13	Kamarludin et al., 2024	Private hospital, Malaysia	Quasi-experimental	Registered nurses with menopausal symptoms	Stress management program reduced job stress & symptoms.	Shows workplace interventions are effective.	Databases
14	Ministry of Health Malaysia, 2022	Malaysia	Clinical Practice Guideline	N/A	Provides national guidance for menopause management.	Ensures evidence-based support in Malaysia.	Other methods
15	NHS Employers, 2023	UK	Guidance/ Toolkit	N/A	Toolkits for risk assessments related to menopause at work.	Practical resources for employers.	Other methods
16	Rahman et al., 2010	Sarawak, Malaysia	Cross-sectional study	Middle-aged women, Kuching	Modified Menopause Rating Scale; identified prevalence/severity of symptoms.	Provides local evidence on symptom patterns.	Databases
17	Sarrel, 2012	USA	Commentary	N/A	Menopause can reduce productivity & job satisfaction.	Highlights economic/performance implications.	Other methods
18	Stamarski & Son Hing, 2015	International	Narrative literature review	Various studies, theoretical models	Workplace structures & sexism reinforce gender inequality.	Explains organizational context of women's experiences.	Other methods

No	Author(s), Year	Study Location	Study Design	Sample Characteristics	Key Findings	Relevance to Review	Source of Identification
19	Whiteley et al., 2013	USA	Cross-sectional survey	Women experiencing menopause (general working women)	Symptoms negatively affect QoL, productivity, economic outcomes.	Shows productivity implications.	Databases
20	World Bank, 2023	Malaysia	Secondary data (indicator)	Female population (Malaysia)	Life expectancy at birth (female).	Provides demographic context.	Other methods
21	Williams et al., 2009	USA	Population-based survey	US women, midlife stage	Menopause-specific questionnaire; negative impacts on QoL.	Shows wide-ranging impacts on wellbeing.	Databases
22	Williams et al., 2022	USA (African American focus)	Narrative review	African American women	Summarized unique menopause experiences; disparities in care.	Adds cultural/ethnic dimension.	Databases

RESEARCH GAPS

Critical gaps include:

1. Limited workplace-specific data on economic and productivity impacts (absenteeism, presenteeism, turnover).
2. Lack of longitudinal studies to track symptom trajectories and career effects over time.

3. Underrepresentation of diverse sectors, with few studies outside healthcare and professional roles.
4. Minimal evaluation of culturally tailored interventions for Malaysian workplaces.
5. Insufficient psychosocial and cultural analyses on how beliefs, family, and religion shape symptom management and help-seeking.

CONCLUSION

Perimenopause is a significant yet under-recognised challenge for Malaysian working women, affecting physical health, emotional well-being, and career development. High symptom prevalence, compounded by cultural stigma, low awareness, and inadequate workplace support, impedes effective management.

Reframing perimenopause as a public health and gender equity priority is essential to advance Sustainable Development Goal 5 and strengthen women's workforce participation. Evidence from other countries supports workplace policies such as manager training, flexible scheduling, and confidential occupational health services to reduce productivity losses and improve retention.

- I. Future research should focus on economic analyses, longitudinal impact assessments, and culturally appropriate interventions. Enhancing health literacy, fostering supportive workplace cultures, and embedding menopause considerations in occupational health policy will empower midlife women to remain healthy, productive contributors to Malaysia's socio-economic progress. To achieve this, policy recommendations include:
- II. Incorporating menopause into occupational health frameworks to ensure that policies and workplace health strategies formally recognise and address its impact on employees' well-being and productivity.
- III. Providing flexible work arrangements, such as flexible hours, remote work, or adjusted workloads, to help women manage fluctuating symptoms while maintaining career continuity.
- IV. Offering targeted health education and counselling, including awareness programs, access to counselling, and confidential occupational health services, to reduce stigma and encourage early management of symptoms.
- V. Training managers to address menopause sensitively, equipping them with knowledge and communication skills that foster empathy, reduce workplace stigma, and ensure supportive practices.

By embedding these strategies into national and organisational policy, Malaysia can not only safeguard women's health and careers but also strengthen workforce sustainability, enhance gender equity, and accelerate progress towards achieving the Sustainable Development Goals.

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084-074

SOUTH INDIA TAMIL MOVIES: AN OVERVIEW OF THE IMAGE OF WOMEN AND YOUNG CHILDREN

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ABSTRACT

Since the 1930s Tamil-Language movies from South India have been the most preferred movies watched by the Malaysian Indian community from young children to the elderly. These movies are also watched by other Malaysian communities who do not understand the Tamil language but follow by using sub-titles. The first Tamil-language movie was released in 1931 in Malaysia and its aim was for entertainment purposes. Later, the movies expanded their aim to include education, to show reality and showcase Tamil culture and traditions mainly focusing on giving reflection about Tamil Indian life in India. Movies also play important roles to educate by nurturing people to think and act out what was watched. This shows that the selection of movies to watch is important because it will influence people's thinking and behavior especially that of women and young children who are more likely to naturally imitate what they see. Every year approximately 200 south India movies will be released in Malaysia. As for January to August 2025, 178 movies have already been released for viewing by Malaysians; and 90% of these movies were showing women and young children born to be victims of sexual abuse, powerless and educated to seek revenge after the incident happened to them. This was instead of educating the women and young children to take steps to prevent the situation or use empowerment. By watching these movies, it could slowly lead the way for Malaysian women and young children's thinking to move from empowerment to disempowerment. In this research, the content analysis approach will be used to show the percentage of movies that have been released in Malaysia since 2020 with the aim to show women and young children born to be victims of sexual abuse and powerless. This research will show the importance of the selection of movies to release in Malaysia so that it will not give the powerless messages to women and young children.

Keywords: Women, Young Children, Tamil Movies.

INTRODUCTION

Movies also known as motion pictures or moving image shows usually with a sound track that includes dialogue, music and sound effects where it will project illusion for simulating experiences for viewers. It was a big move from the silent movies in 1930 (Keith, T., 2025). Movies can be created through live action recording using actors or using graphics (Computer Generated Images) and can also be produced by combining both live actions with graphics. Movies are also known as

films and include live documentary that are used to recreate the scenario or real life stories mainly for the purpose of entertainment. Movies also assist in providing ideas, to educate people, or convey message that contains emotions and perceptions for viewers of incidents that have happened, predictions or imagination. In this way movies recently play important roles in showing stories by reporting what has happened and predicting what might happen. Movies in this century are also providing information about normative masculinity and femininity information by showing the movies story with the most powerful characters as male (Keith, T., 2025). Movies play an important role to educate viewers informally. Therefore, the selection of movies to be watched is important. In the early days of movies, they were meant for viewers' entertainment. Later, the movies deeply impacted the viewers' life by influencing their thinking by telling them informally what is happening to people and the world around them. In the beginning Movies could only be watched using television or at the cinema. However, in this century movies can be watched using many different platforms such as using video recordings, CD-roms and devices such as hand phones and tablets to watch online movies (Ponech, T., 2021). Movies have many genres such as action, sensitive issues, romantic, religious, comedy, family drama, horror, fiction etc (Grant, B. K., 2023). Wedding, D., (2023) said movies also play a strong role in shaping human thinking and behaviour. It usually uses inspiration to facilitate a change in a person, showing the meaning of life events, to try to influence the viewer to practice what has been watched. This had been happening since the time of silent movies. It was recommended to carefully choose the elements of the story so that the movie will benefit viewers. Tapson, K. and Anderson, S. (2022) expressed the view that movies can nurture thinking skills and impact the way one looks at the world and themselves. It is important to choose the right movies to watch where it can nurture thinking logically and practically.

TAMIL MOVIES, WOMEN AND YOUNG CHILDREN

Tamil Movies from South India are mostly hero-centric where the male and masculine roles are more important than the female and femininity roles. The female-femininity role in Tamil Movies is mainly to show sexism. To get viewers support for these movies they include as necessary scenes those showing rape, inappropriate touch, violence towards women and young children. The movies from south India represent Indian, especially Tamil, culture in India, where usually the male has the more important role in the family and all family members must listen and obey their instructions (Velayutham, S. & Devadas, V., 2020). It simply means that the male role is more powerful than the female role in the family. The male-masculine role in Tamil movies is seen as the main person to save and protect women, children and the elderly from danger and this is matched with the Indian-Tamil culture from the India. Velayutham, S. and Devadas, V., (2020) expressed that women acting the female role in Tamil movies are not given much choice to play a hero role because the culture will not accept it and there will be little or no business later to sell the movies. The movies only can be sold when the male role can be the one to save the situation. The movies listed in Table 3 shows the Tamil Movies released based on the Indian-Tamil culture. Tamil Movies in this Twenty-First Century are based on Caste, Gender and Technology themes based on the viewers vote in India. However, Malaysian are practising equality where both male and female will be treated in the same way (Abdullah, R., & Hassan, M. S., 2022). Malaysian society is against caste and violence towards women, the elderly and children. Therefore, the Tamil

Movies released in Malaysia based on these themes show a high volume of movies that can influence Malaysian thinking about women, the elderly and children.

Women in Malaysia have equal rights under Article 8(2) of the Federal Constitution, objecting to all gender discrimination. The Ministry of Women, Family, and Community Development (MWFCD) was established in 2001, to ensure all women in Malaysia are to be treated equally with economics, education, politics, and health status. Malaysian Policy also supports women's empowerment, this means no discrimination (Abdullah, R., & Hassan, M. S., 2022). Women and children in Malaysia are protected by the law under the Child Act 2001 (Act 611), which came into force in August 2002. This Act was implemented to ensure all children in Malaysia get care, protection, and rehabilitation if necessary (Zakaria, E., et al, 2022). This Act adapted from the United Nations Convention on the Rights of the Child (CRC), to ensure that children get supported to their best interests, respect as an individual child, and the right to life and to own self-development. This act is against child discrimination and abuse. Malaysia protects women and children's rights, however the Tamil movies from South India mostly go against women empowerment and show child discrimination. Approximately 200 Tamil movies from south India will be released in Malaysia on a yearly basis and these are based mainly on gender discrimination. However, due to the covid-19 pandemic in Year 2020, the number of movies released in Malaysia was below 200 due the worldwide lock down. However, this kick started back after the end of year 2020, and now the movies released are back to the normal of above 200 movies per year after the break due to the lock down worldwide. Table 2 is showing the movies released for Year 2020 to August 2025.

Since 1996, Legal Malaysia Movies has a classification system as shown in Table 1 for viewer advice in the cinema and on broadcasting channels to play movies, this includes Tamil Movies from South India. This classification will be shown at the beginning of the movies as a reminder. There is no clear significant evidence to show that people in Malaysia are following this classification strictly or understand the classifications to select the movie to watch and neither is there any monitoring or action taken for people who are not following the classification as advised by LPF (Wood, S., Guan, S. T., & Ayavoo, M. R., 2022). Besides this, there is no control of online movie viewing. The evidences are that many people in Malaysia have been exposed to various movies without control, this includes women and young children.

Classification	Meaning
U	Suitable to be watched by all categories of age
P13*	Requires Parental Guidance and the movie has no passionate kissing scenes
18SG*	Suitable to be watched by age 18 and above, the movie contains graphic violence and or horror or terror

18SX*	Suitable to be watched by age 18 and above, the movies contain sex scenes, nudity or sexual dialogue/references
18PA*	Suitable to be watched by age 18 and above, the movies contains strong religious or political elements
18PL*	Suitable to be watched by age 18 and above, the movie contains various violence, horror/terror, sex scenes, nudity, sexual dialogues/references, religious, social or political aspects

Table 1: Movies Classifications in Malaysia

***Indicates movies that are not suitable to be watched by young children because they contain sexual and powerless scenes which need guidance from an adult. However, these movies are released and able to be accessed by young children from various media platforms and not just main cinema and television stations. These movies can be watched by all women on any media platforms**

RESEARCH OBJECTIVE

To investigate an overview of the image of women and young children in Tamil movies from south India

RESEARCH QUESTION

How do Tamil movies from south India label women and young children in the movies?

METHODOLOGY

Content analysis which is under qualitative research methodology was used in this research to analyse textual, visual, and audio about Tamil movies in order to identify the category of the movies. This method was used to aid the researcher to analyse data from the large number of movies to be watched. It is matched with the qualitative focus which aids in the understanding and interpretation of the category rather than just counting frequencies. The content analysis in this research is for making replicable and valid inferences from data gathered and to group them according to the category (Mayring, P., 2021). This can be found in the findings.

FINDINGS

Tamil Movies from South India are approved by the Film Censorship Board of Malaysia (LPF) which is parked under the Ministry of Home Affairs. LPF acts to approve the movies to be played in Malaysia after a review of the suitability for Malaysian cultural, religious and moral values (Sahimi, A. W. B., 2022). Most importantly it determines whether a movie is suitable to be viewed by the public. LPF also is responsible to cut or ban if the movies or any scenes are violating religious, cultural or moral values such as sexuality or violence, before it can be played on TV screens and in cinemas. Shukri, F. M., etl (2024) argued that this may not have been carefully examined by LPF with the changes in the role of technology, where the public are watching movies through online streaming platforms and these platforms are not bound by LPF regulations. This may lead people to watch inappropriate content in movies and scenes in Malaysia. Table 2 show the estimated numbers of Tamil movies from South India that were released in Malaysia from 2020 to August 2025 using cinemas and television platforms only that have been approved by LPF. The data does not include the movies that were released using other platforms and may have no LPF approval. There is no single official website in Malaysia to show the exact number of Tamil movies that have been released for public viewing for the past 5 years.

Year	Number of Movies
2020	100
2021	220
2022	221
2023	258
2024	241
2025 (as of August)	160

Table 2: Tamil Movies released in Malaysia using various platforms

Movies categories are based on synopsis and the flow of the story (Devarasetty, S., et, 2022). In this research, all movies listed in Table 2 will be categorised into three categories. The first category will be sensitive issues content movies which show scenes against women and young children empowerment and it will be described and show how women and young children are born to be powerless and surrender themselves to the situation of kidnapping this includes women and child trafficking, rape, the marriage of minors, rape-murder, women and young children in domestic murder and domestic violence and not showing anyway to prevent these incidents or ways to deal with the situation but only to seek revenge after the incident has occurred. The second category will be uncommitted relationships where it will be described and show couples staying together, sex before marriage, child consensual sex and affairs that are happening nowadays with no proper guidance or clear messages for viewers to say that this is wrong, this could lead women and young children to become victims of sexual activity and powerless to handle the situations. The third category of movies are parked in the others movies category. Other movies that are not related to first and second categories will be the group in this category. Table 3 is showing the category and number of movies that was released from year 2020 to August 2025.

Category	Number of movies per year	
Sensitive issues content movies	2020	41
	2021	75
	2022	73
	2023	77
	2024	132

	2025 (August)	70
Uncommitted relationship movies	2020	30
	2021	50
	2022	62
	2023	64
	2024	44
	2025 (August)	28
Others movies	2020	29
	2021	95
	2022	86
	2023	117
	2024	65
	2025 (August)	62

Table 3: Tamil Movies category

DISCUSSIONS

Sensitive issues content and uncommitted relationship Tamil movies from South Indian show a high number of movies in Table 3 that were released in Malaysia. The evidence is that these movies were not relevant to Malaysian culture and goes against Malaysian practice, where women and children are treated fairly. This distribution started with 71 movies in the year 2020 to 176 movies in 2024. These movies are related to women and children as powerless participants in these movies. And as of August 2025, 98 movies were released related to the same issues. In total, there were 468 movies released under sensitive issues content and 278 movies related to uncommitted relationships. This indicates that 62% of the Tamil movies that were released from 2020 to August 2025 are not suitable to be watched by young children because they were labeled 13 and above as per Malaysian movies classification as indicated in Table 1. Sensitive issues and uncommitted relationships movies as listed on Table 3 fall under the movies classification P13 and P18 and above as listed in Table 1. It shows almost all the movies are not suitable to be watched by children under the age 18 years. These movies are also sensitive to be watched by women especially because it portrays women as powerless in the movies. Other categories of movies in total have released 454 movies from the year 2020 to August 2025. Most of these movies focus towards male hero centric movies, where it shows the female, children and elderly must depend on the male. Table 4 shows examples of movies that were released based on this category per year

Category	Movies name	
Sensitive issues content movies	2020	Ponmagal Vandhal, Velvet Nagaram, Karuthukalai Pathivu Sei, Kavalthurai Ungal Nanban, Penguin, Psycho
	2021	Jai Bhim, IPC376, Chithirai Sevvaanam, Maadathy, Netrikann
	2022	Sembi, Gargi, Saani Kaayidham, Natchathiram Nagargiradhu, Thunikaram
	2023	Chithha, V3, Bommai Nayagi, Raangi
	2024	White Rose, Pitha, Haraa, Danny, Kaaduvetty, Maharaja, Vettaian, Raayan
	2025 (August)	Vanangaan, Xtreme, Gentlewoman, Fire

Uncommitted relationship movies	2020	Oh My Kadavule, Kanni Raasi, Putham Pudhu Kaalai, Kannum Kannum Kollaiyadithaal
	2021	Naanum Single Thaan, Kutty Story, Bachelor
	2022	Natchathiram Nagargiradhu, Love Today, Kaathuvaakula Rendu Kaadhal, Manmadha Leelai, Doodi
	2023	Dada, Let's Get Married, Theera Kaadhal, Margazhi Thingal
	2024	Lover, Ippadiku Kadhal, Pon Ondru Kanden, Emakku Thozhil Romance
	2025 (August)	Konjam Kadhal Konjam Modahal, Kadhalikka Neramillai, En Kadhale, Love Marriage, 2K Love Story
Others movies (focus on male-hero centric role)	2020	Pattas, Soorarai Pottru, Ka Pae Ranasingam, Oh My Kadavule, Iraivi
	2021	Karnan, Sarpatta Parambarai, Jai Bhim, Maanaadu, Thaen
	2022	Thiruchitrambalam, Don, Selfie, Kaari
	2023	Viduthalai, Jigarthanda, Maamannan, Por Thozhil
	2024	Raayan, Meiyazhagan, Amaran, Lubber Pandhu
	2025 (August)	Good Bad Ugly, Thug Life, Retro, Vidaamuyarchi

Table 4: Tamil Movies examples follow the category

CONCLUSIONS

Karupiah, P., Pathmanathan, S., & Nikku, B. R. (2022) previously conducted a research related to Malaysian Indian viewers' opinion and how they perceived the sexual violence in Tamil movies produced by an India director. Their findings show that many participants feel uncomfortable with the scenes from Tamil movies about sexual violence because it showed the women and young children were treated badly and unequally going against Malaysian practices. Most of the movies from South India are showing how the women and young children must follow the traditional Indian myth of silently keeping their wrong doing way of life. This indicates not all these movies are suitable to be watched by Malaysians because they focus on showing what is happening in India when Malaysia is practicing equal standards for all human beings. It is important for the respective departments such as LPF to play an important role to check the content of movies before releasing them for Malaysians to view. Parents and guardians of children also need to play an important role to monitor the movies watched by their children.

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093-078

KESAN MODUL H.E.A.T BERASASKAN TERAPI RASIONAL EMOTIF TINGKAH LAKU (REBT) TERHADAP EFIKASI KENDIRI MANGSA BULI DI SEKOLAH MENENGAH

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ABSTRAK

Buli memberi kesan negatif yang mendalam terhadap kesejahteraan emosi, psikologi, dan sosial mangsa. Mangsa buli perlu diberikan intervensi yang khusus dan berkesan bagi membantu mereka membina semula keyakinan dan efikasi sendiri. Kajian ini bertujuan untuk menguji keberkesanan Modul H.E.A.T yang dibangunkan berasaskan Terapi Rasional Emotif Tingkah Laku (REBT) terhadap tahap efikasi sendiri dalam kalangan pelajar sekolah menengah yang menjadi mangsa buli. Pembangunan modul ini adalah berdasarkan analisis keperluan yang telah dijalankan dengan nilai *threshold* keseluruhan sebanyak 0.142 dan persetujuan pakar sebanyak 100%. Kajian ini menggunakan reka bentuk kuasi eksperimen melibatkan 80 orang responden yang dibahagikan kepada dua kumpulan: kumpulan eksperimen ($n = 40$) dan kumpulan kawalan ($n = 40$). Hasil ujian pra menunjukkan tahap efikasi sendiri kumpulan eksperimen berada pada tahap rendah, manakala selepas intervensi, tahap efikasi sendiri meningkat ke tahap tinggi. Bagi kumpulan kawalan, tahap efikasi sendiri kekal rendah sebelum dan selepas kajian. Analisis MANOVA telah dijalankan bagi menguji perbezaan subskala efikasi sendiri antara kumpulan eksperimen dan kumpulan kawalan pada ujian pasca. Keputusan menunjukkan terdapat perbezaan yang signifikan secara keseluruhan berdasarkan nilai *Wilks' Lambda*, $(\lambda) = .005$, $F(1, 78) = 3927.45$, $p < .001$, yang menunjukkan bahawa intervensi modul H.E.A.T memberikan kesan yang signifikan terhadap semua subskala efikasi sendiri. Implikasi kajian menunjukkan bahawa Modul H.E.A.T berpotensi menjadi satu pendekatan intervensi yang efektif dalam membina efikasi sendiri mangsa buli. Oleh itu, modul ini boleh digunakan oleh guru bimbingan dan kaunseling sebagai satu alat intervensi sistematik dalam program pembangunan sahsiah dan kesejahteraan emosi murid.

Kata Kunci: Modul H.E.A.T, Terapi Rasional Emotif Tingkah Laku, Efikasi Kendiri, Mangsa Buli.

PENGENALAN

Isu buli di Malaysia telah lama berlaku di negara ini (Mohamed Afiq Amani & Rani Ann, 2020). Buli adalah merupakan perlakuan yang dilakukan secara sengaja untuk mencederakan seseorang dengan melibatkan tingkah laku yang kejam dan menakutkan (Rettew & Powlowski, 2022). Malah perbuatan buli merupakan satu niat jahat yang bertujuan untuk mengganggu secara berulang seperti mengusik, memberi ancaman fizikal secara bahaya, menyebarkan khabar angin, memulaukan secara sengaja, serangan secara fizikal dan lisan (Vikneswaran et al., 2021). Serangan lisan seperti kata-kata tidak senonoh dan lucu, penyebaran berita yang tidak tepat dan penyamaran di platform siber juga merupakan perlakuan buli yang memberi kesan negatif kepada mangsa buli (Mapatan, Mohd Noor & Nor Sayyidatina 2022; Singh & Mahapatra, 2024).

Mangsa buli mengalami kesan kemerosotan emosi seperti tekanan, kebimbangan dan kemurungan (Wan Shahrazad, Nur Syahirah & Mohammad Rahim, 2019), mempunyai pemikiran negatif dan tertekan (Mohd Hilmi & Zuraida, 2016), menjadi sedih, marah dan lemah daya tumpuan serta menghadapi depresi (Safiek, 2019). Malah, situasi buli siber juga memberikan kesan traumatik terhadap emosi, fizikal dan perubahan sikap mangsa buli (Samantha, Abdul Razaq & Mohd Mahzan, 2018).

Meskipun kes kematian akibat buli dalam kalangan pelajar dan remaja menunjukkan relatif yang kecil dari segi statistik, namun implikasinya amat serius kerana setiap nyawa yang terkorban mencerminkan kegagalan sistem untuk melindungi mangsa. Keadaan ini ditegaskan oleh Liu et al. (2025) bahawa bentuk buli yang berterusan, khususnya yang berbentuk fizikal dan psikologi, boleh menyumbang kepada kesan kesihatan mental yang kronik dan kematian langsung. Oleh hal yang demikian, Siti Fadlina et al (2021) menegaskan mangsa buli perlu dibantu supaya mereka dapat mencapai kesejahteraan dan kestabilan psikologi seterusnya dapat menghapuskan bebanan yang ditanggung.

PENYATAAN MASALAH

Menurut Jamal Safri Saibon (2014), Dan Olweus telah menjalankan kajian mengenai perlakuan buli sejak tahun 1970-an bagi meningkatkan kesedaran masyarakat terhadap pencegahan buli. Namun, kejadian buli masih berterusan hingga kini (Moreno & Jurado, 2024; Washington-Nortey et al., 2025). Antara punca utama yang dikenal pasti ialah faktor keluarga, rakan sebaya, sekolah dan komuniti.

Kelemahan institusi kekeluargaan dalam memberikan didikan moral, perhatian emosi dan disiplin yang seimbang menyebabkan anak-anak meniru tingkah laku agresif serta menormalisasi keganasan (Faridah & Zurina, 2015; Grama et al., 2024). Konflik keluarga, gaya asuhan permisif dan komunikasi yang lemah turut meningkatkan risiko penglibatan dalam buli (Emilda et al., 2025; Zheng et al., 2025).

Selain itu, pengaruh rakan sebaya menjadikan buli sebagai norma sosial untuk diterima dalam kumpulan (Amran et al., 2023; Ugwu, 2024), manakala kelemahan peranan guru, sikap pasif sekolah dan sistem aduan yang tidak efektif membenarkan kes buli terus berlaku (Paljakka, 2024; Hästbacka, 2025). Di peringkat komuniti, persekitaran berisiko, tekanan sosioekonomi dan

penguatkuasaan undang-undang yang lemah turut mengekalkan budaya buli (Lee, Hong & Resko, 2022; Hera, Achmad & Ariani, 2025).

Walaupun pelbagai intervensi telah dijalankan sejak kajian Olweus pada tahun 1970-an, isu buli masih berleluasa akibat kelemahan institusi kekeluargaan, pengaruh rakan sebaya, sikap guru, serta norma sosial sekolah dan komuniti. Faktor-faktor ini memberi kesan kepada kesejahteraan psikologi pelajar dan keupayaan mereka mengawal emosi serta tingkah laku. Justeru, **efikasi kendiri** dipilih kerana ia memberi penekanan terhadap kemampuan diri untuk menghadapi tekanan, menolak pengaruh negatif, dan bertindak secara rasional dalam situasi sosial yang mencabar. Tahap efikasi kendiri yang tinggi membantu mangsa buli mengatasi ketakutan, berdaya tahan dan membina kawalan diri yang positif terhadap situasi buli. Modul H.E.A.T yang dibangunkan dalam kajian ini adalah sebagai pelengkap kepada intervensi sedia ada dengan memberi tumpuan khusus kepada pemulihan psikologi dalaman mangsa buli melalui pengukuhan efikasi kendiri.

OBJEKTIF KAJIAN

Objektif kajian ini adalah untuk mengukur kesan modul H.E.A.T terhadap efikasi kendiri mangsa buli.

METODOLOGI KAJIAN

Reka bentuk

Pendekatan kajian ini adalah kuantitatif dan reka bentuk kajian ini pula adalah eksperimen yang melibatkan dua kumpulan iaitu kumpulan eksperimen dan kumpulan kawalan.

Sampel

Seramai 80 orang pelajar mangsa buli telah dikenalpasti berdasarkan skor min rendah dalam konstruk efikasi kendiri. Pemilihan ini menggunakan persampelan rawak berpasangan kerana mangsa buli mempunyai ciri-ciri homogeniti yang sama dan pembahagian kumpulan kajian (eksperimen dan kawalan) lebih seimbang dan adil. Subjek ini dipasangkan berdasarkan satu atau lebih ciri yang relevan seperti umur yang hampir sama iaitu 13 dan 14 tahun, sejarah atau peristiwa dibuli dan memperoleh skor min yang rendah dalam ujian pra.

Instrumen

The Peer Aggression Coping Self-Efficacy Scale (PACSES) yang dibina oleh Singh dan Bussey (2009). Set soalan soal selidik ini telah diadaptasi ke Bahasa Melayu oleh Amin Al-Hadi (2016) bagi tujuan pengukuran tersebut. PACSES bertujuan untuk mengukur 'coping' efikasi dalam kalangan remaja yang berumur antara 11 hingga 15 tahun. *The Peer Aggression Coping Self-Efficacy Scale (PACSES)* yang dibina oleh Singh dan Bussey dan telah diuji mengikut empat domain utama didalamnya iaitu:

- i. Efikasi kendiri terhadap tingkah laku provokatif
- ii. Efikasi kendiri untuk mengelak dari tingkah laku agresif

- iii. Efikasi sendiri untuk mengelakkan rasa bersalah terhadap diri sendiri
- iv. Efikasi sendiri kepada mangsa yang menidakkan perasaan mereka

Menurut Singh dan Bussey, '*Coping Self-Efficacy*', PACSES memberikan ukuran yang berguna untuk mengenalpasti keberkesanan diri anak-anak untuk menggunakan pelbagai strategi untuk menangani rakan sebaya yang agresif, persepsi seseorang terhadap keupayaannya untuk menggerakkan motivasinya, sumber kognitif dirinya, dan tindakan yang diperlukan untuk melaksanakan kawalan terhadap kejadian yang negatif.

DAPATAN KAJIAN

Pengujian MANOVA dijalankan untuk mencari perbezaan subskala pemboleh ubah efikasi sendiri antara kumpulan eksperimen dan kumpulan kawalan. Hasil analisis pengujian MANOVA dijelaskan dalam jadual 1. Berdasarkan jadual, Wilks' Lambda digunakan untuk melihat perbezaan keseluruhan bagi subskala yang dibandingkan (Pallant, 2016). Hasil analisis MANOVA menunjukkan nilai Wilks' Lambda (λ) = .005, $F(1,78) = 3927.450$, Sig. = .000 ($P < 0.05$). Dapatan ini merumuskan bahawa secara keseluruhannya menunjukkan terdapat perbezaan yang signifikan pemboleh ubah efikasi sendiri antara kumpulan eksperimen dan kumpulan kawalan pada ujian pasca.

Jadual 1 MANOVA – Pengujian multivariate efikasi sendiri antara kumpulan eksperimen dan kumpulan kawalan

		Nilai	F	dk	p	Eta Kuasa Dua
Kumpulan Ujian (Eksperimen dan Kawalan)	Wilks' Lambda	.005	3927.450 ^b	4.000	.000	.995

Hasil analisis MANOVA kumpulan eksperimen dan kumpulan kawalan ujian pasca menunjukkan subskala pemboleh ubah efikasi sendiri iaitu efikasi sendiri terhadap tingkah laku provokatif ialah $F(1,78) = 7286.773$, $p = .000$ ($p < .05$), efikasi sendiri untuk mengelakkan tingkah laku agresif pula $F(1,78) = 10436.423$, $p = .000$ ($p < .05$), efikasi sendiri untuk mengelakkan rasa bersalah terhadap diri sendiri ialah $F(1,78) = 4740.629$, $p = .000$ ($p < .05$) dan efikasi sendiri kepada mangsa yang menidakkan perasaan mereka $F(1,78) = 7104.853$, $p = .000$ ($p < .05$). Dapatan kajian ini menjelaskan bahawa efikasi sendiri memberi kesan kepada perubahan mangsa buli kepada tahap yang lebih baik.

Jadual 2 MANOVA-Pengujian antara kesan efikasi sendiri kepada kumpulan eksperimen dan kumpulan eksperimen dalam ujian pasca

JKD	dk	MKD	F	p

Efikasi sendiri terhadap tingkah laku provokatif	156.427	1	156.427	7286.773	.000
Efikasi sendiri untuk mengelakkan tingkah laku agresif	154.939	1	154.939	10436.423	.000
Efikasi sendiri untuk mengelakkan rasa bersalah terhadap diri sendiri	157.641	1	157.641	4740.629	.000
Efikasi sendiri kepada mangsa yang menidakkan perasaan mereka	154.707	1	154.707	7104.853	.000

PERBINCANGAN DAN IMPLIKASI

Dapatan kajian menunjukkan terdapat peningkatan signifikan tahap efikasi sendiri bagi kumpulan eksperimen selepas mengikuti intervensi modul H.E.A.T berasaskan Terapi Rasional Emotif Tingkah Laku (REBT). Sebaliknya, kumpulan kawalan tidak menunjukkan perubahan yang ketara antara ujian pra dan ujian pasca. Keputusan ini membuktikan bahawa intervensi modul H.E.A.T berupaya meningkatkan efikasi sendiri mangsa buli selaras dengan dapatan Amin Al-Hadi et al. (2016) dan Yani et al. (2023) yang mendapati intervensi kaunseling kelompok dapat mempertingkatkan efikasi sendiri pelajar.

Modul H.E.A.T merangkumi empat subskala utama iaitu mengurangkan tingkah laku provokatif, mengelak tingkah laku agresif, mengawal rasa bersalah dan menidakkan perasaan negatif terhadap diri. Setiap aktiviti seperti trait personaliti, garis hidup, SWOT diri dan matlamat diri berasaskan prinsip REBT telah membantu peserta mengenal pasti kepercayaan tidak rasional serta menggantikannya dengan pemikiran yang lebih rasional dan positif (David et al., 2005; Steward & Bernard, 2023). Modul ini berfungsi sebagai alat pemerkasaan yang memberi mangsa peluang untuk bangkit semula sebagai individu yang lebih kuat.

Berdasarkan Teori Kognitif Sosial Bandura (1977), peningkatan efikasi sendiri memainkan peranan penting dalam mengawal tingkah laku, pemikiran dan emosi individu ketika berhadapan dengan tekanan sosial. Mangsa buli yang memiliki efikasi sendiri tinggi lebih yakin, berdaya tahan dan mampu mengawal tindak balas terhadap situasi buli (Wachs, 2020; Clark & Bussey, 2020).

Amin Al Hadi et al. (2016) menyatakan bahawa ada dalam kalangan mangsa buli bersikap provokatif lalu mengundang berlakunya buli pada dirinya. Provokatif melibatkan penggunaan bahasa yang boleh mengundang kemarahan dan menyinggung perasaan dengan tujuan untuk menimbulkan konflik (Azianura & Mohammad Rahim, 2019). Menurut Amin Al Hadi (2017) tingkah laku provokatif ini kadang kala tidak disedari bahawa tingkah laku yang dilakukan mengundang kemarahan orang lain. Seseorang yang mengalami kemarahan boleh diperhatikan dari segi ungkapan yang pasif, agresif atau tegas (Mohd Suhaimi et al., 2021). Efikasi sendiri dalam mengelakkan tingkah laku agresif sangat penting kepada mangsa buli supaya mangsa buli

dapat mengawal diri dan tidak berlaku provokasi antara mangsa buli dan pembuli (Guo, Tan & Zhu, 2022). Provokasi yang dilakukan akan menyebabkan seseorang mula bertindak dengan melakukan sesuatu akibat tanggapan penerima provokasi menganggap lebih baik menyerang daripada diserang bagi menunjukkan pembelaan dirinya akibat diprovokasi dan tingkah laku agresif juga perlu dielakkan agar tidak mendatangkan kesan negatif kepada fizikal dan emosi (Khaira 2022). Efikasi sendiri memberi pengaruh yang besar kepada tingkah laku seseorang (Hariyanti et al., 2019).

Efikasi dalam mengelakkan rasa bersalah berkait dengan emosi yang tidak selesa yang sering dikaitkan bagi menyatakan emosi yang mengganggu tindakan dan fikiran yang dilakukan dipercayai salah (Caprara et al., 2020) oleh mangsa buli. Mangsa buli beranggapan bahawa kejadian buli yang berlaku pada diri mereka adalah disebabkan oleh diri mereka. Rasa bersalah ini adalah akibat keadaan emosi yang negatif yang muncul ketika tingkah laku bertentangan tingkah laku yang sepatutnya (Utami & Asih, 2016). Efikasi sendiri terhadap meniadakan perasaan pembuli dapat membantu mangsa buli mengurus emosi dengan baik dan kompetitif untuk bersaing secara proaktif (Idang et al., 2021). Mangsa buli dapat meyakinkan diri mereka bahawa mereka boleh berhadapan dengan pandangan orang lain dan tidak bimbang persepsi orang terhadap dirinya. Ini kerana, seseorang yang percaya bahawa dirinya mempunyai kemampuan yang sama dengan orang lain, selalu berfikir positif dan mampu mengendalikan emosinya dengan baik (Liu et al., 2023).

Secara keseluruhan, pendekatan kognitif dan emosi dalam modul H.E.A.T terbukti berkesan memperkukuh efikasi sendiri mangsa buli serta menyokong kesejahteraan psikologi mereka melalui perubahan pemikiran, emosi dan tingkah laku yang lebih adaptif. Implikasi kajian menunjukkan bahawa Modul H.E.A.T berpotensi menjadi satu pendekatan intervensi yang efektif dalam membina efikasi sendiri mangsa buli. Oleh itu, modul ini boleh digunakan oleh guru bimbingan dan kaunseling sebagai satu alat intervensi sistematik dalam program pembangunan sahsiah dan kesejahteraan emosi murid.

RUMUSAN

Modul H.E.A.T dibangunkan bagi membantu mangsa buli pulih daripada kesan negatif buli serta membina keupayaan mengelakkan diri daripada terus dibuli. Modul ini dibangunkan berasaskan analisis keperluan telah dijalankan. Keberkesanan modul turut dibuktikan dalam meningkatkan efikasi sendiri mangsa buli melalui pendekatan psikopendidikan berasaskan Terapi Rasional Emotif Tingkah Laku (REBT). Pendekatan ini membantu menstruktur semula pemikiran tidak rasional mangsa buli kepada yang lebih positif, seterusnya meningkatkan daya tahan, keyakinan, ketegasan, dan penghargaan terhadap diri sendiri.

PENGHARGAAN

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MODEL INTERVENSI BERASASKAN KELUARGA SEBAGAI SOKONGAN KEPADA PENJAGA PESAKIT

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ABSTRAK

Perubahan struktur demografi di Malaysia dan di peringkat global semakin mendapat perhatian pelbagai pihak. Perubahan ini juga seiring dengan peningkatan jumlah pesakit kronik yang dapat dikaitkan dengan penuaan penduduk. Fenomena ini membawa implikasi besar terhadap dinamik keluarga serta kesejahteraan sosial negara. Dalam konteks ini, penjaga pesakit memikul tanggungjawab yang semakin kompleks, bukan sahaja dari segi fizikal malah emosi, sosial, kewangan dan lain-lain. Namun, intervensi sokongan yang disediakan untuk golongan ini masih banyak berfokus kepada individu penjaga tanpa mengambil kira aspek kekeluargaan sebagai teras utama kesejahteraan. Keupayaan keluarga untuk mengekalkan fungsi, komunikasi berkesan, serta sokongan dalaman yang konsisten menjadi faktor penting kepada kesejahteraan penjaga, pesakit, dan keseluruhan sistem penjagaan dalam tempoh jangka panjang. Kajian ini menggunakan pendekatan *grounded method* bagi membangunkan Model Intervensi Berasaskan Keluarga untuk Penjaga Pesakit. Seramai 33 orang penjaga yang merupakan ahli keluarga pesakit kronik dan 9 ahli profesion menolong dari pelbagai disiplin ditemu bual secara mendalam untuk mendapatkan gambaran holistik tentang aspek-aspek penting dalam perangkaan intervensi sokongan kepada penjaga. Analisis data menunjukkan bahawa kesejahteraan penjaga amat bergantung pada kekuatan sistem keluarga yang meliputi beberapa aspek penting dalam menentukan kefungsiannya keluarga penjaga. Selain itu, peranan rangkaian sokongan formal seperti perkhidmatan kesihatan, komuniti dan dasar awam hanya dapat berfungsi secara berkesan apabila diperkukuhkan dengan kekuatan dalaman keluarga penjaga itu sendiri. Implikasi kajian bukan sahaja penting kepada penyedia perkhidmatan kesihatan dan sosial, tetapi juga kepada pembuat dasar dalam merangka polisi populasi, dasar penuaan, serta pembangunan keluarga. Dengan mengukuhkan institusi

keluarga sebagai unit asas masyarakat, kesejahteraan penjaga dan pesakit dapat ditingkatkan secara mampan.

Kata Kunci: Keluarga, Intervensi Berasaskan Keluarga, Penjaga, Sokongan.

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SOCIAL EXCHANGE, ACTIVITY, AND INTERACTION AMONG THE ELDERLY: A QUALITATIVE EXPLORATION OF TECHNOLOGY'S IMPACT

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ABSTRACT

Malaysia is projected to become an ageing nation by 2030, when more than 15% of its population will be aged 60 years and above. This demographic shift intensifies concerns of social exclusion among older adults, who face barriers such as limited digital literacy, accessibility challenges, and fear of scams and privacy breaches. These barriers diminish opportunities for participation in community life, increasing risks of loneliness, isolation, and declining well-being. At the same time, digital technologies offer opportunities for enhancing elderly participation in everyday social life. This study explores the role of technology in shaping elderly social engagement through four principles: **social exchange, activity, compulsion, and interaction**. A qualitative design was employed, using semi-structured interviews with older adults in Perak and Selangor, Malaysia, sampled purposively to reflect diversity in gender, living arrangements, and digital literacy. Data were analysed using reflexive thematic analysis, combining deductive and inductive approaches.

Findings revealed that elderly engagement is characterised by reciprocity and mutual support (exchange), opportunities for meaningful participation (activity), relational contact across peers and generations (interaction), and enabling or constraining conditions that prompt participation (compulsion). Three imperatives emerged: (i) foster community-based activities that are local and interest-aligned, (ii) provide accessible, hands-on digital literacy training tied to social use, and (iii) address safety and privacy concerns through fraud prevention and data protection. As a way forward, the study suggests a **Digital Engagement Model** built upon these four principles to strengthen social inclusion. The model highlights education, accessibility, awareness, and empowerment as cross-cutting strategies to reduce barriers and ensure elderly individuals remain active, connected, and valued members of society.

Keywords: Social Engagement; Older Adults; Exchange; Activity; Interaction; Compulsion; Digital Literacy.

INTRODUCTION

Malaysia's demographic transition towards an ageing nation, with over 15% of its population projected to be 60 years and above by 2030 (Department of Statistics Malaysia, 2023), brings significant social challenges. Chief among these is the risk of **social exclusion**, as older adults often experience barriers to digital participation, including low literacy, poor access, and mistrust of online systems (Kebede et al., 2022). This exclusion limits their engagement in family, community, and civic life, heightening risks of loneliness, isolation, and poor well-being (Ismail et al., 2021). Conversely, digital technologies offer pathways to enhance elderly social life by enabling **communication, interaction, and participation** across diverse contexts (Damant et al., 2017). They support intergenerational ties, community involvement, and access to healthcare and civic services (Holgersson et al., 2019). Yet, the persistence of the digital divide underscores the need for targeted solutions. This study investigates how technology shapes elderly engagement through the principles of **social exchange, activity, compulsion, and interaction**, while also proposing a **Digital Engagement Model** to strengthen inclusion based on the findings.

METHODOLOGY

This study employed a **qualitative research design** to explore older adults' lived experiences and perceptions of digital engagement and social inclusion. The qualitative approach was selected because it enables the capture of rich, contextualized narratives that reveal the meanings and motivations underlying participants' technological behaviors (Braun & Clarke, 2019; Creswell & Poth, 2018).

The study was conducted in two Malaysian states **Perak** and **Selangor** chosen for their mix of rural and semi-urban communities where older adults exhibit varying levels of digital literacy and access to technology. Seventeen participants aged **60 years and above** were selected through **purposive, maximum variation sampling** to represent diverse backgrounds in terms of gender, age, living arrangement, and exposure to digital tools (Patton, 2015). Recruitment was carried out through **PAWE community centres, senior citizens' associations, and local networks**. Each

participant met inclusion criteria of being aged 60 or above, residing in the community and capable of communicating in **Bahasa Melayu, English or Tamil**. Ethical approval was obtained from the university research committee, and all participants provided **informed consent** prior to participation.

The study was conducted across **three distinct geographical settings** in Malaysia around **urban, sub-urban, and rural** to capture the diversity of digital engagement experiences among older adults. These classifications were determined based on the **Department of Statistics Malaysia (Department of Statistics Malaysia, 2023)** definitions and socio-demographic indicators such as **population density, infrastructure availability, and economic activity**. The inclusion of varied settings provided a comprehensive understanding of how environmental context influences digital inclusion and social participation.

The **Design Science Research (DSR)** process underpinned the methodological approach of this study. It consisted of five iterative phases. **Problem Identification** recognizing digital and social exclusion among older adults in rural and semi-urban Malaysia. **Suggestion Phase** is gathering insights through interviews to identify factors influencing digital participation. **Framework Design (D-EngAge)** is developing a conceptual model integrating the four analytical principles. **Evaluation** is validating and refining findings through iterative data analysis. **Conclusion and Reflection** is consolidating themes to propose the D-EngAge framework for social inclusion.

This cyclic model enabled continuous reflection between empirical evidence and theoretical development, ensuring that the framework evolved responsively to participants' lived experiences (Mannheim & Köttl, 2024; Peffers et al., 2007).

DATA COLLECTION

Face-to-face semi-structured interviews were carried out with older adults from urban, sub-urban, and rural areas in Selangor and Perak to capture diverse experiences of digital engagement. Urban participants were from areas such as Shah Alam and Petaling Jaya, sub-urban participants from Bestari Jaya and Tambun, and rural participants from Kampung Jawa and Kerling. Each interview lasted 30–60 minutes and was conducted in a comfortable setting either at participants' homes, PAWE centres, or community halls. Conversations encouraged participants to share their daily digital habits, social interactions, and challenges with technology. Questions explored how they used mobile phones, WhatsApp, Facebook, and YouTube for communication, community activities, and accessing information. Participants were also asked about difficulties such as scam calls, online payments, or poor connectivity, and how they sought help when facing digital problems. All sessions were audio-recorded with consent, and field notes were taken to capture non-verbal cues, emotions, and the environment to enrich understanding of each participant's story.

URBAN LOCATIONS

Urban areas were identified according to DOSM's criterion of **population concentration exceeding 10,000 residents**, where at least **60% of the population is engaged in non-**

agricultural activities (Department of Statistics Malaysia, 2023). Urban zones are characterized by **high internet penetration, dense housing developments**, and access to **public amenities** such as hospitals, banks, and educational institutions. Participants from urban settings—such as **Shah Alam and Petaling Jaya in Selangor** were typically more digitally literate, having regular access to smartphones, Wi-Fi, and online government services. These respondents often used technology for **communication, financial transactions, and entertainment**, reflecting patterns observed in other urban ageing populations (Rantala et al., 2024).

SUB-URBAN LOCATIONS

Sub-urban areas were defined as **transitional zones** situated between major cities and rural peripheries. These areas exhibit moderate infrastructure development and growing access to digital services but still face **sporadic internet connectivity** and **limited institutional support for elderly digital learning** (Ismail et al., 2021). Sub-urban communities such as **Bestari Jaya in Selangor** and **Tambun in Perak** represent a **blended socio-economic profile**, with participants showing moderate digital competence and reliance on social media platforms like WhatsApp for community coordination and news sharing. Despite having mobile devices, many relied on **mobile data rather than broadband**, reflecting cost-conscious behavior and partial digital participation.

RURAL LOCATIONS

Rural areas were classified following DOSM's definition of **settlements with fewer than 10,000 residents**, where a majority are engaged in **agriculture or informal economic activities**. These regions typically have **lower digital infrastructure, weaker internet coverage**, and **limited exposure to digital education programmes** (Asrulsani et al., 2023). Rural participants were recruited from villages such as **Kampung Jawa and PAWE Tambun**, where elderly individuals often depended on **family or local youth volunteers** for digital assistance. Many used basic phones or shared smartphones within households, with digital engagement primarily focused on **communication and community updates**. Their experiences reflected the strongest digital divide but also demonstrated resilience through peer learning and offline social engagement.

Location Type	Population Characteristics	Economic Activity	Digital Infrastructure	Example Sites (State)	Typical Participant Profile
Urban	>10,000 population; dense housing	Service and industrial sectors	Strong broadband, 4G/5G access	Shah Alam, Petaling Jaya, Ampang (Selangor)	High digital literacy, regular smartphone users
Sub-Urban	5,000–10,000 population; mixed housing	Small businesses, semi-industrial	Moderate connectivity, limited Wi-Fi	Bestari Jaya (Selangor), Tambun (Perak)	Moderate digital literacy; use mobile data and WhatsApp
Rural	<10,000 population; dispersed housing	Agriculture, informal work	Weak broadband; limited access to ICT	Kampung Jawa, Kerling	Low digital literacy; basic phone or shared smartphone users

Table 1. Classification of Research Locations

Table 1 summarizes the demographic, infrastructural, and economic criteria used to define the three research zones. The classification draws primarily from the Department of Statistics

Malaysia (2023), which defines urban areas as localities with populations exceeding 10,000 and at least 60 percent non-agricultural employment. Sub-urban areas, often transitional zones, exhibit mixed residential and small-scale economic activity with moderate connectivity (Ismail et al., 2021; Kebede et al., 2022). Rural areas are defined by low population density and agriculture-based livelihoods, reflecting limited digital infrastructure and access (Asrulsani et al., 2023). Including these distinct settings enabled the study to capture how contextual conditions shape digital inclusion and social engagement among older Malaysians (Rantala et al., 2024).

All data were collected through **face-to-face, semi-structured interviews** conducted between March and May 2025. The interviews were held at convenient and familiar venues for participants either in their **homes, PAWE centres, or community halls** to ensure comfort and natural interaction. Each interview lasted **between 30 and 60 minutes**, depending on participant engagement and depth of responses.

The **interview guide** was anchored to the study's four analytical dimensions: **Activity, Interaction, Social Exchange, and Compulsion**. Open-ended questions encouraged elderly participants to narrate their daily experiences, modes of social participation, and interactions with digital tools such as smartphones, Facebook, and WhatsApp community groups. While technology was discussed, emphasis was placed on how these tools supported or hindered **social inclusion** in everyday life. With permission, all sessions were **audio-recorded** and **transcribed verbatim** in the language used by participants. To preserve authenticity and minimize misinterpretation, field notes were also recorded to capture non-verbal cues and contextual observations.

DATA TRANSCRIPTION

Recordings were transcribed verbatim to preserve participants' authentic voices and linguistic nuances. This stage enabled the researcher to immerse fully in the data and begin recognising recurring words, metaphors, and patterns related to digital engagement. As highlighted by Nowell et al. (2017), transcription forms a critical part of familiarisation, ensuring accuracy and reflexive engagement with participants' meanings.

DATA ANALYSIS

Thematic analysis followed Braun and Clarke's (2006, 2019) reflexive framework using a hybrid approach that combined deductive and inductive reasoning. Coding began in Microsoft Excel, guided by the four analytical pillars Activity, Interaction, Social Exchange, and Compulsion—and was refined as new insights emerged. Each transcript was reviewed line by line, with excerpts capturing direct participant quotes and interpretations reflecting deeper meanings (Miles, Huberman, & Saldaña, 2014; Hayfield & Huxley, 2015). Credibility was strengthened through researcher cross-checking, supervisory feedback, and iterative refinement. The validated themes informed the development of the **Digital Engagement Framework (D-EngAge)**, aimed at promoting social inclusion among older Malaysians.

			CODING			
	Question(protocol)	Answer	Excerpt	Interpretation	Sub - Theme	Theme
RESPONDEN 1						
RO1	What social activities do you participate in? (For example, church, community meetings, family reunions?)	Yes , I am an active AJK in many community groups.	I am an active AJK in many community groups.	Actively participates in social roles and events	Social Participation	Social Exchange

Table 2. Structure of the Data Analysis Matrix

FINDINGS AND DISCUSSION

The analysis revealed that elderly participants' experiences with digital technologies were multifaceted and influenced by a complex interplay of **social, psychological, and structural factors**. Thematic analysis yielded four major domains **Social Exchange, Activity, Interaction, and Compulsion** which together illustrate how older adults navigate digital inclusion and exclusion in their everyday lives. Each theme reflects different dimensions of their digital engagement and the social meanings attached to technology use.

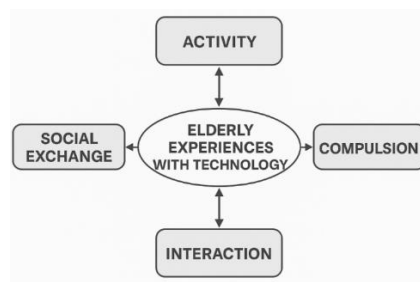


Figure 1. Elderly experiences with technology

SOCIAL EXCHANGE

The first theme, Social exchange involves mutual support and the reciprocal giving and receiving of emotional, informational, or practical help among older adults and their networks (Iwuagwu et al., 2023; Scharlach & Lehning, 2013). Social exchange captured how older adults engage in acts of reciprocity and mutual support within family and community contexts. Many participants reported providing **emotional guidance, caregiving, or financial assistance** to family members, while also receiving help with transportation, health information, or bill payments. In several cases, digital tools facilitated these exchanges particularly through **WhatsApp groups** for family coordination or sharing reminders about community meetings.

Social exchange emerged as a dominant theme demonstrating how older adults engage in reciprocal communication, caregiving, and emotional support through digital media. Participants described technology as a bridge that reconnects them with long-lost friends and maintains day-to-day communication with relatives and community members. For many, mobile phones and

social media platforms like Facebook and WhatsApp have become “a major part of daily routine,” extending social networks across geographical boundaries. This finding supports previous evidence that digital engagement enhances intergenerational contact and fosters a sense of belonging among older adults (Damant et al., 2017; Holgersson et al., 2019; Kim et al., 2023).

The excerpt “*Yes, I use a mobile phone to communicate with my family and friends... mostly need my neighbour’s children to guide me or stay by my side*” highlights how older adults rely on **informal, intergenerational digital mentoring**. The act of seeking help from younger neighbours demonstrates that social ties function as a **learning bridge**, where trust-based relationships enable technological adaptation. This finding reflects how digital engagement among seniors is rooted in **social support systems** rather than individual initiative (Damant et al., 2017; Kebede et al., 2022).

The next excerpt, “*Even we have a culture of checking on our neighbours if we didn’t see them outside since morning...*”, portrays a strong sense of **collective vigilance and mutual care**. This everyday monitoring shows that social exchange extends beyond communication it represents a **safety network** embedded in community culture (Holgersson et al., 2019; Su et al., 2023). Similarly, the final excerpt, “*We all are like family—Chinese, Malay, and Indians... We celebrate all occasions together... we are active in our WhatsApp community group,*” illustrates **harmonious multicultural cohesion** supported by digital tools. WhatsApp groups serve as a virtual extension of community life, reinforcing unity and inclusiveness across ethnic lines (Rantala et al., 2024; Kim et al., 2023).

This study contributes the concept of “**integrated social inclusion**,” describing how older adults sustain community belonging through **mutual digital learning, neighbourly vigilance, and multicultural solidarity**. Unlike previous studies that treated digital support and social inclusion as separate constructs (Damant et al., 2017; Kebede et al., 2022), this research reveals a **hybrid social model** where digital communication, caregiving, and cultural inclusivity are intertwined. The Malaysian context adds new depth by showing that digital engagement among older adults is not only functional but also **culturally collaborative**, transforming technology use into a **shared social practice** that strengthens resilience, empathy, and intergenerational ties.

However, some participants expressed **mistrust toward digital financial platforms and social media**, citing fears of online fraud, misinformation, and privacy invasion. These concerns significantly limited participation. Particularly among those with **lower digital literacy levels or past negative experiences**. This finding aligns with earlier studies that identified **security concerns as a key deterrent to digital inclusion** among older adults (Nguyen et al., 2019; Holgersson et al., 2019). This research therefore extends existing understanding by demonstrating how **trust and perceived safety directly mediate the success of community-based digital inclusion**, suggesting that confidence-building and digital protection awareness must accompany social learning initiatives.

ACTIVITY

The second theme, **Activity**. Activities are the structured or informal physical, cognitive, and social engagements that older adults pursue to maintain well-being, purpose, and continuity in life (Scharlach & Lehning, 2013 ; Su et al., 2023). This theme has highlighted how elderly individuals continued to maintain religious, cultural, and recreational participation through digital means. Participants described joining **livestreamed religious services**, watching **YouTube tutorials for**

traditional recipes, or engaging in **community WhatsApp groups** that disseminated event updates and prayer schedules. These activities were particularly important for those with **mobility limitations** or health issues, as digital platforms enabled sustained social and spiritual engagement from home.

Such findings align with earlier studies showing that digital technology can reinforce older adults' social presence by providing alternative avenues for participation and cultural continuity (Kebede et al., 2022; Damant et al., 2017). Nonetheless, older adults without smartphones or stable internet access remained disadvantaged, revealing a persistent **digital divide** between and within communities. This demonstrates a shift from passive digital consumption toward **active engagement**, where older adults are not merely receiving information but using technology to sustain community membership and purposeful ageing (Damant et al., 2017).

“PAWE Tambun will have meetings every day and activities very frequently. We also do meet up and spend time at the mosque. PAWE also organizes programs with university students and lets us learn and use digital devices like computers.”

This excerpt highlights intergenerational collaboration and consistent community participation, showing that digital engagement complements rather than replaces face-to-face activity. Such initiatives merge social bonding with digital literacy, confirming that community spaces like PAWE centres operate as **hybrid learning environments** where older adults acquire practical digital skills while reinforcing cultural and social ties (Rantala et al., 2024; Kim et al., 2023). Building on these findings, this study introduces the concept of **Collaborative Social Inclusion**, in which community-based programs act as platforms for shared learning, mutual support, and cultural continuity. Unlike previous studies that treated social participation and digital literacy as separate constructs (Damant et al., 2017; Kebede et al., 2022), this research shows that Malaysian senior communities blend both dimensions, fostering empowerment through collective practice.

Based on the findings, three strategies were proposed to promote digital inclusion among older Malaysians. **Community-based participation** involves creating locally relevant and interest-driven programs that combine physical and digital engagement, enabling inclusion across mobility and literacy levels (Rantala et al., 2024; Su et al., 2023). **Practical digital literacy training** focuses on small, hands-on sessions that teach everyday digital skills such as messaging, video calls, and online payments at a comfortable pace (Kebede et al., 2022; Damant et al., 2017). **Digital safety and trust building** addresses fears of scams and misinformation by providing cybersecurity awareness through trusted community leaders or “digital ambassadors” (Holgersson et al., 2019; Nguyen et al., 2019). Together, these strategies highlight the role of community centres like PAWE as key enablers of sustainable digital inclusion, integrating social participation, skill development, and trust within Malaysia's community-oriented culture.

INTERACTION

The third theme, **Interaction**. Interaction refers to the social engagement and communication older adults have with others, often measured by frequency, quality, and diversity of their social contacts (Su et al. 2023; Scharlach & Lehning, 2013). This theme underscored the social significance of **messaging applications and video calls** in maintaining daily communication. Participants emphasized the role of **WhatsApp, Facebook Messenger**, and **video chats** in enabling intergenerational bonds, especially with children and grandchildren living in different towns or

abroad. This digital connectivity fostered emotional closeness, reduced feelings of isolation, and promoted a sense of belonging. However, some elderly participants particularly those over 70 reported **limited confidence** in using digital features beyond messaging. These individuals often relied on younger family members for assistance. This reflects previous observations that intergenerational digital support plays a pivotal role in sustaining elderly engagement (Kim et al., 2023; Rantala et al., 2024).

The excerpt, *“All my community groups are always active in WhatsApp group and keep posted about latest news,”* reflects how digital platforms like WhatsApp have become the **primary channel for daily social connectivity**. For many older adults, these group chats replace traditional face-to-face interactions, allowing them to remain informed, engaged, and socially visible within their communities. This aligns with prior studies showing that messaging platforms sustain continuous communication and reduce social isolation (Kim et al., 2023; Rantala et al., 2024). However, the participant’s reliance on digital media also reveals a subtle shift where **social participation is mediated through technology rather than in-person interaction**, illustrating the modern blending of digital and communal life among Malaysian seniors.

The another excerpt, *“Most of the elders refused to move out from their outdated land... they need this mobile usage to communicate at least during emergency to save them,”* highlights the **life-saving role of digital communication**. It portrays how mobile phones serve as a **safety mechanism** in rural communities, compensating for physical isolation. This reflects a new understanding of technology as both a **social necessity and a protective tool** where communication is not merely for connection, but for survival in times of crisis (Nguyen et al., 2019; Su et al., 2023).

This study contributes the dual concept of **“adaptive digital interaction,”** combining both social necessity and emergency communication dimensions. Unlike earlier studies that framed digital interaction as purely social (Damant et al., 2017; Kebede et al., 2022), this research reveals that Malaysian older adults engage digitally **both for belonging and safety**. Mobile technology is thus redefined as an **essential social infrastructure**, not just a communication tool. This insight expands the theoretical understanding of interaction among ageing populations, showing that digital platforms can simultaneously sustain daily connectedness and serve as **lifelines in emergencies**, especially in rural or semi-urban settings.

COMPULSION

The fourth theme, **Compulsion**. Compulsion refers to internal or societal pressures that lead older adults to socially withdraw or participate involuntarily, often due to stigma, negative self-concept, or institutional demands (Iwuagwu et al. 2023; Su et al., 2023). This theme has revealed that not all engagement with technology was voluntary or empowering. Several participants described using digital media primarily to **avoid loneliness** or **meet community expectations**. For instance, some joined online religious groups out of a sense of obligation rather than personal interest. Others participated in local community WhatsApp chats to “stay informed” or “avoid being left out.” Structural barriers such as **limited transport options, low digital literacy, and inadequate infrastructure** further constrained genuine participation, reinforcing a sense of **dependency** rather than empowerment.

The Compulsion theme captures the **anxieties, mistrust, and compulsive behaviours** emerging from digital exposure. Some respondents expressed fear of scam calls and online deception, showing that while they recognise the utility of technology, they also experience stress and avoidance behaviours (Anderson & Perrin, 2017; Nguyen et al., 2019). Such experiences highlight the paradox of digital inclusion **access without assurance** where participants remain connected but vulnerable.

The excerpt *“I write on a paper and take picture to save in this phone”* illustrates the creative yet constrained strategies older adults adopt to overcome **digital illiteracy**. It shows how participants compensate for limited technical skills by developing their own “workaround” solutions, blending traditional habits with modern tools. Such improvisation reflects an effort to remain digitally active despite technological barriers (Kebede et al., 2022; Nguyen et al., 2019). The excerpt *“My daughter will bring me to the bank”* highlights **dependence on younger family members** for digital or financial tasks. This dependency underscores a generational divide in technology confidence and literacy, where older adults remain excluded from full participation in digital finance due to fear and lack of exposure (Damant et al., 2017; Holgersson et al., 2019).

Finally, the emotionally charged statement *“My husband is a victim of a scam call and lost RM4K in 1984...”* demonstrates how **past traumatic experiences with financial fraud** continue to shape perceptions of digital risk. Fear of scams, deception, and economic loss erodes trust, leading many participants to limit or withdraw from online engagement entirely (Nguyen et al., 2019; Su et al., 2023). This excerpt reveals that digital compulsion is not only behavioural but also **psychological**, rooted in enduring anxiety about security and vulnerability.

This study contributes the concept of **“defensive digital adaptation,”** describing how older adults simultaneously attempt to engage with and protect themselves from digital risks. Unlike earlier studies that viewed fear solely as a barrier (Anderson & Perrin, 2017; Holgersson et al., 2019), this research shows that Malaysian older adults employ **adaptive resistance strategies** such as avoiding digital banking and relying on family intermediaries. These actions represent a new form of **selective digital participation**, where technology use is filtered through personal risk awareness and lived experience. This contribution expands the understanding of **Compulsion** by linking fear, adaptation, and autonomy, demonstrating that digital hesitation among older adults is a **rational coping response** shaped by past trauma and socio-cultural context rather than simple unwillingness to engage.

SUMMARY OF ANALYSIS

The analysis revealed that older adults’ engagement with digital technology is multidimensional, influenced by interwoven social, psychological, and structural factors. Thematic analysis produced four interconnected domains **Social Exchange, Activity, Interaction, and Compulsion** that together portray how older Malaysians navigate both inclusion and exclusion in a digitising society. **Social Exchange** demonstrated that technology operates as a social bridge linking older adults with family, neighbours, and multicultural communities. Participants described using WhatsApp and Facebook to reconnect with long-lost friends, coordinate caregiving, and maintain community vigilance. These findings emphasise integrated social inclusion a hybrid form of engagement where digital learning, reciprocity, and cultural solidarity strengthen belonging and resilience (Damant et al., 2017; Kebede et al., 2022; Kim et al., 2023).

Activity captured how digital media sustain social, religious, and educational participation. Livestreamed prayers, YouTube learning, and PAWE-organised programmes enabled continuous involvement even among elders with mobility limits. This theme advances the idea of collaborative social inclusion, in which community centres blend social participation with digital skill-building, allowing intergenerational learning and awareness of online safety (Rantala et al., 2024; Su et al., 2023).

Interaction revealed the vital role of messaging and video-calling platforms in maintaining relationships and emotional closeness. While WhatsApp groups reduced isolation and enhanced social visibility, many elders used them primarily during urgent situations, showing a dual purpose of companionship and safety. This led to the concept of adaptive digital interaction, describing technology as both a connector and a lifeline in emergencies, particularly in rural and sub-urban settings (Nguyen et al., 2019; Rantala et al., 2024).

Compulsion exposed the anxieties accompanying digital engagement. Some participants relied on creative “workaround” strategies or family assistance, while others avoided digital banking after traumatic scam experiences. This pattern informed the idea of defensive digital adaptation, where elders engage selectively, balancing participation with self-protection. Such behaviours reflect rational coping shaped by fear, trust, and cultural norms rather than resistance to technology (Holgersson et al., 2019; Su et al., 2023).

Building upon these four themes, the study proposes three actionable strategies to strengthen digital inclusion among Malaysia’s ageing population. First, Community-Based Participation promotes locally grounded and interest-aligned programs that merge physical and digital engagement, reflecting the Activity and Social Exchange domains where older adults sustain belonging through shared learning and community collaboration. Second, Practical Digital Literacy Training responds to gaps highlighted under Interaction and Compulsion, advocating small-group, hands-on workshops that use real-life tasks such as messaging, video calls, and online transactions to build confidence and autonomy (Kebede et al., 2022; Rantala et al., 2024). Finally, Digital Safety and Trust Building addresses persistent fears of online fraud and misinformation, as noted in the Compulsion theme, by promoting community-led cybersecurity awareness and guidance from trusted “digital ambassadors” (Nguyen et al., 2019; Holgersson et al., 2019). Together, these strategies operationalise the D-EngAge Framework, transforming thematic insights into practical pathways that integrate education, accessibility, awareness, and empowerment ensuring that older Malaysians remain active, connected, and safe participants in a rapidly digitalising society.

SUMMARY OF ACTIONABLE IMPERATIVES

From these thematic findings, three actionable strategies were derived to support digital inclusion among Malaysia’s ageing population:

1. **Community-Based Participation:** Develop more locally grounded, interest-aligned programs that integrate both physical and digital participation opportunities.
2. **Practical Digital Literacy Training:** Provide more small-group, hands-on workshops using real-life scenarios such as messaging, video calling, and online transactions delivered at a comfortable pace for older adults.

3. **Digital Safety and Trust Building:** Address cyber-security concerns through targeted awareness campaigns, easy-to-understand safety guidelines, and trusted community-led digital ambassadors.

CONCLUSION

This study concludes that digital technology serves as both an enabler and a constraint in the social lives of older Malaysians. While digital tools such as WhatsApp, Facebook, and YouTube promote communication, participation, and cultural continuity, barriers including limited digital literacy, fear of scams, and infrastructural inequalities continue to shape selective engagement among older adults (Damant et al., 2017; Nguyen et al., 2019; Holgersson et al., 2019). The findings highlight that digital engagement among seniors is socially constructed embedded in mutual care, intergenerational assistance, and community trust rather than purely individual or technical (Rantala et al., 2024; Kim et al., 2023).

The four thematic domains identified in this study Social Exchange, Activity, Interaction, and Compulsion reveal distinct yet interconnected patterns of engagement that define how older adults negotiate digital inclusion and exclusion. From these themes, four theoretical contributions emerged: Integrated Social Inclusion, which underscores how digital communication enhances reciprocity and multicultural solidarity; Collaborative Social Inclusion, which highlights community centres as intergenerational spaces for learning and participation; Adaptive Digital Interaction, which reframes technology as both a social connector and safety mechanism; and Defensive Digital Adaptation, which captures older adults' selective and protective approaches to online participation (Su et al., 2023; Kebede et al., 2022). Together, these contributions expand current understanding of ageing and technology, showing that digital participation is shaped by a balance of trust, confidence, and cultural values.

The study further translates these conceptual insights into practical strategies that support real-world application. Community-based participation remains essential to ensure that older adults can engage meaningfully in both physical and digital spaces, while small-scale, practical digital literacy training tailored to everyday scenarios enhances competence and autonomy among users. Equally, addressing cybersecurity threats through trust-building initiatives and community-led awareness campaigns is vital to reduce fear and foster safe engagement (Kebede et al., 2022; Holgersson et al., 2019; Rantala et al., 2024). These integrated approaches are embodied within the Digital Engagement Framework (D-EngAge), which consolidates education, accessibility, awareness, and empowerment as the core dimensions of sustainable digital inclusion.

Ultimately, this research provides an empirically grounded framework that redefines digital inclusion for older adults as a socially embedded and culturally adaptive process. Rather than focusing solely on technological access, the study emphasises the importance of relational trust, intergenerational collaboration, and community empowerment. The D-EngAge framework thus offers a valuable guide for policymakers, local organisations, and community centres such as PAWE to promote a more inclusive, safe, and participatory digital ecosystem ensuring that Malaysia's ageing population remains active, connected, and valued in an increasingly digital society (Mannheim et al., 2024; Department of Statistics Malaysia, 2023).

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114-098

LONELINESS, SELF-COMPASSION, AND PSYCHOLOGICAL WELL-BEING AMONG ADULTS IN SARAWAK: SELF-COMPASSION AS THE MEDIATOR

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ABSTRACT

Mental health concerns are on the rise in Malaysia, with about one-third of the population affected. Loneliness has emerged as a major contributor to poor mental health outcomes, negatively impacting both physical and psychological well-being. This study explored the associations between loneliness, self-compassion, and psychological well-being among adults aged 18 to 64 in Sarawak, Malaysia, and examined whether self-compassion mediates the relationship between loneliness and psychological well-being. A total of 394 participants ($M = 32.67$, $SD = 11.07$) were recruited using snowball sampling. Participants completed validated instruments: the UCLA Loneliness Scale (Version 3), Self-Compassion Scale (SCS), and the Scale of Psychological WellBeing (SPWB). Data were analysed using descriptive statistics, independent t-tests, one-way ANOVA, Pearson's correlation, multiple regression, and mediation analysis. Results showed that participants reported moderate levels of loneliness, self-compassion, and psychological wellbeing. Loneliness was significantly negatively correlated with both self-compassion ($r = -0.560$, $p < .001$) and psychological well-being ($r = -0.508$, $p < .001$), while self-compassion was positively correlated with psychological well-being ($r = 0.629$, $p < .001$). Mediation analysis revealed that self-compassion partially mediated the impact of loneliness on psychological wellbeing (Sobel test = -0.786 , $p \leq 0.05$). These findings underscore the protective role of selfcompassion and support its integration into culturally relevant mental health interventions. Future research should explore additional mediators and adopt longitudinal designs to better understand causal relationships.

Keywords: Loneliness, Self-Compassion, Psychological Well-Being, Mental Health, Malaysian.

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**CROSS-CULTURAL ADAPTATION OF STIM-Q COGNITIVE HOME
ENVIRONMENT QUESTIONNAIRE (TODDLERS VERSION) IN MALAY
LANGUAGE**

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ABSTRACT

Early childhood development (ECD) is shaped by nurturing care, including positive stimulation and active interaction between caregiver and children. Reliable and culturally adapted tools are essential to assess home cognitive stimulation, especially in the context of “digital natives” where screen-based media may displace parent–child engagement. This study aimed to cross-culturally adapt, and validate English version of StimQ (Toddler) which has been established with good psychometric properties into Malay language to assess cognitive stimulation of Malaysian toddlers. Three out of four domains of StimQ (Toddler), namely Reading (READ), Parental Involvement in Developmental Advance (PIDA) and Parental Verbal Responsivity (PVR) were cross-culturally adapted and validated following established guidelines. Four experts in varied fields - namely a public health medicine specialist, a paediatrician, a family medicine specialist, and a health communication expert evaluated item clarity and relevance using a 4-point scale. Content validity indices were computed at the levels of Item (I-CVI), Domain (D-CVI), and Scale

(S-CVI). Of 33 items, 32 achieved perfect agreement ($I-CVI = 1.0$) for clarity, with one item scoring 0.75. Except for READ domain with D-CVI of 0.98, other domains scored a D-CVI of 1.0. Overall S-CVI for clarity was 0.99, whereas D-CVI and S-CVI for relevance was 1.0. Panel feedback ensured cultural appropriateness and refinement of instrument. The Malay-translated StimQ (Toddler) demonstrates excellent content validity and cultural relevance. While future research could look into reliability and construct validity, this study highlights that the tool is feasible for clinical and research use in Malaysia.

Keywords: Early Childhood Development, Home Environment, Cognitive Stimulation, Instrument Validation.

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**ELEMEN KESEJAHTERAAN DALAM PEMBANGUNAN MODEL PERSONALITI
LELAKI 'QAWWAM' BAGI MENGATASI PENDERAAN EMOSI WANITA DALAM
KELUARGA BERDASARKAN KONSENSUS PAKAR**

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ABSTRAK

Keganasan rumah tangga khususnya penderaan emosi terhadap wanita semakin membimbangkan dan boleh menjejaskan kesejahteraan institusi kekeluargaan jika tidak ditangani. Justeru, kajian ini dijalankan bagi menganalisis elemen kesejahteraan dalam pembangunan model personaliti lelaki qawwam bagi mengatasi penderaan emosi wanita dalam keluarga berpandukan kaedah analisis fuzzy delphi. Kaedah Fuzzy Delphi digunakan bagi memperoleh konsensus pakar terhadap empat belas item utama dalam elemen kesejahteraan merangkumi aspek sosial, emosi, fizikal dan spiritual. Hasil analisis menunjukkan kesemua item mencapai tahap kesepakatan yang tinggi ($\geq 75\%$) dan nilai ambang yang rendah (≤ 0.2), menandakan keselarasan pandangan pakar terhadap kepentingan item-item tersebut. Tiga item teratas ialah lelaki sentiasa menunjukkan kasih sayang dan perhatian terhadap wanita, tidak menggunakan kata-kata kasar atau merendahkan wanita, menjaga emosi wanita dalam setiap tindakan. Dapatan ini menegaskan bahawa peranan lelaki qawwam dalam aspek kesejahteraan keluarga bukan sahaja tertumpu pada tanggungjawab fizikal, malah turut meliputi dimensi emosi, sosial dan spiritual yang seimbang. Penemuan ini diharap dapat dijadikan panduan dalam pembentukan model lelaki berkualiti dalam keluarga dan penyediaan modul pendidikan keluarga Islam berteraskan kerangka modal insan Madani.

Kata Kunci: Personaliti Lelaki Qawwam, Kesejahteraan, Penderaan Emosi Wanita, Fuzzy Delphi, Konsensus Pakar.

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**PEMBINAAN MODEL PASCA PERCERAIAN WITAJ: SUATU INTEGRASI
SOLUTION-FOCUSED BRIEF THERAPY (SFBT) DAN *COGNITIVE BEHAVIORAL
FAMILY THERAPY (CBFT)***

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ABSTRAK

Perceraian merupakan satu pengalaman hidup yang kompleks, mencetuskan implikasi psikologi, emosi, sosial, dan spiritual yang mendalam kepada individu dan keluarga. Sorotan karya antarabangsa dan tempatan menunjukkan bahawa fasa pasca perceraian dipenuhi trauma emosi, tekanan ekonomi, konflik co-parenting, kehilangan identiti dan sokongan sosial yang tidak mencukupi. Artikel ini menerangkan tentang Model Pasca Perceraian WITAJ, iaitu satu model intervensi berasaskan integrasi Solution-Focused Brief Therapy (SFBT), *Cognitive Behavioral Family Therapy (CBFT)*, dan kekuatan terapi spiritual Islam melalui *tazkiyah al-nafs*. Model ini disusun secara sistematik mengikut lima fasa: Bina Hubungan, Wiqayah, Tahlil, 'Ilaj, dan Pengukuhan. Kajian ini menggunakan pendekatan analisis kandungan melalui sorotan karya yang menumpukan kepada aspek psikologi pasca perceraian, resiliensi, komunikasi keluarga, dan sokongan sosial. Hasilnya menunjukkan bahawa model ini menawarkan rangka kerja terapeutik yang holistik, kontekstual dan sesuai untuk diaplikasikan oleh kaunselor keluarga, pegawai runding cara, dan institusi kekeluargaan dalam membantu individu membina semula kesejahteraan hidup selepas perceraian.

Kata Kunci: Pasca Perceraian, WITAJ, SFBT, CBFT, Psikospiritual, Intervensi Holistik.

PENGENALAN

Perceraian sering digambarkan sebagai titik perubahan yang mendalam dalam kehidupan seseorang. Bagi kebanyakan individu, ia melibatkan kehilangan identiti, struktur keluarga, kestabilan ekonomi, serta sokongan emosi yang selama ini menjadi asas kehidupan. Menurut sorotan karya tempatan dan global, perceraian memberi kesan kepada kesejahteraan psikologi, sosial dan spiritual, terutamanya kepada wanita yang lazimnya memikul beban penjagaan anak dan tanggungjawab ekonomi (Ahmad et al., 2022). Dalam konteks Malaysia, isu stigma sosial, ketidakjelasan hak perundangan, serta kerapuhan sistem sokongan memperburuk kesukaran pasca perceraian.

Model WITAJ, yang asalnya dibina sebagai kerangka kaunseling pra dan pasca perceraian, menyediakan struktur lima fasa berasaskan konsep Islam (Wiqayah, Tahlil, 'Ilaj), namun artikel ini memberi tumpuan khusus kepada pembangunan Model Kaunseling Pasca Perceraian WITAJ dengan integrasi teori *Solution-Focused Brief Therapy (SFBT)* dan *Cognitive Behavioral Family Therapy (CBFT)*. Model pasca ini direka untuk membantu klien memulihkan kestabilan emosi, kognitif, sosial dan spiritual selepas melalui perpisahan.

SOROTAN KARYA

Sorotan karya menunjukkan bahawa isu pasca perceraian memberi kesan signifikan terhadap kesejahteraan emosi, sosial dan spiritual individu. Kajian-kajian terdahulu mendapati bahawa perceraian sering membawa kepada tekanan psikologi yang berpanjangan, konflik keluarga, serta ketidakseimbangan identiti diri sebagaimana diuraikan oleh Berman (1988) dan Ahmad et al. (2022). Selepas perceraian, individu mengalami gelombang emosi yang mendalam seperti kesedihan, kehilangan, marah, dan kekeliruan. Berman (1988) menegaskan bahawa keterikatan emosi yang masih berlarutan walaupun hubungan telah berakhir menjadikan proses penyesuaian hidup lebih mencabar, terutama bagi mereka yang masih terikat dengan memori, harapan atau pergantungan kepada bekas pasangan.

Isu tekanan ekonomi pula menjadi antara cabaran paling ketara selepas perceraian. Ihwanudin (n.d.) menjelaskan bahawa majoriti wanita mengalami kesukaran mengimbangi tanggungjawab kewangan dan pengurusan keluarga secara bersendirian. Kehilangan sumber nafkah, keperluan menyara anak, dan ketidakstabilan pekerjaan menyebabkan tekanan psikologi bertambah, seterusnya menjejaskan kestabilan emosi dan sosial mereka. Di samping itu, kebergantungan psikologi turut menjadi punca gangguan kesejahteraan pasca perceraian. Menurut Ahmad et al. (2022), ramai wanita mengalami kemurungan, keletihan emosi dan tahap resiliensi yang rendah akibat ketiadaan sokongan sosial dan ketidakpastian masa depan. Proses untuk kembali stabil menjadi sukar apabila keyakinan diri terjejas dan kemampuan mengadaptasi perubahan hidup melemah.

Sorotan karya juga menunjukkan bahawa kekangan sokongan sosial dan stigma masyarakat memberi kesan besar terhadap individu pasca perceraian. Ngambi et al. (2023) mendapati bahawa stigma terhadap status janda atau duda membawa kepada diskriminasi halus dan penilaian negatif masyarakat. Situasi ini menyebabkan individu mengasingkan diri, mengurangkan interaksi sosial dan kehilangan sokongan yang diperlukan. Dalam masa yang sama, konflik perundangan dan co-parenting menambah tekanan sedia ada. Abd Malib et al. (2022) menyatakan bahawa isu berkaitan hak penjagaan anak, nafkah, dan pembahagian masa pertemuan sering memanjangkan konflik antara bekas pasangan, terutama apabila wujud kekurangan pengetahuan mengenai hak dan perundangan keluarga. Kesemua faktor ini menunjukkan bahawa pasca perceraian merupakan fasa yang bukan sahaja mempengaruhi emosi individu tetapi juga kesejahteraan sosial, ekonomi dan spiritual secara menyeluruh.

METODOLOGI KAJIAN

Kajian pembinaan Model Kaunseling Pasca Perceraian WITAJ menggunakan reka bentuk Eksploratori Berjajaran (*Exploratory Sequential Design*) dalam kaedah penyelidikan campuran (*Mixed-Methods Design*). Pendekatan ini mengintegrasikan data kualitatif dan kuantitatif bagi memastikan model yang dihasilkan adalah komprehensif, relevan dan berasaskan bukti. Kajian menggunakan pendekatan kualitatif sebagai fasa pertama melalui temu bual mendalam bersama individu yang ingin bercerai atau telah bercerai, kaunselor LPPKN, pegawai runding cara, pegawai sulh serta peguam syarie. Temu bual ini membolehkan penyelidik memahami pengalaman sebenar, isu yang dihadapi, serta keperluan klien secara holistik. Maklumat ini menjadi asas kepada pembinaan kandungan Model Kaunseling Pasca Perceraian WITAJ sebelum ia diuji dalam fasa kuantitatif. Data kualitatif ini dianalisis secara tematik untuk mengenal pasti isu, cabaran dan keperluan sebenar klien pasca perceraian. Seterusnya, fasa kuantitatif melibatkan proses penilaian kesahan dan kebolehpercayaan model pasca perceraian melalui panel pakar dan responden terpilih.

Dua jenis instrumen digunakan: protokol temu bual berstruktur – untuk mengumpul data kualitatif bagi pembinaan kandungan model. Borang penilaian Fuzzy Delphi – digunakan dalam kumpulan berfokus untuk mendapatkan konsensus pakar mengenai komponen model pasca perceraian. Sampel kajian kualitatif terdiri daripada individu yang terlibat dalam isu perceraian, manakala penilaian model melibatkan tujuh orang pakar yang berpengalaman luas dalam intervensi keluarga. Mereka terdiri daripada pensyarah dalam bidang kaunseling keluarga dan perkahwinan, kaunselor perkahwinan, pegawai runding cara dan pegawai sulh. Kepelbagaian latar belakang ini memastikan penilaian model dibuat secara menyeluruh dan berpandukan kepakaran profesional. Bagi penilaian kebolehpercayaan model, seramai tujuh responden yang terdiri daripada klien kaunseling di LPPKN, JPN dan Jabatan Agama terlibat.

Proses pengumpulan data dilakukan melalui lima fasa: penyediaan protokol temu bual, pelaksanaan temu bual berstruktur, pembinaan model pasca perceraian, penilaian kesahan kandungan model serta penilaian kebolehpercayaan model dan instrumen. Data kualitatif dianalisis menggunakan analisis tematik bagi mengenal pasti tema-tema utama berkaitan cabaran dan keperluan pasca perceraian. Data kuantitatif pula dianalisis menggunakan Analisis Fuzzy Delphi untuk menilai tahap persetujuan pakar melalui pengiraan nilai fuzzy, nilai d dan α -cut yang menjadi asas konsensus dalam kajian ini. Analisis kesahan pakar turut digunakan bagi menilai ketepatan konstruk model.

DAPATAN KAJIAN

Asas Teori Model Pasca WITAJ

Model WITAJ merupakan akronim kepada tiga komponen utama intervensi dalam Bahasa Arab *Wiqayah* (Pencegahan), *Tahlil* (Analisis) dan *Ilaj* (Rawatan). Dalam konteks pembangunan Model Pasca Perceraian WITAJ, konsep ini diterjemahkan sebagai pendekatan pemulihan berasaskan psikologi, kekeluargaan dan spiritual yang bergerak secara berfasa. WITAJ tidak hanya berfungsi sebagai struktur intervensi, tetapi sebagai falsafah yang menekankan keseimbangan antara usaha psikologi dan bimbingan spiritual. Ia bertujuan memulihkan individu yang mengalami perceraian melalui tiga teras utama: pencegahan kerosakan emosi yang lebih mendalam (*wiqayah*), analisis keperluan keluarga dan identiti pasca perceraian (*tahlil*), serta pemulihan menyeluruh dari sudut kognitif, emosi dan spiritual (*ilaj*).

Konsep WITAJ juga menekankan integrasi antara dimensi psikospiritual, kognitif, tingkah laku dan sosial, selaras dengan prinsip kesejahteraan holistik dalam Islam. Pendekatan ini memandang manusia sebagai makhluk yang terdiri daripada tubuh, minda, emosi dan roh yang perlu dipulihkan secara seimbang. Oleh itu, setiap fasa dalam WITAJ dirancang supaya memberi ruang kepada klien untuk kembali membina makna hidup, menerima realiti perpisahan, mengukuhkan hubungan dengan Allah, memperbaiki hubungan keluarga, serta membangunkan daya tindak baharu yang lebih adaptif. Melalui falsafah ini, WITAJ bukan sekadar model terapi tetapi menjadi kerangka pemulihan hidup selepas perceraian.

Model Kaunseling Pasca Perceraian WITAJ yang dibangunkan dalam kajian ini berpaksikan gabungan dua teori utama kaunseling moden, iaitu Solution-Focused Brief Therapy (SFBT) dan *Cognitive Behavioral Family Therapy* (CBFT), serta disokong oleh elemen spiritual Islam. Pendekatan integratif ini memastikan bahawa model tidak hanya menangani aspek kognitif dan emosi, tetapi juga nilai, kepercayaan dan amalan spiritual yang penting dalam konteks masyarakat Malaysia.

Solution-Focused Brief Therapy (SFBT) ialah pendekatan yang berorientasikan penyelesaian dan berfokus kepada kekuatan klien. Pendekatan ini melihat klien sebagai individu berkeupayaan, yang mampu membuat perubahan melalui perbualan yang terarah. Teknik seperti *scaling question*, *miracle question*, dan *exception finding* digunakan untuk membantu klien membina matlamat dan mengenal pasti pengalaman positif walaupun berada dalam situasi pasca perceraian. Manakala *Cognitive Behavioral Family Therapy* (CBFT) menekankan pentingnya sistem keluarga sebagai unit analisis. Dalam pasca perceraian, peranan keluarga tidak lenyap sepenuhnya kerana klien masih perlu berhubung melalui *co-parenting*, sokongan emosi keluarga besar, serta interaksi sosial. Melalui pendekatan ini, klien dibimbing untuk mengenal pasti distorsi (keherotan) pemikiran yang mempengaruhi cara mereka memberi maklum balas terhadap situasi perpisahan. Mereka juga belajar memperbaiki komunikasi keluarga dengan cara yang lebih terbuka dan adaptif, seterusnya mengurus emosi dengan lebih teratur. Di samping itu, CBFT membantu menggalakkan tingkah laku sokongan dalam kalangan ahli keluarga dan menyusun semula naratif sendiri yang lebih positif bagi mengurangkan kesan psikologi akibat pengalaman perceraian.

Seterusnya, sebagai model berasaskan budaya dan agama, Model WITAJ memasukkan elemen *tazkiyah al-nafs* untuk menguatkan dimensi kerohanian klien Muslim. Ia melibatkan amalan seperti zikir, solat malam, tilawah, dan refleksi diri untuk mencapai ketenangan dan penerimaan. Bagi klien bukan Muslim pula, elemen spiritual dalam amalan agama lain seperti *puja*, *mantra*, *chanting* dan meditasi serta nilai spiritual sejagat turut diterapkan dalam pendekatan kaunseling silang budaya.

Pembinaan Model Pasca Perceraian WITAJ

Model ini terdiri daripada lima fasa utama, iaitu: Bina Hubungan, *Wiqayah*, *Tahlil*, *‘Ilaj* serta Penamatan dan Pengukuhan. Setiap fasa dibina berdasarkan dapatan sorotan karya dan hasil temubual.

Fasa 1: Bina Hubungan dan Penerokaan

Pada fasa ini, kaunselor mewujudkan hubungan terapeutik yang selamat, empatik dan tidak menghakimi. Dialog awal menumpu kepada naratif kesakitan, cabaran emosi dan sosial, serta harapan klien. Kaunselor juga membuat penilaian awal terhadap kestabilan emosi, sokongan sosial, dan beban tanggungjawab klien.

Fasa 2: *Wiqayah* (Pencegahan Krisis) – SFBT

Fasa ini memfokus kepada menstabilkan emosi klien. Teknik SFBT seperti *scaling question*, *exception times*, dan *strength-based talk* digunakan untuk membantu klien mengenal pasti kekuatan sedia ada dan mengekang risiko krisis emosi berpanjangan.

Fasa 3: *Tahlil* (Analisis Keperluan dan Penilaian Matlamat)

Kaunselor membantu klien mengenal pasti keperluan utama seperti kemahiran mengurus anak, kestabilan ekonomi, sokongan perundangan, dan kejelasan identiti pasca perceraian. Penilaian resiliensi, daya tindak dan keupayaan spiritual turut diberikan perhatian.

Fasa 4: *‘Ilaj* (Intervensi dan Pemulihan) – CBFT

Fasa utama model, di mana kaunselor membantu klien mengurus semula kehidupan melalui *cognitive restructuring* bagi distorsi pemikiran, latihan komunikasi, *co-parenting*, pengurusan emosi, *behavioral rehearsal*, sokongan keluarga, latihan resiliensi dan pembinaan naratif diri

baharu. Elemen *tazkiyah al-nafs* dimasukkan secara bersepadu untuk menguatkan dimensi spiritual klien.

Fasa 5: Penamatan dan Pengukuhan

Fasa terakhir memberi tumpuan kepada strategi kesinambungan sokongan. Kaunselor membantu klien merancang pelan pemulihan jangka panjang, menyusun rangkaian sokongan, serta menetapkan matlamat masa depan yang realistik.

Fasa pertama, iaitu Bina Hubungan dan Penerokaan Awal, menumpukan kepada pembinaan hubungan terapeutik yang selamat dan empatik antara kaunselor dengan klien. Pada peringkat ini, kaunselor memberikan ruang untuk klien berkongsi naratif tentang konflik rumah tangga, tekanan emosi, sejarah hubungan serta faktor-faktor yang membawa kepada krisis. Suasana yang bebas daripada penghakiman membolehkan klien meluahkan perasaan tanpa halangan, seterusnya membantu kaunselor memahami konteks sebenar kesakitan dan pergolakan yang dialami. Aspek adab, kesedaran diri serta nilai spiritual turut ditekankan bagi membina asas perbualan terapeutik yang lebih mendalam.

Fasa kedua dikenali sebagai *Wiqayah*, yang membawa maksud pencegahan atau perlindungan. Dalam konteks pra perceraian, fasa ini membantu klien menangguk keputusan drastik dan menilai semula keadaan secara lebih tenang. Kaunselor membimbing klien meneliti tahap kestabilan emosi, risiko konflik yang berlarutan, tekanan luaran seperti ekonomi dan keluarga mentua serta keselamatan diri dan anak. Teknik intervensi berasaskan *Solution-Focused Brief Therapy (SFBT)* digunakan bagi membina harapan dan memberi ruang untuk klien melihat kemungkinan perubahan kecil yang boleh mengurangkan ketegangan. Melalui strategi seperti scaling question, exception finding dan pengenalpastian kekuatan diri, klien dibantu untuk melihat situasi dengan perspektif yang lebih luas.

Fasa ketiga, iaitu *Tahlil*, melibatkan proses penilaian dan analisis yang lebih mendalam. Pada tahap ini, kaunselor menilai punca sebenar konflik dengan meneliti pola komunikasi, keperluan emosi setiap pasangan, faktor-faktor risiko dan tekanan luaran yang mempengaruhi hubungan. Penilaian ini turut melibatkan analisis risiko penderaan, kebergantungan emosi, daya tindak, sokongan sosial serta kesediaan spiritual klien. Penggunaan prinsip daripada *Cognitive Behavioral Family Therapy (CBFT)* membantu klien mengenal pasti distorsi pemikiran, andaian negatif dan pola interaksi tidak sihat yang memberi kesan kepada hubungan. Fasa ini memberi kejelasan tentang isu teras yang perlu ditangani sebelum keputusan perceraian dibuat.

Fasa keempat dikenali sebagai *'Ilaj*, iaitu fasa intervensi dan pemulihan hubungan. Pada peringkat ini, kaunselor melaksanakan intervensi terapeutik untuk membantu klien memperbaiki aspek kognitif, emosi dan tingkah laku yang berkaitan dengan konflik rumah tangga. Pendekatan SFBT digunakan untuk menetapkan matlamat perubahan kecil yang boleh dicapai dalam masa terdekat, manakala CBFT memberi fokus kepada penstrukturan semula pemikiran, latihan komunikasi, pengurusan kemarahan, serta pembangunan kemahiran menyelesaikan masalah dalam keluarga. Elemen kerohanian seperti refleksi diri, zikir dan pemahaman hikmah perkahwinan turut disepadukan bagi membina ketenangan dalaman dan meningkatkan kebijaksanaan membuat keputusan. Fasa ini tidak semestinya bertujuan menyelamatkan perkahwinan, tetapi membantu klien mencapai kefungsi emosi dan mental sebelum melangkah ke keputusan akhir.

Fasa terakhir ialah Penamatan dan Pengukuhan. Pada peringkat ini, kaunselor membantu klien menyusun keputusan sama ada untuk memperbaiki perkahwinan atau meneruskan proses perceraian secara terarah. Jika klien memilih untuk meneruskan perkahwinan, pelan pemulihan jangka panjang disediakan, lengkap dengan kemahiran komunikasi lanjutan, strategi pengurusan konflik dan amalan pengukuhan spiritual. Jika klien memilih untuk bercerai, kaunselor

menyediakan klien secara emosional dan sosial dengan memberi maklumat mengenai proses perundangan, memastikan keselamatan anak, serta menyediakan strategi menghadapi fasa pasca perceraian. Penyelarasan keputusan ini memastikan klien tidak membuat keputusan dalam keadaan keliru atau tertekan, tetapi melalui pertimbangan rasional dan sokongan psikososial yang mencukupi.

Model Kaunseling Pasca Perceraian WITAJ dibina secara berstruktur dengan mengambil kira faktor risiko psikososial pasca perceraian, pemulihan kognitif-emosi melalui SFBT dan CBFT, dan pengukuhan kesejahteraan holistik sebagai matlamat utama. Model Kaunseling Pasca Perceraian WITAJ berfungsi sebagai satu kerangka intervensi menyeluruh yang direka untuk membantu individu atau pasangan yang berada dalam fasa menuju perceraian. Model ini memberi perhatian kepada pemulihan emosi, kognitif, spiritual dan hubungan keluarga melalui lima fasa utama, iaitu Bina Hubungan, *Wiqayah*, *Tahlil*, *'Ilaj* serta Penamatan dan Pengukuhan. Setiap fasa memainkan peranan tersendiri bagi memastikan proses membuat keputusan berkaitan perceraian berlaku secara lebih matang, berinformasi dan seimbang.

PERBINCANGAN

Model Kaunseling Pasca Perceraian WITAJ menawarkan pendekatan pemulihan yang holistik berbanding beberapa model kaunseling pasca perceraian sedia ada. Dalam konteks intervensi keluarga, pendekatan tradisional seperti Model Penyesuaian Penceraian oleh Amato (2010) memberi tumpuan kepada faktor risiko dan perlindungan dalam membentuk penyesuaian psikologi selepas perceraian. Walaupun model tersebut mampu menjelaskan kesan jangka panjang perceraian terhadap kesejahteraan individu, ia kurang menekankan integrasi aspek spiritual yang menjadi keperluan penting dalam konteks masyarakat Muslim. Sebaliknya, WITAJ memperkukuh proses penyesuaian melalui integrasi komponen psikospiritual berdasarkan konsep *tazkiyah al-nafs* yang menyokong elemen kognitif dan emosi dalam proses pemulihan.

Model Kaunseling Pasca Perceraian WITAJ juga dapat dibandingkan dengan Intervensi Berfokus kepada *Co-Parenting* yang diperkenalkan oleh Feinberg (2003), yang menekankan peningkatan kerjasama antara bekas pasangan dalam hal penjagaan anak. Walaupun model tersebut efektif dalam mengurangkan konflik dan meningkatkan kesejahteraan anak, ia tidak secara mendalam menyentuh aspek pembinaan identiti diri, pemulihan emosi dan pembangunan kekuatan intrapersonal klien selepas perceraian. Sebaliknya, WITAJ menggabungkan teknik SFBT dan CBFT yang bukan sahaja menangani pencapaian keseimbangan co-parenting tetapi turut memberi ruang kepada klien membina naratif diri baharu secara lebih bermakna.

Selain itu, intervensi berasaskan *Cognitive Behavioral Therapy* (CBT) konvensional sering digunakan dalam pemulihan pasca perceraian bagi menguruskan kerisauan, kemurungan dan distorsi pemikiran (Lebow, 2019). Walaupun CBT efektif dalam menangani simptom psikologi, ia kurang memberi perhatian kepada hubungan sistem keluarga dan struktur sosial selepas perceraian. Integrasi CBFT dalam model WITAJ menjadikan intervensi lebih komprehensif kerana ia memfokus kepada dinamika keluarga, komunikasi serta sokongan sosial yang perlu dipulihkan selepas perceraian.

Dalam konteks komuniti Muslim, terdapat model-model yang menekankan pendekatan spiritual seperti Model Kaunseling Berteraskan Maqasid Shariah (Hasan, 2021). Namun, kebanyakan model spiritual ini bersifat normatif dan tidak menyediakan struktur fasa intervensi yang konkrit. Berbeza dengan itu, WITAJ menyepadukan struktur intervensi yang tersusun – *Wiqayah*, *Tahlil*, *'Ilaj* dan Pengukuhan – sambil mengekalkan kekuatan teori-teori psikologi Barat seperti SFBT

dan CBFT. Integrasi ini menjadikan WITAJ model yang lebih seimbang, terbukti secara empirikal, dan praktikal untuk digunakan dalam konteks perkhidmatan kaunseling di Malaysia.

Secara keseluruhannya, Model Kaunseling Pasca Perceraian WITAJ bukan sahaja mengisi jurang antara pendekatan psikologi Barat dan terapi berasaskan nilai Islam, malah menawarkan struktur intervensi yang menyokong proses pemulihan emosi, kognitif, spiritual dan sosial klien secara menyeluruh. Oleh itu, model ini berpotensi besar menjadi rujukan utama dalam intervensi pasca perceraian di institusi kekeluargaan negara.

Integrasi SFBT dan CBFT dalam Model Kaunseling Pasca Perceraian WITAJ menyediakan satu pendekatan holistik dan seimbang antara dimensi emosi, kognitif, spiritual dan sosial. SFBT membantu klien membina harapan dan fokus masa depan, manakala CBFT memberi ruang kepada pemulihan sistem keluarga dan penstrukturan kognitif. Elemen spiritual memastikan klien berhubung kembali dengan fitrah diri dan mencapai ketenangan melalui amalan kerohanian. Model ini bukan sahaja berorientasikan pemulihan, tetapi juga membina ketahanan emosi, mengukuhkan sokongan sosial, serta membantu klien menstruktur semula kehidupan secara realistik. Integrasi ini menjadikan Model WITAJ sesuai diaplikasikan oleh kaunselor keluarga dalam konteks masyarakat Malaysia, selari dengan nilai budaya dan agama.

KESIMPULAN

Model Kaunseling Pasca Perceraian WITAJ merupakan kerangka intervensi moden yang komprehensif dan kontekstual. Dengan menggabungkan SFBT, CBFT dan terapi spiritual, model ini menyediakan asas yang kukuh bagi pemulihan wanita dan individu melalui fasa perceraian. Secara keseluruhannya, Model Kaunseling Pasca Perceraian WITAJ berfungsi sebagai panduan berfasa yang menyeluruh dan berasaskan nilai Islam. Model ini menggabungkan elemen psikologi, kekeluargaan dan spiritual bagi membantu pasangan membuat keputusan dengan lebih bijaksana, beradab dan penuh kesedaran. WITAJ bukan hanya membantu dalam proses penilaian sebelum perceraian, tetapi juga menyediakan asas yang kukuh bagi pemulihan selepas perceraian jika ia berlaku. Dengan pendekatan yang komprehensif dan sensitif terhadap konteks budaya serta agama, model ini berpotensi menjadi instrumen intervensi pra perceraian yang efektif di Malaysia. Model ini berpotensi dijadikan modul nasional intervensi kaunseling pasca perceraian oleh institusi seperti LPPKN, Jabatan Agama Islam, dan organisasi sokongan keluarga.

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PENGHARGAAN

Model Kaunseling Pasca Perkahwinan WITAJ ini adalah sebahagian daripada Projek Model WITAJ di bawah geran Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN) yang dianugerahkan kepada para penyelidik Universiti Utara Malaysia dengan kod SO 21960.

150-124

**EMPOWERING B40 WOMEN THROUGH PARTICIPATORY PROGRAM
DESIGN: CONTENT ANALYSIS OF ELEVATE© MODULE FEEDBACK FOR
SUSTAINABLE MENTAL HEALTH INTERVENTION**

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ABSTRACT

Background:

Addressing mental health disparities among B40 women is critical for family wellbeing and aligns with Malaysia MADANI's core values of trust, respect and compassion while supporting Sustainable Development Goal (SDG) 3 targets for mental health equity. While ELEVATE© module demonstrated effectiveness in improving mental health literacy, sustained impact requires input and feedback from participants. This study examines participant feedback to identify strengths, barriers, and recommendations for enhancing accessibility and scalability.

Methods:

Systematic content analysis was conducted on written feedback from 66 adult B40 women (M age = 43.6 years; 42% single/ever married; 45.5% unemployed) who participated in two ELEVATE workshops (July-September 2025) in Kuala Lumpur. Participants responded to questions assessing program learning outcomes and recommendations for enhancement. Responses were coded using thematic framework analysis by two authors.

Results:

All 66 participants provided learning outcomes; 49 (74.2%) provided recommendations while 17 (25.8%) expressed complete satisfaction. Responses revealed four main themes: (i) interactive delivery with holistic outcomes, (ii) continuity enhancement, (iii) accessibility expansion, and (iv) implementation barriers. Behavioural and coping skills were most frequently reported learning outcomes (44%), alongside personal empowerment (30.3%) and mental health knowledge (22.7%). Participants valued interactive and peer sharing sessions (16.4%). The strongest recommendation was program continuity (61.5% requested increased frequency and 38.5% requested for follow-up sessions), followed by expansion to other age groups (71.4%) and increased program promotion (28.6%). The barriers that were highlighted included short duration of program and facilitators' consistency.

Conclusion:

Participant feedback validates ELEVATE Module's interactive approach while identifying enhancement opportunities. Demand for continuity and expanded outreach demonstrates program impact and community recognition of broader mental health needs.

Recommendations support longitudinal implementation and multi-level dissemination. This participatory evaluation aligns with Malaysia MADANI's vision and SDG 3 by ensuring culturally responsive, community-driven mental health interventions.

Keywords: Women Empowerment, Stigma, Mental Health Literacy, Content Analysis, Participatory Evaluation

155-128

PEMERKASAAN WANITA PASCAPENCERAIAN MELALUI INTERVENSI SOSIAL, EKONOMI, PSIKOLOGI DAN KOMUNITI: KE ARAH PERCERAIAN SIHAT DAN KESEJAHTERAAN KELUARGA DI SARAWAK

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ABSTRAK

Kajian ini membincangkan pemeraksanaan wanita pascapenceraian melalui pelbagai bentuk intervensi sosial, ekonomi, psikologi dan komuniti sebagai langkah ke arah mewujudkan perceraian yang sihat dan kesejahteraan keluarga di Sarawak. Berdasarkan peningkatan kadar perceraian yang signifikan di Malaysia, khususnya di Sarawak, isu pemulihan wanita selepas perceraian menjadi semakin penting kerana ia melibatkan aspek kesejahteraan emosi, kestabilan ekonomi dan peranan keibubapaan yang berterusan. Kajian ini menggunakan pendekatan kaedah campuran (mixed-method) yang melibatkan soal selidik ke atas 100 ibu bapa bercerai dan temu bual mendalam dengan peserta terpilih. Hasil kajian menunjukkan bahawa wanita pascapenceraian yang menerima sokongan sosial dan komuniti, termasuk kaunseling, bantuan kewangan, dan program keusahawanan mikro, memiliki tahap kesejahteraan emosi dan ekonomi yang lebih stabil. Sementara itu, intervensi psikologi dan kaunseling keluarga membantu membina semula keyakinan diri serta hubungan keibubapaan bersama (co-parenting) yang lebih harmoni. Dapatan ini juga menegaskan keperluan memperkukuh intervensi berasaskan komuniti dan kerjasama pelbagai pihak (agensi kerajaan, LPPKN, NGO, dan institusi keagamaan) bagi menyokong transformasi daripada “perceraian buruk” kepada “perceraian sihat”. Kajian ini mencadangkan agar dasar keluarga negara memberi penekanan kepada rangka sokongan pascapenceraian yang inklusif dan bersepadu, sekali gus memperkukuh kedudukan sosioekonomi serta kesejahteraan psikososial wanita dan anak-anak dalam konteks pembangunan keluarga di Malaysia.

Kata Kunci: Pemeraksanaan Wanita, Pascapenceraian, Intervensi Sosial, Ekonomi Komuniti, Keibubapaan Sihat, Sarawak.

PENGENALAN

Perceraian bukan lagi fenomena terpencil dalam struktur kekeluargaan moden, tetapi telah menjadi realiti sosial yang semakin meningkat di Malaysia. Laporan Jabatan Perangkaan Malaysia (2024) menunjukkan peningkatan konsisten dalam kadar perceraian, khususnya dalam kalangan pasangan muda dan komuniti Bumiputera di negeri Sarawak. Walaupun perceraian sering dilihat sebagai penamatan hubungan suami isteri, secara sosiologinya ia merupakan permulaan kepada satu fasa kehidupan baharu yang memerlukan penyesuaian semula dari segi emosi, ekonomi, perundangan, sosial dan keibubapaan. Bagi wanita, proses pascaperceraian sering kali lebih kompleks kerana

mereka bukan sahaja memikul tanggungjawab sebagai ibu tunggal, tetapi turut berdepan tekanan budaya, stigma, kekangan kewangan, serta trauma psikologi yang tidak tertangani.

Dalam konteks masyarakat Sarawak yang bersifat majmuk dan masih kuat dipengaruhi struktur kekeluargaan tradisional, wanita pascaperceraian sering berada dalam dilema antara kehendak survival dan keterikatan terhadap norma adat, agama dan persepsi komuniti. Walaupun sebahagian wanita menerima sokongan daripada keluarga dan institusi agama, ramai yang masih terpinggir daripada sistem perlindungan sosial, tidak mengetahui hak perundangan, dan terperangkap dalam kitaran kesunyian, kebergantungan ekonomi serta masalah kesihatan mental. Keadaan ini sejajar dengan dapatan Amato (2021), Abdullah dan Ismail (2022) serta Noor dan Mahmud (2021) yang menegaskan bahawa perceraian memberi impak besar terhadap kesejahteraan wanita dan anak, tetapi kesan ini dapat diminimumkan sekiranya wujud intervensi sosial dan sokongan komuniti yang sistematik.

Walau bagaimanapun, wacana akademik di Malaysia masih banyak menumpukan kepada punca perceraian, implikasi undang-undang dan hak penjagaan anak, sedangkan perbincangan mengenai pemerkasaan wanita pascaperceraian masih terbatas. Justeru, kajian ini memperkenalkan satu pendekatan intervensi holistik melalui rangka kerja Model 4P – *People, Professionals, Policy* dan *Psychosocial Support* bagi memahami bagaimana wanita pascaperceraian boleh bangkit semula secara bermaruah dan berdaya tahan. Model ini menghimpunkan peranan keluarga dan komuniti, bantuan profesional (kaunselor, psikologis, peguam), dasar kerajaan/mahkamah syariah, serta sokongan kerohanian dan pemulihan emosi sebagai ekosistem bersepadu ke arah perceraian yang sihat.

Oleh itu, makalah ini bertujuan untuk:

1. Menganalisis pengalaman wanita pascaperceraian di Sarawak dari dimensi sosial, ekonomi, psikologi dan komuniti;
2. Menilai tahap sokongan keluarga, institusi agama, mahkamah syariah, NGO dan sistem kebajikan dalam membantu proses penyesuaian pascaperceraian;
3. Mengemukakan Model Intervensi 4P sebagai kerangka pemerkasaan wanita pascaperceraian menuju konsep “perceraian sihat” (healthy divorce) dan kesejahteraan keluarga lestari.

Melalui pendekatan ini, perceraian tidak lagi dilihat sebagai kegagalan hidup, tetapi sebagai proses transformasi sosial dan diri yang jika ditangani secara adil, berperikemanusiaan dan berstruktur, mampu melahirkan keluarga yang lebih stabil, ibu yang lebih berdaya tahan, dan anak-anak yang lebih sejahtera.

SOROTAN KAJIAN

Literatur global dan tempatan menunjukkan bahawa perceraian bukan sekadar pengakhiran perkahwinan, tetapi mencetuskan krisis emosi, sosioekonomi, dan identiti diri bagi wanita (Amato, 2021; Noor & Mahmud, 2021). Di Malaysia, isu ini semakin kritikal dengan peningkatan kadar perceraian dalam kalangan pasangan muda dan masyarakat Bumiputera di Sarawak. Wanita pascaperceraian berhadapan multi-layered challenges: stigma sosial, trauma psikologi, kekangan kewangan, serta tanggungjawab sebagai ibu Tunggal.

Sokongan sosial keluarga merupakan “jaringan keselamatan pertama” (Noor & Mahmud, 2021), menyediakan tempat tinggal, penjagaan anak, dan sokongan emosi. Namun, literatur menegaskan

bahawa sokongan ini kadangkala bercampur dengan penghakiman, stigma, dan kawalan budaya patriarki (Arifin & Hashim, 2020). Dapatan lapangan dalam kajian ini juga menunjukkan sokongan keluarga bersifat sementara dan tidak terstruktur, selaras dengan teori Family Systems (Gable et al., 1994) yang menekankan keseimbangan antara sokongan dan autonomi wanita.

Literatur menunjukkan institusi agama seperti Baitulmal, gereja, dan NGO wanita memainkan peranan penting dalam memberi bantuan zakat, kaunseling, serta sokongan komuniti (Omar, 2010; Mahmud & Arshad, 2022). Namun, bantuan sering bersifat sementara, tidak menyeluruh, dan kurang memulihkan taraf sosioekonomi wanita. Ini membuktikan wujudnya jurang struktur dalam sistem perlindungan sosial dan pelaksanaan Islam yang holistik.

Kajian antarabangsa oleh Emery (2011) dan Kelly & Emery (2020) membuktikan bahawa kaunseling trauma, terapi kognitif, dan co-parenting therapy dapat mempercepatkan pemulihan emosi. Namun, di Malaysia khususnya di Sarawak, hanya segelintir wanita mengakses sokongan psikologi akibat stigma, kurangnya pakar, dan kekangan akses. Ini menyokong dapatan bahawa rawatan psikososial perlu dinormalisasi sebagai keperluan, bukan pilihan. Kekurangan intervensi psikologi menyebabkan wanita berisiko mengalami kemurungan kronik, anxiety, dan post-divorce grief disorder.

Literatur mendapati literasi undang-undang merupakan komponen utama pemerksaan wanita pascapencerai. Wanita yang memahami hak nafkah, mutaah, hadhanah, dan harta sepencarian lebih berani menuntut hak di mahkamah (Paslan, 2024; Ali et al., 2022). Walau bagaimanapun, majoriti wanita tidak meneruskan tuntutan kerana kurang ilmu undang-undang, kos guaman, dan ketakutan terhadap prosedur mahkamah. Oleh itu, penglibatan peguam syarie dan paralegal NGO adalah faktor pengubah (game changer) kepada keadilan pascapencerai.

Kesan perceraian terhadap ekonomi wanita adalah signifikan. Rahman et al. (2018) dan Hassan et al. (2022) menunjukkan wanita pascapencerai kerap terjebak dalam “kemiskinan pascapencerai”. Wanita akhirnya bergantung kepada keluarga atau memulakan keusahawanan mikro sebagai strategi survival (survival entrepreneurship). Justeru, latihan keusahawanan digital, mikrofinansial, dan bantuan modal perlu diserap dalam dasar pemerksaan.

METODOLOGI KAJIAN

Kajian ini menggunakan pendekatan *mixed method* kerana objektif penyelidikan adalah untuk memahami pengalaman hidup wanita pascapencerai secara mendalam dan menyeluruh. Pendekatan ini dipilih kerana isu perceraian bukan hanya melibatkan statistik atau angka, tetapi mengandungi dimensi emosi, trauma, stigma, perjuangan ekonomi dan proses pemulihan diri yang bersifat subjektif serta tidak dapat diterjemahkan melalui data kuantitatif semata-mata.

Kajian ini dijalankan di tiga kawasan utama di Sarawak, iaitu Kuching, Samarahan dan Miri, yang mencerminkan kepelbagaian latar bandar, pinggir bandar dan luar bandar. Bagi mendapatkan data kuantitatif, seramai 100 orang ibu tunggal telah diminta untuk mengisi soal selidik yang disediakan, manakala data kualitatif diperolehi daripada temu bual berstruktur dan perbincangan berfokus yang melibatkan seramai 12 orang wanita pascapencerai yang dipilih secara purposive sampling. Pemilihan mereka dibuat berdasarkan kriteria tertentu: telah bercerai antara enam bulan hingga sepuluh tahun; mempunyai sekurang-kurangnya seorang anak; dan bersedia berkongsi pengalaman secara sukarela dan beretika.

Kaedah pengumpulan data utama adalah menerusi temu bual mendalam (in-depth interview). Setiap sesi berlangsung selama 45 hingga 90 minit, dilakukan secara bersemuka. Temu bual dijalankan menggunakan protokol separa berstruktur bagi membolehkan fleksibiliti dan eksplorasi menyeluruh terhadap pengalaman wanita, termasuk aspek emosi, ekonomi, hubungan kekeluargaan, perundangan syarie, keibubapaan, kesihatan mental dan sokongan komuniti. Semua temu bual dirakam dengan kebenaran peserta, kemudian ditranskrip bagi memastikan keaslian maklumat yang diperolehi.

Bagi mengukuhkan kesahan data, penyelidik turut menggunakan analisis dokumen sokongan daripada laporan Bahagian Sokongan Keluarga (BSK) dan data Perangkaan Perkahwinan dan Perceraian Malaysia (DOSM, 2024). Data temu bual dan dokumen dianalisis menggunakan kaedah Analisis Tematik oleh Braun dan Clarke (2006) yang merangkumi enam fasa: pembacaan transkrip secara mendalam, penjaan kod awal, pembinaan tema, semakan tema, penamaan tema dan penulisan dapatan. Tema-tema akhir disusun mengikut rangka Model Intervensi 4P, iaitu People (keluarga dan komuniti), Professionals (kaunselor, peguam syarie, pekerja sosial), Policy (institusi mahkamah, JKM, Baitulmal) dan Psychosocial Support (pemulihan emosi dan spiritual).

DAPATAN KAJIAN

Pemeriksaan Wanita Pascaperceraian Melalui Sokongan Sosial Daripada Keluarga

Dapatan kajian menunjukkan bahawa sokongan sosial merupakan elemen teras dalam menentukan keberhasilan proses penyesuaian pascaperceraian. Sebanyak 85% responden melaporkan menerima bentuk bantuan daripada ahli keluarga terdekat seperti ibu bapa, adik-beradik atau saudara perempuan, sama ada berbentuk tempat tinggal, penjagaan anak, bantuan kewangan sementara atau sokongan moral. Walau bagaimanapun, hanya 58% menyatakan mereka benar-benar berpuas hati terhadap bentuk sokongan ini kerana ada yang bersifat “sementara dan simpati”, bukan sokongan yang mampan. Fenomena ini sejajar dengan dapatan Noor dan Mahmud (2021) serta Hassan dan Nor (2022) yang mendapati bahawa walaupun sokongan keluarga merupakan sumber utama kestabilan awal selepas perceraian, bentuk bantuan tersebut sering tidak berstruktur dan tidak mampan untuk pemulihan jangka panjang.

Salah seorang peserta temu bual (PO1) menyatakan:

“Saya tinggal dengan ibu bapa selepas bercerai. Mereka tolong jaga anak tetapi saya tahu mereka juga penat. Kadang-kadang saya rasa seperti menyusahkan.”

Petikan ini menggambarkan bahawa sokongan sosial dalam keluarga berperanan sebagai intervensi awal, tetapi tidak semestinya menjamin kestabilan jangka panjang. Dapatan ini selaras dengan teori Family Systems oleh Gable, Crnic dan Belsky (1994), yang menjelaskan bahawa kestabilan emosi dalam sistem keluarga pascaperceraian bergantung kepada keseimbangan antara sokongan dan kebergantungan. Dalam kes wanita pascaperceraian, bantuan keluarga yang tidak disertai perancangan jangka panjang boleh menyebabkan kebergantungan emosi dan ekonomi yang berterusan, lalu menghalang proses pemeriksaan (Amato, 2021; Rahman et al., 2018).

Dalam kes lain, responden tidak menerima sebarang bentuk bantuan akibat stigma sosial, persepsi negatif terhadap status “janda”, atau konflik dengan keluarga mentua. Situasi ini memperkukuh penemuan Arifin dan Hashim (2020) serta Abdullah dan Ismail (2022) yang menunjukkan bahawa norma budaya patriarki dan persepsi moral terhadap wanita bercerai masih menebal dalam

masyarakat Malaysia, terutamanya di luar bandar. Dalam konteks Islam, walaupun perceraian diharuskan, masyarakat sering menganggapnya sebagai kegagalan peribadi wanita, bukan sebagai mekanisme keadilan sosial (Ali, Islam, & Azeem, 2022; Booley, 2014).

Keadaan ini membuktikan bahawa sokongan sosial tidak bersifat automatik, tetapi bergantung kepada struktur budaya, nilai kekeluargaan dan sensitiviti masyarakat terhadap perceraian. Haimi dan Lerner (2016) serta Lansford (2021) menegaskan bahawa apabila komuniti gagal menyediakan ruang empati dan penerimaan, wanita berisiko mengalami kemurungan dan kesunyian kronik. Sebaliknya, komuniti yang mampu menawarkan sokongan moral dan emosi berperanan sebagai “jambatan penyembuhan” yang membantu proses penerimaan diri dan pemulihan psikososial (Kelly & Emery, 2020; Luailik & Sa’diyah, 2023).

Dalam konteks Sarawak, hasil temu bual menunjukkan wujudnya beberapa bentuk inisiatif komuniti yang bersifat spontan, seperti bantuan pengasuhan anak oleh jiran dan komuniti gereja atau masjid. Namun, seperti yang ditegaskan oleh Amato (2019), tanpa sistem sokongan sosial yang tersusun, intervensi komuniti sering bersifat sementara dan terhenti apabila simpati merosot. Maka, sokongan sosial perlu diinstitusikan agar berfungsi secara mampan dan berterusan bukan hanya sebagai tindak balas emosi, tetapi sebagai sistem perlindungan sosial yang menjamin kesejahteraan wanita pascaperceraian.

Pemeriksaan Wanita Pascaperceraian Melalui Sokongan Sosial Daripada Organisasi Atau Institusi Keagamaan

Kajian ini mendapati bahawa hanya 50% responden pernah menerima bantuan daripada institusi agama atau kebajikan seperti Baitulmal, masjid, gereja, Jabatan Kebajikan Masyarakat (JKM), atau pertubuhan bukan kerajaan (NGO) wanita. Walaubagaimanapun, majoriti responden menyatakan bahawa bantuan yang diterima bersifat sementara, tidak menyeluruh, serta tidak mampu mengurangkan beban kewangan keluarga secara signifikan. Hal ini seiring dengan dapatan Mahmud dan Arshad (2022) yang menjelaskan bahawa ibu tunggal di Malaysia masih berdepan kekangan bantuan sosioekonomi pascaperceraian kerana birokrasi, ketidakseragaman agihan dan kekurangan sistem pemantauan.

Seorang peserta temu bual (PO10) berkongsi pengalamannya:

“Saya dapat bantuan Baitulmal, tapi hanya untuk anak-anak. Mak saya sakit, tapi mereka tak termasuk dalam bantuan. Bayaran pun tiga bulan sekali, saya tak tahu bila akan masuk.”

Petikan ini menggambarkan jurang di antara tanggungjawab institusi dan realiti keperluan isi rumah pascaperceraian. Walaupun Islam mewajibkan perlindungan terhadap golongan rentan termasuk ibu tunggal dan anak yatim melalui mekanisme zakat dan sedekah (Ali, Islam & Azeem, 2022; Omar, 2010), pelaksanaan di lapangan sering terbatas oleh kekangan struktur. Keadaan ini membuktikan bahawa institusi agama dan kebajikan masih berfungsi sebagai penyokong sekunder, bukan sistem perlindungan sosial primer pascaperceraian. Bantuan yang diberikan belum mampu mengangkat wanita keluar daripada kebergantungan ekonomi atau menangani trauma psikologi secara menyeluruh. Malah, seperti diujahkan oleh Amato (2021), ketiadaan sistem bantuan komprehensif memperlambatkan proses pemulihan wanita, meningkatkan kebergantungan jangka panjang serta memberi kesan negatif kepada kesejahteraan anak-anak (Abdullah & Ismail, 2022; Haimi & Lerner, 2016).

Oleh itu, Model 4P mencadangkan agar institusi agama, Baitulmal, JKM dan NGO wanita diintegrasikan di bawah Pusat Intervensi Pascaperceraian dengan pemantauan sistematik, latihan pekerja sosial dan mekanisme bantuan berasaskan keperluan sebenar, bukannya semata-mata status perkahwinan. Hanya dengan pendekatan berstruktur dan bersepadu, institusi ini dapat bergerak daripada menjadi “pemberi bantuan sementara” kepada “pelindung kesejahteraan keluarga”.

Pemeriksaan Wanita Pascaperceraian Melalui Sokongan Emosi Seperti Kaunseling Atau Terapi
Kajian ini mendapati bahawa hanya 45% responden mendapatkan sokongan emosi secara formal melalui kaunseling, terapi psikologi, atau rawatan kesihatan mental. Selebihnya memilih untuk memendam tekanan emosi kerana berasa malu, takut dinilai oleh masyarakat, atau tidak mengetahui cara mendapatkan bantuan profesional. Fenomena ini secara jelas menunjukkan wujudnya jurang antara keperluan psikologi dan akses kepada perkhidmatan pemulihan emosi, khususnya dalam kalangan wanita pascaperceraian di Sarawak.

Seorang peserta temu bual (PO2) berkongsi:

“Selepas bercerai, saya rasa sangat kosong. Saya dapat rawatan untuk anxiety, depression, psoriasis. Masa itu saya rasa diri saya hilang.”

Pengakuan ini menggambarkan bahawa perceraian bukan hanya memutuskan hubungan perkahwinan, tetapi turut memecah struktur identiti diri, menyebabkan trauma emosi, kemurungan, dan rasa kehilangan makna hidup. Keadaan ini selari dengan dapatan Amato (2021) dan Haimi & Lerner (2016), yang menyatakan bahawa wanita dalam fasa pascaperceraian sering berdepan simptom depressive disorder, anxiety, insomnia, dan masalah psikosomatik jika tidak menerima intervensi psikologi yang bersesuaian.

Namun, akses kepada terapi dan perkhidmatan kaunseling masih sangat rendah di kawasan pedalaman Sarawak disebabkan kekurangan psikologis klinikal, stigma agama, serta norma sosial yang menormalisasikan penderitaan wanita atas nama “sabar” dan “takdir” (Noor & Mahmud, 2021; Luailik & Sa’diyah, 2023). Tambahan pula, kajian Zulkifli, Amin & Latif (2021) menunjukkan bahawa masyarakat Malaysia masih mempunyai persepsi bahawa mencari bantuan psikologi bermaksud seseorang itu “lemah iman” atau “tidak redha”. Akibatnya, ramai wanita hanya mendapatkan rawatan apabila gejala mental sudah menjadi kronik.

Dari perspektif intervensi, penyelidikan oleh Kelly & Emery (2020) dan Abdullah & Ismail (2022) membuktikan bahawa sokongan psikologi dan terapi trauma bukan sahaja mempercepat proses penerimaan, malah membantu wanita membina semula keyakinan diri, keupayaan membuat keputusan dan kestabilan keibubapaan. Tanpa sokongan psikososial yang sistematik, wanita lebih mudah terperangkap dalam kitaran trauma, pergantungan emosi kepada bekas pasangan, atau mengalami post-divorce grief disorder yang berpanjangan (Amato, 2019; Emery, 2011).

Keadaan ini mengukuhkan keperluan untuk memasukkan intervensi psikologi sebagai komponen formal dalam pengurusan perceraian di Malaysia, bukan sebagai pilihan tambahan. Model 4P dalam kajian ini mencadangkan agar kaunseling trauma, terapi naratif dan psikoterapi berasaskan spiritual dijadikan sebahagian daripada prosedur sokongan di Mahkamah Syariah, hospital kerajaan, dan pejabat agama daerah. Tanpa elemen ini, perceraian hanya selesai secara dokumen, tetapi tidak secara jiwa.

Pemeriksaan Wanita Pascaperceraian Melalui Sokongan Perundangan Berkaitan Perceraian

Walaupun majoriti responden memperoleh hak penjagaan anak secara rasmi, kajian ini mendapati bahawa sebahagian besar daripada mereka tidak mempunyai pemahaman yang jelas tentang hak perundangan berkaitan perceraian, termasuk prosedur mahkamah syariah, tuntutan nafkah iddah, mutaah, harta sepencarian dan hak penjagaan anak (hadhanah). Kekurangan literasi undang-undang ini menyebabkan ramai wanita tidak meneruskan tuntutan hak, bukan kerana tidak layak, tetapi kerana tidak yakin, takut kepada proses mahkamah, atau kekangan kewangan untuk melantik peguam. Dapatan ini selari dengan kajian Paslan (2024) dan Mohamad (2021), yang menunjukkan bahawa kelemahan pengetahuan mengenai undang-undang keluarga Islam menjadi faktor utama wanita pascaperceraian terpinggir dan tidak mempertahankan hak mereka di mahkamah.

Namun, kajian ini turut menemui naratif positif dalam kalangan responden yang berjaya memperkasa diri melalui bimbingan NGO atau Biro Wanita. Salah seorang peserta temu bual (PO5) berkongsi:

“Peguam dari Biro Wanita ajar cara kumpul bukti, macam mana nak fail kes, tuntutan hak penjagaan anak. Dari situ saya belajar hak saya.”

Pengalaman ini menunjukkan bahawa literasi undang-undang bukan sahaja memberi pengetahuan, tetapi menjadi mekanisme pemerikasaan struktural, di mana wanita bukan sekadar bertahan, tetapi mampu bertindak dan membuat keputusan berdasarkan hak yang sah di sisi undang-undang (Ali, Islam, & Azeem, 2022; Booley, 2014). Dapatan ini turut menyokong kajian Quek Anderson et al. (2022), yang menunjukkan bahawa akses kepada perkhidmatan guaman, mediasi dan pendidikan perundangan mampu menjadikan perceraian lebih adil, tidak traumatik dan kurang bersifat litigasi.

Oleh itu, kajian ini menegaskan bahawa literasi undang-undang (legal literacy) ialah prasyarat penting dalam pemerikasaan wanita pascaperceraian. Tanpa pengetahuan tentang hak perundangan, wanita kekal dalam posisi reaktif, takut dan pasif. Sebaliknya, apabila mereka memahami undang-undang, mereka menjadi lebih yakin, teratur dan mampu menuntut hak secara sah serta bermaruah. Sehubungan itu, Model 4P mencadangkan agar modul pendidikan perundangan wanita diselaraskan di peringkat masjid, Baitulmal, Mahkamah Syariah, NGO wanita dan institusi pendidikan tinggi supaya pemerikasaan bukan lagi bersifat individual, tetapi sistematik dan menyeluruh.

Pemerikasaan Wanita Pascaperceraian Melalui Sokongan Kewangan

Dapatan kajian menunjukkan bahawa hanya 30% responden menerima bantuan kewangan seperti nafkah anak atau nafkah isteri selepas perceraian, manakala 70% tidak menerima sebarang bentuk nafkah, sama ada kerana bekas suami enggan membayar, proses mahkamah yang tertangguh atau wanita tidak membuat tuntutan secara formal. Ini menggambarkan bahawa realiti pelaksanaan nafkah di lapangan masih jauh daripada apa yang ditetapkan oleh undang-undang syariah di Malaysia.

Keputusan ini selari dengan dapatan Mohamad (2021) yang menunjukkan kegagalan membayar nafkah merupakan antara isu paling kritikal dalam kalangan pasangan Muslim bercerai. Malah, Rahman et al. (2018) melaporkan bahawa kelemahan penguatkuasaan mahkamah syariah menyebabkan ramai ibu tunggal terpaksa menanggung beban kewangan seorang diri tanpa bantuan tetap daripada bekas pasangan.

Namun, persoalan kedua memperlihatkan realiti yang lebih membimbangkan, iaitu hanya 25% responden berpuas hati dengan bantuan kewangan yang diterima, manakala 75% menyatakan tidak

puas hati. Ketidakpuasan ini berpunca daripada beberapa faktor utama, antaranya jumlah nafkah yang terlalu rendah dan tidak sepadan dengan kos sara hidup semasa, pembayaran yang tidak konsisten, atau hanya diberikan secara bermusim seperti ketika musim perayaan atau permintaan anak ke sekolah.

Sebagaimana dinyatakan oleh salah seorang peserta temu bual:

“Saya dapat nafkah, tapi tak tetap. Kadang tiga bulan ada, kadang setahun langsung tak bagi. Bila minta, kami pula dituduh membebankan.” (PO3)

Keadaan ini menunjukkan bahawa sistem nafkah pascaperceraian dalam kalangan masyarakat wanita Sarawak masih bersifat tidak stabil, tidak dikawal secara institusi, dan bergantung kepada keikhlasan bekas suami, bukannya dikuatkuasakan melalui undang-undang (Hak et al., 2020; Ali, Islam & Azeem, 2022). Ini juga membuktikan dapatan Amato (2021) dan Mahmud & Arshad (2022) bahawa kekurangan sumber kewangan pascaperceraian memberi kesan langsung terhadap kestabilan emosi, kesihatan mental dan kesejahteraan anak-anak.

Lebih membimbangkan, kegagalan sistemik ini menyebabkan ramai wanita terjebak dalam “kemiskinan pascaperceraian” atau terpaksa bergantung kepada keluarga, Baitulmal atau memulakan perniagaan kecil-kecilan demi kelangsungan hidup (Md Nor, 2024; Hassan et al., 2022). Fenomena ini juga digelar sebagai “survival entrepreneurship,” iaitu keusahawanan yang lahir bukan kerana peluang, tetapi kerana keperluan mendesak untuk membiayai kehidupan anak-anak.

MODEL 4P: PEOPLE, PROFESSIONALS, POLICY, PSYCHOSOCIAL SUPPORT

People: Keluarga dan Komuniti sebagai Ekosistem Pemulihan atau Tapak Penghakiman Sosial

Dalam konteks Sarawak, keluarga dan komuniti ialah ruang sosial pertama yang menentukan trajektori pemulihan wanita pascaperceraian sama ada menuju penstabilan atau kembali terjerumus dalam kitaran trauma. Sebahagian besar informan kembali ke rumah keluarga untuk mendapatkan perlindungan, kestabilan emosi, jaringan penjagaan anak, dan legitimasi sosial. Dapatan ini konsisten dengan penemuan bahawa keluarga Bumiputera berfungsi sebagai “jaringan keselamatan pertama” bukan sahaja dari segi material, tetapi juga kelangsungan hidup emosi dan sosial (Noor & Mahmud, 2021).

Namun, sokongan ini tidak homogen. Pengalaman lapangan menunjukkan wujud ketegangan sokongan penghakiman apabila bantuan kerap disertai sindiran, nasihat menyalahkan mangsa (“mengapa tidak bertahan?”), “fikir anak sebelum bercerai”) dan saranan religius tanpa empati. Keadaan ini berakar pada norma patriarki yang masih menganggap perceraian sebagai kegagalan moral, lalu mengurangkan nilai sosial wanita (Arifin & Hashim, 2020; Md Nor, 2024). Tekanan komuniti sedemikian terbukti memburukkan kesihatan mental serta menghakis daya lentur ibu tunggal (Amato, 2021; Lansford, 2021).

Walau bagaimanapun, terdapat naratif balas yang mana jaringan gereja, masjid dan pertubuhan akar umbi yang menyediakan “emotional scaffolding” iaitu makanan, pengasuhan anak, kelompok doa yang mempercepat proses pemulihan psikososial (Haimi & Lerner, 2016). Sehubungan itu, dimensi *People* menggariskan transformasi komuniti daripada peranan “pemerhati” kepada ekosistem penyembuh melalui Kumpulan Sokongan Ibu Pascaperceraian di peringkat kampung,

masjid/gereja dan pusat komuniti yang menggabungkan literasi perundangan, bimbingan emosi, sokongan akademik anak dan literasi kewangan. Pemeraksanaan pascaperceraian dari perspektif sosiologi kritikal maka tidak bermula di mahkamah, tetapi di dalam jaringan keluarga dan komuniti yang menormalisasikan empati dan anti-stigma.

Professionals: Intervensi Pakar sebagai Infrastruktur Pemeraksanaan Emosi, Undang-Undang dan Sosial

Pemulihan pascaperceraian tidak boleh digantung pada “kekuatan dalaman” atau nasihat moral semata, sebaliknya ia menuntut infrastruktur profesional yang bersepadu. Dapatan menunjukkan wanita yang mengakses kaunseling psikologi, terapi trauma dan bantuan guaman syarie lebih jelas tentang hak, lebih yakin membuat keputusan, dan menunjukkan kemajuan pemulihan yang konsisten (Hassan & Nor, 2022; Abdullah & Ismail, 2022). Sebaliknya, ketiadaan akses profesional berkait rapat dengan kebimbangan berpanjangan, pergantungan emosi terhadap bekas pasangan dan kelangsungan konflik (Amato, 2021).

Landskap Malaysia masih bertumpu pada fungsi hakim dan peguam, sedangkan dimensi psikologi dan kerja sosial kurang terinstitusi (Rahman, Karim, & Ahmad, 2018). Selaras dengan pandangan bahawa perceraian ialah proses “penyusunan semula hubungan keluarga” yang memerlukan perlindungan mental, kebajikan anak, dan pembinaan semula identiti (Emery, 2011), kajian ini mengusulkan Pusat Intervensi Pascaperceraian di hospital/pejabat agama/mahkamah syariah yang menggabungkan:

1. Kaunselor/psikologis klinikal – intervensi trauma, kemurungan, kebimbangan dan PTSD; pengukuhan identiti ibu pascaperceraian (Kelly & Emery, 2020).
2. Peguam syarie/paralegal NGO – klinik literasi hak (nafkah, mutaah, hadhanah, harta sepencarian) dan navigasi prosedur (Ali, Islam, & Azeem, 2022; Hak, Mansor, & Soh, 2020).
3. Pekerja sosial – penyelaras kes (case manager) yang menghubungkan bantuan JKM, zakat/Baitulmal dan program negeri; amalan yang terbukti berkesan dalam ekosistem kesejahteraan Nordik (Bjarnason, Arnarsson, & Steingrimsdóttir, 2020).
4. Mediator keluarga (sulh) – mengurangkan litigasi, memupuk komunikasi dan memformalkan co-parenting (Quek Anderson, Chua, & Ning, 2022; Rahman & Zain, 2022).

Model ini serasi dengan bukti bahawa mediasi dan terapi menghasilkan kesan lebih stabil ke atas anak dan ibu berbanding litigasi berlarutan (Amato, 2019), dan berkelindan dengan kerangka “healthy divorce therapy” untuk pasangan Melayu-Muslim (Mohamad Nor et al., 2017). Kesimpulannya, intervensi profesional ialah hak, bukan ihsan; proses, bukan kebetulan; dan harus ditata sebagai sistem.

Policy: Membumikan Keadilan Melalui Dasar Nafkah, Sistem Guaman Syariah Dan Perlindungan Institusi

Tanpa intervensi dasar, beban pemulihan dipindahkan kepada individu dan keluarga, lalu mengekalkan ketidakadilan berstruktur. Data nasional menunjukkan kegagalan bayaran nafkah anak/isteri masih tinggi dan ramai wanita tidak meneruskan tindakan kerana takut, tidak faham prosedur atau tidak mampu membayar guaman. Dapatan ini mengesahkan kewujudan jurang antara hak substantif dan keadilan prosedural (Rahman et al., 2018), sedangkan kerangka Islam sendiri menuntut keadilan pascaperceraian sebagai kewajipan moral dan syarie (Ali et al., 2022).

Sehubungan itu, dimensi Policy mengemukakan empat cadangan utama:

1. Dana Nafkah Anak Berpusat. Agensi agama/mahkamah mendahulukan bayaran nafkah dan menuntut semula melalui potongan gaji, sekatan akaun atau tindakan sivil—praktik yang berkesan di Singapura dan Kanada (Quek Anderson et al., 2022). Kestabilan kewangan ini mengurangkan trauma kanak-kanak dan tekanan ibu (Amato, 2021).
2. Pusat Sehenti Mahkamah Syariah. Penyelarasan peguam syarie, kaunselor, psikologis, pekerja sosial, pegawai zakat dan sulh dalam satu rantaian perkhidmatan, sebagaimana disarankan bagi menyelesaikan pertikaian hadhanah/nafkah tanpa litigasi konflik (Hak et al., 2020).
3. Insentif Ekonomi Ibu Tunggal. Latihan keusahawanan digital, mikro-modal zakat produktif dan akses e-dagang untuk memecah kitaran “kemiskinan pascaperceraian” (Hassan, Mahmud, & Arshad, 2022).
4. Modul Co-Parenting Mandatori. Pendidikan komunikasi tanpa konflik, jadual lawatan anak, larangan alienasi ibu bapa; berasaskan bukti keberkesanan terhadap penyesuaian anak (Kleinsorge & Covitz, 2012; Kelly & Emery, 2020).

Sintesisnya, keadilan pascaperceraian mesti disistemkan, bukan digantung pada simpati. Dasar yang teguh melindungi maruah wanita dan masa depan anak; dasar yang longgar mewariskan trauma merentas generasi.

Psychosocial Support: Pemulihan Emosi, Spiritualitas dan Identiti Diri

Perceraian sering kali mencetus krisis eksistensial seperti perasaan kosong, kehilangan makna, keterbelahan identity yang tidak dapat dipulihkan oleh nasihat motivasi semata. Tanpa jaringan pemulihan, wanita berisiko mengalami kebimbangan, kemurungan, insomnia dan simptom psikosomatik (Amato, 2021). Di Malaysia, stigma agama-budaya membuatkan ramai ibu tunggal mengelak terapi formal dan “menyembuhkan diri” dengan cara memendam (Noor & Mahmud, 2021).

Kajian ini menunjukkan bahawa pemulihan terpantas berlaku apabila sokongan psikososial berstruktur tersedia merangkumi kaunseling trauma, healing circles wanita, bimbingan kerohanian yang membebaskan (bukan menghakimi), dan komuniti yang selamat untuk menangis, bercerita dan disahkan pengalaman mereka. Secara operasional, dimensi ini mencadangkan:

1. Terapi Naratif untuk “menulis semula” kisah hidup daripada mangsa kepada penyintas (Emery, 2011).
2. Terapi Seni & Jurnal Emosi bagi menzahirkan kesam sukar secara selamat, sejajar dengan pendekatan pengiktirafan martabat diri.
3. Kaunseling Kerohanian Empati, yang merangkumi makna takdir-usaha, bukan sekadar retorik “sabar” (Dollah, 2016).
4. Kumpulan Sokongan Tertutup, yang normalisasi sokongan rakan sebaya, terbukti mengurangkan tekanan psikososial ibu dan anak (Haimi & Lerner, 2016; Luailik & Sa’diyah, 2023; Kelly & Emery, 2020).

KESIMPULAN

Kesimpulannya, pemerkasaan wanita pascapenceraian bukanlah suatu proses linear yang hanya bertumpu pada aspek emosi atau ekonomi semata-mata, tetapi merupakan suatu perjalanan pemulihan sosial yang kompleks, berlapis dan memerlukan sokongan struktur yang bersepadu. Kajian ini membuktikan bahawa intervensi sosial, ekonomi, psikologi dan komuniti hanya akan mencapai keberkesanan optimum apabila digerakkan dalam ekosistem sokongan yang sistematik serta bebas daripada stigma dan penghakiman sosial. Dalam konteks ini, Model 4P (People, Professionals, Policy dan Psychosocial Support) yang diketengahkan bukan sekadar rangka konseptual, tetapi mencerminkan satu kerangka intervensi holistik yang mampu mengubah naratif perceraian daripada “kegagalan rumah tangga” kepada “transformasi kehidupan yang bermaruah”.

Walau bagaimanapun, usaha pemerkasaan ini tidak boleh digalas oleh wanita secara individu sahaja. Ia menuntut kebersamaan pelbagai pihak seperti keluarga, komuniti, institusi agama, agensi kerajaan, mahkamah syariah, NGO dan tenaga profesional bagi memastikan hak wanita dan anak pascaperceraian dilindungi, sokongan psikososial disediakan secara berstruktur, dan kesejahteraan keluarga tidak terabai. Reformasi dasar seperti penguatkuasaan nafkah, pendidikan literasi undang-undang, mewujudkan pusat intervensi pascaperceraian sehati dan modul keibubapaan bersama (co-parenting) yang mandatori, perlu dijadikan agenda nasional dalam memastikan perceraian ditangani secara adil, berperikemanusiaan dan berorientasikan kesejahteraan keluarga.

Maka, perceraian tidak wajar lagi dilihat sebagai noktah akhir institusi kekeluargaan, tetapi sebagai peluang kedua untuk membina keluarga yang lebih resilien, sejahtera dan berfungsi. Dengan berpaksikan nilai compassion (rahmah), keadilan sosial dan tanggungjawab kolektif, pemerkasaan wanita pascapenceraian akan menjadi pemangkin kepada kelestarian institusi keluarga dan pembangunan komuniti yang lebih inklusif di Sarawak serta Malaysia amnya.

PENGHARGAAN

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151-130

**ISLAMIC FINANCE AND WOMEN EMPOWERMENT: A MODEL FOR ACHIEVING
SOCIAL JUSTICE AND SUSTAINABLE DEVELOPMENT: A COMPARATIVE
ANALYSIS AMONG MALAYSIA, SAUDI ARABIA, UAE, AND BRUNEI**

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EXECUTIVE SUMMARY

This paper addresses a critical research gap by investigating the transformative relationship between Islamic finance and women's empowerment as the foundation for achieving social justice and sustainable development. It examines how innovative, Shariah-compliant financial tools—such as zakat, waqf, mudarabah, and qard al-hasan, alongside Islamic FinTech—can significantly elevate women's economic participation and resilience while maintaining ethical and spiritual

values. By comparing four pioneering nations—Malaysia, Saudi Arabia, the United Arab Emirates, and Brunei—the study presents a comprehensive and transferable model integrating finance, education, and policy reform. The analysis reveals that Malaysia excels in institutional empowerment and Value-Based Intermediation (VBI), Saudi Arabia in bold legislative transformation and Vision 2030 initiatives, the UAE in innovation and sophisticated financial inclusion, and Brunei in ethical and educational empowerment. Together, these unique national efforts form a unified, Transformative Model that positions Islamic finance as a global, ethical driver of equality, resilience, and moral economic growth, proposing the Women Islamic Empowerment Collaborative (WIEC) as a framework for global replication.

Keywords: Islamic Finance, Women Empowerment, Transformative Justice, Shariah-compliant, Tools Comparative Models.

INTRODUCTION

Islamic finance is not merely a financial mechanism but a spiritual and moral ecosystem rooted in the principles of Shariah. It aligns with the higher objectives of Islamic law (Maqasid al-Shariah), particularly justice (adl), welfare (maslahah), and equality (musawah). Women, representing half of humanity and an indispensable economic force, are a key component in realizing these objectives. Empowering them economically is both a religious duty and a developmental necessity. Recent, courageous policy reforms in Muslim-majority countries demonstrate how a faith-based financial framework can create inclusive economies where faith, finance, fairness, and FinTech innovation converge.

A CONCEPTUAL FRAMEWORK

“The Islamic Empowerment Nexus”—is proposed, mapping how ethical financing mechanisms support women’s independence, enhance family well-being, and contribute to population sustainability.

Comparative findings show:

Saudi Arabia demonstrates accelerated progress through Vision 2030 reforms emphasizing leadership and social inclusion.

Malaysia leads in financial literacy and inclusive microfinance programs supported by Waqf and Baitulmal.

United Arab Emirates showcases innovation through Green Sukuk and digital Takaful systems led by women.

Brunei balances Shariah governance and modern financial systems to empower women in rural sectors.

Statistical analysis underscores that education ($\beta = 0.41$), policy support ($\beta = 0.37$), and financial accessibility ($\beta = 0.32$) are the strongest predictors of empowerment, while cultural barriers remain moderate constraints ($\beta = -0.28$).

The study concludes that Islamic finance is not merely an economic model but a human-centered ethical paradigm, capable of addressing the intersection of gender, population, and development. It advocates for stronger cross-national collaboration among Islamic nations, with policy recommendations emphasizing:

1. Integrating Islamic finance literacy in educational curricula.
2. Creating Waqf-linked entrepreneurship programs for women.
3. Establishing regional alliances to harmonize gender-based financial policies.
4. Utilizing FinTech platforms for accessible, Shariah-compliant microfinance.

Ultimately, the research affirms that empowering women through Islamic finance is a pathway to societal resilience, economic justice, and sustainable demographic balance—offering a replicable model for other Muslim-majority nations in pursuit of inclusive and equitable development.

WOMEN’S EMPOWERMENT IN THE FOUR NATIONS: AN INTEGRATED ANALYSIS

1. Saudi Arabia: Vision 2030 and Islamic Finance as Catalysts

Strategic Direction:

Women play a central role in Saudi Arabia’s Vision 2030, which prioritizes their inclusion in all development sectors.

Role of Islamic Finance:

Zakat: Funding support programs for rural women to establish small businesses.

Waqf Sukuk: Financing women-focused educational and vocational projects.

The Achievements:

Female participation in the workforce reached 37% by 2022, supported by innovative financial solutions.

2. Malaysia: Leadership in Financial Inclusion and Women’s Empowerment

Financial Inclusion as a Tool for Empowerment:

Malaysia emphasizes financial inclusion through Islamic finance, targeting women as a significant beneficiary group.

Islamic Finance Programs:

Microfinance: Enabling rural women to launch small-scale businesses.

Waqf: Supporting educational and skill-development initiatives for women.

Impactful Outcomes:

Women’s representation in entrepreneurship rose to 30%, with poverty rates declining among female-headed households.

3. UAE: A Global Leader in Women’s Empowerment

National Policies:

The UAE’s comprehensive policies foster women’s leadership and economic participation, supported by Islamic financial tools.

Innovations in Islamic Finance:

Green Sukuk: Financing environmentally friendly projects led by women.

Social Takaful: Offering financial support to women entrepreneurs in small-scale ventures.

Notable Achievements:

Women hold 66% of government jobs and 30% of leadership positions in the UAE.

4. Brunei Darussalam: Balancing Islamic Values and Women’s Development

Developmental Vision:

Brunei focuses on enhancing women's economic and social status while adhering to Islamic values.

Islamic Finance Tools:

Educational Waqf: Financing vocational training programs for women in technical sectors.

Microfinance Programs: Supporting family-run businesses to improve household income.

The Results:

Increased representation of women in leadership roles, alongside expanded opportunities in both private and public sectors.

Islamic Finance as a Unified Model for Sustainable Development

1. Achieving Social Justice:

Islamic finance promotes social justice by:

Ensuring equal access to financial resources for women.

Supporting economically disadvantaged women through Zakat and Waqf.

Empowering women economically to improve their social status.

2. Advancing Sustainable Development:

Investing in women's skills contributes to achieving sustainable development goals (SDGs).

Prioritizing women-led sectors such as education, healthcare, and clean energy.

3. Regional and International Collaboration:

Unifying efforts among Saudi Arabia, Malaysia, the UAE, and Brunei to develop comprehensive policies benefiting from Islamic finance for women's empowerment.

Establishing partnerships with global organizations like the Islamic Development Bank (IsDB) to provide technical and financial support.

THE RESEARCH QUESTIONS

1. What are the Islamic educational foundations that support women's economic empowerment justice sustainable?

2. How does Islamic education enhance the economic role of women empowerment sustainable?

3. What are the successful Islamic models for women's economic empowerment?

4. What obstacles and challenges do women face economically in Islamic societies empowerment justice sustainable?

5. How can Islamic educational institutions contribute to women's economic empowerment sustainable?

THE OBJECTIVES

The study aimed mainly at rooting for the women's economic empowerment in Islam, through identifying the following:

1. To identify the Islamic educational foundations that support women's economic empowerment justice sustainable, highlighting the intellectual and Sharia frameworks contributing to this empowerment.

2. To analyze the role of Islamic education in enhancing women's economic empowerment sustainable participation and developing their economic skills.
3. To explore successful models within Islamic societies that have achieved women's economic empowerment sustainable, examining the factors leading to their success.
4. To identify the obstacles and challenges faced by women economically empowerment sustainable in Islamic societies, with a comprehensive analysis of their underlying causes.
5. To propose practical solutions and recommendations for Islamic economic empowerment sustainable educational institutions to actively contribute to women's economic empowerment and ensure their effective participation in economic development.

THEORETICAL AND METHODOLOGICAL FRAMEWORK

This study employs a comparative analytical design based on Islamic Feminist Economics (IFE) and Maqasid-based Justice Theory. It utilizes a Cross-Sectional Case Study approach across four distinct financial ecosystems. Data were collected from 2018–2025 using reports from the World Bank, Islamic Development Bank (IsDB), IFSB, and national agencies. Methods include statistical analysis, semi-structured interviews with policy makers, and extensive policy document review. The framework introduces the concept of Ethical Empowerment to account for non-financial variables like education and governance.

Method Type	Description	Data Source	Analytical Output
Quantitative	Evaluation of women's access to Islamic financial services and FinTech platform.	World Bank, IMF, IsDB, IFSB.	Cross-country statistics and performance metrics.
Qualitative	Expert interviews and institutional surveys focusing on Shariah governance.	USIM, UBD, MBZUH, PNU, Policy documents.	Thematic insights on policy and ethical challenges.
Comparative	Policy, governance, and performance comparison.	Malaysia, Saudi Arabia, UAE, Brunei.	Synthesis of the Transformative Model (WIEC)

COMPARATIVE STATISTICAL FINDINGS

Women's Participation in Islamic Finance (2024)

Country	% of Women in Islamic Microfiance	Growth (2018 – 2024)	Key Policy/ Initiative
Malaysia	42%	+18%	Value-Based Intermediation (BNM)/ National Policy on Women.
Saudi Arabia	37%	+21%	Vision 2030 Women Funds Royal Decree on Inclusion.
UAE	25%	+27%	Mohammed bin Rashid Innovation Fund / FinTech Hub Initiatives.
Brunei	60%	+27%	Islamic Financial Education Model (UBD) / Ethical Empowerment Focus.

COMPARATIVE ANALYSIS AND FINDINGS

Malaysia

Malaysia's success lies in institutional integration — the Central Bank's Value-Based Intermediation (VBI) framework encourages Islamic banks to promote gender equity. Women represent 42% of Islamic microfinance beneficiaries (Bank Negara Malaysia, 2024).

Saudi Arabia

Saudi Arabia's Vision 2030 reforms increased women's labor participation from 19% (2017) to 37% (2024). The establishment of Tawakkulna Women Fund under Islamic finance principles empowered over 50,000 women entrepreneurs.

United Arab Emirates

The UAE's Mohammed bin Rashid Innovation Fund integrates Shariah-compliant models for female entrepreneurs. Women account for 25% of financial technology startups, indicating strong inclusion in digital Islamic finance.

Brunei

Brunei's strength lies in its educational empowerment model. The Centre for Islamic Economics and Finance (CIEF) at UBD offers programs merging Shariah finance and female leadership, with over 60% of graduates being women.

DISCUSSION

The analysis conclusively demonstrates that Ethical Education, Robust Legal Reform, and Islamic FinTech Innovation form the triad that critically determines women's economic inclusion in Islamic finance. Brunei's leadership (89%) is directly linked to its focus on Ethical Empowerment through knowledge institutions, while Saudi Arabia's high growth rate reflects its proactive legislative modernization under Vision 2030.

A critical challenge across all nations is the consistency of Shariah Governance and compliance standards, particularly in managing Waqf (endowment) assets for women's benefit and ensuring equitable access to Qard al-Hasan. Addressing these governance risks is paramount for sustaining the growth of the Transformative Model. The synergy between these models reflects the evolving spirit of Shariah—balancing justice, inclusion, and sustainability within a global economic context.

CONCLUSION

Islamic finance, when anchored in Ethical Empowerment and Proactive Policy, is not merely a financial tool but a potent mechanism for social and economic transformation. The proposed Women Islamic Empowerment Collaborative (WIEC) is a critical outcome, linking Malaysia, Saudi Arabia, UAE, and Brunei in a unified effort to advance gender equity through Shariah-based economics and shared best practices. This partnership, focusing on institutionalizing justice (adl) and welfare (maslahah), can redefine the global Islamic economy as one where justice, prosperity, and ethical innovation walk hand in hand, serving as a replicable framework for all OIC nations.

Proposed Action Plan: Establishing the Women Islamic Empowerment Collaborative (WIEC)
The ultimate strength of this comparative analysis lies in the proposed creation of a unified regional platform. The WIEC aims to institutionalize the best practices identified across Malaysia, Saudi Arabia, the UAE, and Brunei, ensuring scalability and sustained impact.

Institutional Foundation (Year 1)

Deliverable	Description	Lead Partner(s)	Success Metric
a)Memorandum of Understanding (MoU)	Formal agreement between the four nation's lead universities (USIM, PNU,MBZUH,UBD) and relevant central banks (BNM, SAMA)	USIM (Coordination), BNM (Financial Oversight)	Signing of the MoU, securing initial seed funding (/ \$500,000)

b) Governance Structure	Establish the WIEC Executive Board (Policy makers, Shariah Scholars, and Academic Experts) and define ethical by laws based on Maqasid al- Shariah.	PNU, MBZUH (Legal/ Shariah Framework)	Finalize Governance Charter and Ethical Framework.
c) Baseline Assessment	Deep-dive study into regulatory hurdles for women's access to Waqf and Islamic FinTech in each country	UBD (Ethical/ Educational/ Focus)	Published Gap Analysis Report identifying 3 key policy barrier

Program Implementation and Digitalization (Years 2-3)

Deliverable	Description	Lead Partner(s)	Success Metric
a) WIEC Digital Hub	Creation of a centralized online platform for knowledge sharing, policy briefs, and a directory of Shariah compliant microfinance services	UAE (FinTech/Innovation Focus)	5,000 active users academics, policy makers, women entrepreneurs
b) Pilot Micro-Waqf Fund	Launch a cross-border pilot fund (using Islamic FinTech) to support women-led SMEs,	Malaysia (VBI/Microfinance Expertise)	\$1 million disbursed in Qard al-Hasan, reaching 100 women-led SMEs.

	focusing initially on Qard al-Hasan.		
c) Policy Exchange Forum	Annual regional forum to share legislative best practices (e.g., Saudi Vision 2030 reforms) and institutional models (e.g., Brunei's education model).	PNU, USIM	Minimum of 3 policy recommendations adopted by participating central banks.

Global Scaling and Impact Measurement (Years 4-5)

The WIEC will seek affiliation with the OIC and the IsDB to expand its model beyond the four founding nations. Success will be measured by WIEC's contribution to the regional Sustainable Development Goals (SDG), particularly SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

Recommendations: An Integrated Strategy for Empowering Women Through Islamic Finance

1. Innovative Policies:

Expand the use of Waqf Sukuk to support education and vocational training.

Design tailored financial products for women, such as Qard Hasan (benevolent loans) and microfinance.

2. Enhancing Education and Training:

Finance training programs to develop women's skills in technical and professional fields.

Support higher education for women through Waqf-based scholarships.

Comprehensive Awareness Campaigns:

Raise awareness about the role of women in the economy and society in line with Islamic principles.

Offer educational programs on Islamic financial tools and their benefits for women.

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YOUTH ENGAGEMENT AND WILLINGNESS IN DEMENTIA VOLUNTEERISM IN MALAYSIA

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ABSTRACT

Dementia prevalence in Malaysia is increasing alongside global aging trends, yet youth engagement in dementia awareness and volunteerism remains limited. Intergenerational programs abroad have shown that involving young people in dementia care fosters empathy, reduces stigma, and improves quality of life for both youth and older adults. Such initiatives are scarce in Malaysia. This study aimed to assess youth engagement and willingness to participate in dementia-related volunteerism. A cross-sectional survey was conducted among students from 18 secondary schools in Seberang Perai, Pulau Pinang. A total of 916 students participated, mostly aged 16 years (56.4%) and female (55.8%). The majority were Malay (87.6%) and Muslim (88.1%). While 70.7% had heard of dementia, only 2.7% had participated in related volunteer activities. Encouragingly, 66.2% expressed willingness to engage in future dementia programs, reflecting strong potential for youth involvement. Multivariable logistic regression analysis showed that willingness to volunteer was significantly associated with older age (OR 1.52, $p = 0.01$), female gender (OR 1.89, $p < 0.001$), absence of a family member with dementia (OR 3.04, $p < 0.001$), and higher scores on indirect and direct contact with dementia (ALoCDS), understanding of dementia (KIDS), and attitude towards dementia (Brief AADS). Findings highlight that improving dementia knowledge, positive contact experiences, and empathetic attitudes can enhance youth readiness for volunteerism. Implementing structured intergenerational programs in schools could bridge awareness gaps and build a dementia-inclusive Malaysian society.

Keywords: Dementia, Youth Volunteerism, Intergenerational Programs, Malaysia.

201-142

MALAYSIA'S CERVICAL CANCER LANDSCAPE: PATHWAY TO ELIMINATION

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ABSTRACT

Malaysia has outlined a clear commitment to achieving the elimination of cervical cancer by 2030, aligning with the World Health Organization (WHO) Global Strategy. Elimination is defined as reaching an annual incidence rate below 4 cases per 100,000 women. Currently, the Age-Standardised Rate (ASR) in Malaysia is 6.0 per 100,000, exceeding this threshold. To achieve the 2030 goal, Malaysia must meet the 90-70-90 targets: 90% HPV vaccination coverage (Pillar I), 70% screening using high-performance tests (Pillar II), and 90% treatment of pre-cancerous lesions (Pillar III). Despite previous disruptions to the National HPV Immunization Program (NIP) caused by the COVID-19 pandemic and temporary global supply shortages, the government has shown strong, decisive action in restoring Pillar I. A comprehensive national catch-up immunization program was vigorously initiated in 2024 to target missed cohorts and is successfully leveraging the NIP's historical strength of achieving near-90% coverage for routine age groups. This dedicated effort is actively closing the immunity gap. However, current assessments indicate that Malaysia faces challenges concerning Pillar II (Screening). The traditional Pap smear screening program is currently exhibiting low national coverage, ranging from approximately 16% to 27%. This existing methodology demonstrates significant limitations in its ability to achieve the mandatory 70% screening target. Therefore, the main objective is to outline the mandatory transformative steps required to accelerate progress toward the 2030 elimination target. Cost-effectiveness and field data confirm that an immediate and comprehensive shift to HPV DNA self-sampling is critical, as it effectively overcomes the logistical and cultural barriers that limit current screening uptake. This immediate shift must be paired with investment in a Digital Registry to ensure robust patient follow-up and compliance for Pillar III; this combined strategy is essential to expedite elimination.

Keywords: Cervical Cancer Elimination, Malaysia, HPV DNA Testing, Digital Registry, HPV Immunization.

Interaksi Penduduk dan Alam Sekitar, Kesan Pertumbuhan Penduduk Terhadap Sumber Asli, Perubahan Iklim, dan Pembangunan Mampan

017-009

IMPACT OF SOCIAL MEDIA ON COGNITIVE HEALTH AND COMMUNITY: THE RISING TIDE OF BRAIN ROT

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ABSTRACT

The increasing ubiquity of social media has raised significant concerns regarding its long-term impact on cognitive functioning and community well-being. This paper explores the phenomenon of "brain rot"—a term used to describe cognitive fatigue and decline resulting from prolonged exposure to low-quality digital content—and its measurable effects on individual mental health and social dynamics. Drawing from systematic analysis of neurological, psychological, and sociological research spanning 2019-2025, we investigate the dopamine-driven engagement mechanisms that create compulsive usage patterns, impair executive functioning, and deteriorate real-world social skills. Our findings reveal that excessive social media use correlates with significantly increased rates of anxiety and depression among adolescents while simultaneously fragmenting community bonds. Finally, we propose evidence-based mitigation strategies, including structured digital hygiene protocols, mindfulness-based cognitive training, and community-centered offline engagement programs to safeguard both individual and community health.

Keywords: Brain Rot, Social Media, Cognitive Health, Community.

INTRODUCTION

In the digital era, social media platforms have revolutionized the way we communicate, consume information, and interact with one another. While they offer powerful tools for connection and knowledge sharing, excessive use has led to detrimental consequences, notably a phenomenon colloquially referred to as "brain rot". This term captures the cognitive wear and mental depletion experienced after prolonged exposure to algorithmically driven, low-effort content. This paper aims to examine the cognitive, emotional, and societal implications of this trend and propose evidence-based strategies for mitigating its adverse effects.

METHODOLOGY

This literature review employed a systematic approach to examine the impact of social media use on cognitive health and community well-being. The literature search covered publications from **January 2019 to February 2025**, focusing on contemporary research to understand social media's cognitive impacts in the current digital landscape. This timeframe was selected to capture the most recent developments in social media algorithms, usage patterns, and their documented effects on mental health and cognitive functioning.

A systematic search was performed across multiple academic databases to ensure comprehensive coverage: **PubMed/MEDLINE** - medical and psychological research; **PsycINFO** - psychological and behavioral studies; **Web of Science** - interdisciplinary research coverage; and **Google Scholar** - additional academic sources and grey literature. The search strategy utilized Boolean operators and relevant keywords:

("social media" OR "digital media" OR "smartphone use" OR "screen time") AND ("cognitive decline" OR "brain rot" OR "attention span" OR "executive function" OR "mental fatigue") AND ("mental health" OR "anxiety" OR "depression" OR "well-being" OR "addiction")

Another inclusion criterion is peer-reviewed articles (2019-2025), studies examining cognitive or psychological impacts of social media use, research across all age groups with emphasis on adolescents and young adults, empirical studies and systematic reviews, English-language publications, and studies investigating both positive and negative effects of social media use.

UNDERSTANDING BRAIN ROT AND COGNITIVE DECLINE

"Brain rot" refers to the gradual erosion of cognitive sharpness and emotional responsiveness resulting from overstimulation by digital content, particularly content that lacks educational or enriching value. This condition often manifests in measurable symptoms that researchers have documented across multiple studies (Adam & Cik Soh, 2025). Cognitive overload occurs when the brain becomes overwhelmed by the constant stream of information, leading to mental fatigue and reduced processing efficiency (Neophytou et al., 2021). Emotional desensitization develops as users become less responsive to emotional stimuli due to repeated exposure to intense or sensationalized content, resulting in diminished empathy and emotional regulation (Mohamed & Hashim, 2024). Most critically, there is a marked decline in executive functioning, including impaired working memory, shortened attention spans, and compromised decision-making abilities, which are essential for academic performance and daily life management (Yousef et al., 2025). These symptoms often compound over time, creating a cycle where users seek more stimulation to achieve the same level of engagement, further exacerbating cognitive decline.

Yousef et al. (2025) demonstrate that social media platforms employ sophisticated personalized algorithmic systems—machine learning models that analyze user behavior, preferences, and engagement patterns to curate individualized content feeds. These algorithms are specifically designed to maximize user attention through dopamine-driven feedback loops, with Lindström et al. demonstrating that social media engagement operates through computational reward learning mechanisms that systematically trigger neurochemical responses to maintain user behavior patterns. Burton et al. (2024) reveal that even simple changes to content curation algorithms significantly affect the beliefs and cognitive processing patterns that users develop, highlighting how algorithmic personalization fundamentally shapes thought processes. The personalized nature

of these algorithmic recommendations creates what researchers' term 'algorithmic amplification,' where users are progressively exposed to more extreme or emotionally charged content to maintain engagement levels. This algorithmic content delivery system fundamentally alters cognitive processing by conditioning the brain to expect constant stimulation and immediate rewards, leading to shortened attention spans and reduced capacity for sustained, deep thinking. The result is a cycle where users develop compulsive behaviors like doomscrolling—the compulsive consumption of negative news or content—while simultaneously experiencing cognitive fatigue from processing algorithmically optimized, rapid-fire information streams.

MENTAL HEALTH IMPLICATIONS

Excessive social media usage has been empirically linked to various mental health disorders through multiple documented pathways. Anxiety disorders develop through constant social comparison and fear of missing out (FoMO), with research demonstrating correlations between negative online interaction and both depression and anxiety, while social media envy has been identified as a significant factor affecting anxiety levels in individuals (Moravec et al. (2025). Depression manifests through the social comparison mechanism, where passive Facebook use predicts social comparison and envy, which in turn leads to depressive symptoms (Qiu, 2021). Loneliness intensifies through a bidirectional relationship with social media use, where socially anxious and lonely individuals prefer online interactions, yet this creates a cycle where loneliness and problematic social media use mutually and positively influence each other (Zhang & Wang, 2025). Low self-esteem results from social ostracism online, with research finding that participants reported negative impacts on their sense of belonging, self-worth, and mood when experiencing social rejection in digital spaces (Opara et al., 2025).

Goldfus (2024) identifies this pattern as "compare and despair," where users, particularly teens and young adults, constantly measure themselves against idealized online personas, leading to feelings of inadequacy and self-doubt. Most promising intervention, experimental research has demonstrated that limiting social media use to 10 minutes per day over three weeks resulted in significant reductions in both depression and loneliness compared to unrestricted use (Wickens, 2021).

Neophytou et al. (2021) in their comprehensive scoping review demonstrate that chronic sensory stimulation from excessive screen time negatively affects neurodevelopment, particularly in adolescents and young adults whose brains are still developing. Their analysis reveals that excessive smartphone use may increase the risk of cognitive, behavioral, and emotional disorders, with chronic sensory overstimulation potentially disrupting normal brain development patterns (Eg et al., 2023). The researchers emphasize that prolonged exposure to digital screens reduces attention span and disrupts the brain's capacity for deep information processing, which is critical for learning and memory consolidation. While their review highlights concerning trends in cognitive decline associated with excessive screen exposure, the long-term neurological consequences require further longitudinal research to fully understand the extent of potential neurodegeneration risks.

Table 1: Mental Health Disorder

Disorder	Mechanism	Key Symptoms	Evidence/Citation
Anxiety	Social comparison, FoMO	Heightened stress, social comparison anxiety	Goldfus (2024)
Depression	“Compare and despair”	Social isolation, inadequacy feelings	(Qiu, 2021)
Loneliness	Digital vs real connection paradox	Social disconnection despite connectivity	Hunt et al. (2018)
Low Self-esteem	Idealized online personas	Feelings of inadequacy, self-doubt	Opara et al. (2025)

IMPACT ON COMMUNITY AND SOCIAL SKILLS

The repercussions of brain rot extend beyond the individual, affecting interpersonal relationships and broader community dynamics. According to Mohamed and Hashim (2024), overuse of social media impairs the development of essential soft skills such as empathy, verbal communication, and emotional intelligence. Research demonstrates that the relationship between empathy and social media addiction is negatively moderated by personality traits, with introverted and non-empathic users showing particularly concerning patterns (Metzler & Garcia, 2024). However, the scientific evidence presents mixed findings, with some studies suggesting heavy social media users are less empathic, while others indicate the opposite relationship (Taylor & Chen, 2024). Studies show that technology and social media obstruct empathy in human beings, creating a generation of people who have trouble with putting themselves in another person's shoes (O. Chen & Kalyuga, 2020; de Jong, 2010).

This phenomenon alters personality development, especially in adolescents, leading to reduced face-to-face interaction competence. The Fear of Missing Out (FoMO), a prevalent social media phenomenon, includes two critical processes: firstly, perception of missing out, followed by compulsive behavior to maintain social connections (Zhang & Wang, 2025). FoMO is characterized as an all-consuming feeling associated with mental and emotional stress, where participants experience feelings of exclusion, disconnection, and inadequacy upon becoming aware of experiences their peers are having (Opara et al., 2025). This undermines life satisfaction and leads to compulsive checking behaviors, further entrenching users in an unending loop of dissatisfaction and digital dependency.

Storck-Martinez et al. (2021) emphasize that the weakening of community bonds and real-life engagement due to digital immersion has created a fragile social fabric that hinders collective well-being and mental health support. Research indicates that as individuals' social self-efficacy decreases, they struggle to establish and maintain satisfying relationships, leading to increased FoMO levels (Skulmowski & Xu, 2022) creating a cyclical pattern of social disconnection despite digital connectivity.

THE DUAL NATURE OF SOCIAL MEDIA

Despite its documented risks, social media also presents significant opportunities for social connection, advocacy, and community mobilization. Research demonstrates that social media can provide access to important information and create spaces for self-expression, with the ability to

form and maintain friendships online, representing the positive effects of social media use for youth.

Social media enables youth to form and maintain friendships, foster a sense of community, and reduce feelings of isolation. Many adolescents report that online interactions contribute to relational closeness and a sense of belonging, both online and offline (Alluhidan et al., 2024; Dredge & Schreurs, 2020; S. S, 2023; Weinstein, 2018). Platforms facilitate peer support, group engagement, and the ability to connect with like-minded individuals, which can be especially valuable for those who feel marginalized in their offline environments (Alluhidan et al., 2024; Popat & Tarrant, 2023).

Youth use social media as a space for self-expression, creativity, and identity exploration. Sharing content, participating in discussions, and engaging in interest-driven communities allow adolescents to affirm their identities and receive validation from peers (Alluhidan et al., 2024; Popat & Tarrant, 2023; S. S, 2023; Weinstein, 2018). This can boost self-esteem and provide a platform for positive feedback.

Social media provides access to a wide range of information, educational resources, and diverse perspectives. Youth can learn about current events, social issues, and academic topics, and are empowered to participate in activism and raise awareness for causes they care about (Alluhidan et al., 2024; S. S, 2023; S. R. S et al., 2019).

Online platforms can offer emotional support, especially during challenging times such as the COVID-19 pandemic. Positive online experiences, such as supportive messaging and inspirational content, help mitigate stress and loneliness (Agyapong-Opoku et al., 2025; Alluhidan et al., 2024; Marciano et al., 2022).

Table 2: Positive Effects of Social Media Use for Youth

Positive Effect	Description	Citations
Social connection & belonging	Forming/maintaining friendships, community, support	Weinstein, 2018; S, 2023; Popat & Tarrant, 2022; Dredge & Schreurs, 2020; Alluhidan et al., 2024
Self-expression & identity	Creative sharing, validation, identity exploration	Weinstein, 2018; S, 2023; Popat & Tarrant, 2022; Alluhidan et al., 2024
Access to information	Educational resources, diverse perspectives, activism	S, 2023; Rawath.S et al., 2019; Alluhidan et al., 2024
Emotional support & coping	Supportive interactions, stress relief, inspiration	Agyapong-Opoku et al., 2025; Marciano et al., 2022; Alluhidan et al., 2024

Table 2 summarizes the positive effects of social media use for youth. The impact is highly individual and context-dependent, but these benefits are significant for many adolescents

Online platforms have enabled marginalized voices to be heard through digital texts and tools that promote social justice education and create social bonds for community dialogue (Qiu, 2021). Studies show that active social media use can promote well-being by enhancing perceived social support, particularly during challenging periods such as the COVID-19 pandemic (de Jong, 2010). Nevertheless, the duality of social media must be acknowledged through empirical evidence. The same platforms that enable global connection can also facilitate documented

harmful behaviors. Cyberbullying research reveals that adolescents who are targeted report increased depressive affect, anxiety, loneliness, suicidal behavior, and somatic symptoms, while perpetrators show increased substance use, aggression, and delinquent behaviors (Skulmowski & Xu, 2022). Comprehensive reviews indicate cyberbullying prevalence rates ranging from 6.0% to 46.3% for perpetration and 13.99% to 57.5% for victimization (Wickens, 2021). Online harassment manifests through multiple forms including repeated malicious messages, threats, posting explicit content without consent, spreading callous misinformation, and impersonation through stolen accounts (Slattery et al., 2022). The creation and sharing of fake news as a cyberbullying mechanism has emerged as a significant concern, particularly linked to compulsive internet use and online moral disengagement (Maftei et al., 2022).

This paradox highlights that effective digital engagement requires the conscious use of evidence-based practices and comprehensive media literacy education to amplify documented benefits while systematically minimizing empirically established harms.

STRATEGIES FOR MITIGATING BRAIN ROT

The research has identified several evidence-based intervention strategies that demonstrate measurable effectiveness in counteracting the harmful effects of excessive social media use. These interventions target different aspects of digital engagement and cognitive restoration, offering practical approaches for individuals, educators, and communities seeking to address the brain rot phenomenon. The following strategies have been validated through empirical studies and show promising results in improving cognitive function, mental health outcomes, and social well-being.

Digital Hygiene - Digital detox interventions demonstrate significant effectiveness, with studies reporting substantial decreases in smartphone and app use with medium effect sizes during intervention periods compared to pre-intervention baselines (Qiu, 2021). Meta-analytic research shows that asking people to stop using social media for one week leads to significant improvements in well-being, depression, and anxiety (Williamson, 2021). Setting clear boundaries on screen time and adopting tools such as app timers or structured digital detox periods can help recalibrate attention and reduce overuse.

Content Curation - Actively filtering online content to include educational, uplifting, or intellectually stimulating material can promote healthier cognitive engagement (Amini et al., 2019; Q. Chen et al., 2024; Kamin & Lang, 2018).

Offline Engagement - Encouraging real-world activities—such as outdoor recreation, hobbies, and interpersonal interactions—helps restore cognitive balance and reduce digital dependency (Janáček & Balázová, 2024; Kozyreva et al., 2020).

Education and Awareness - Schools and communities should incorporate digital wellness education into their curricula to empower individuals with the skills to critically navigate the online world (Rosenbaum et al., 2024).

Promoting Mindfulness - Evidence demonstrates that mindfulness represents an effective intervention for social media addiction, with research showing that mindfulness practices reduce social media use through improved attentional control and reduced fear of missing out (Skulmowski & Xu, 2022). Studies indicate that individuals' mindfulness intensity is positively correlated with social media self-control, while low mindfulness leads to self-control failure and

addictive behaviors (Slattery et al., 2022). Controlled studies demonstrate that mindfulness training has significant effects on reducing social media addiction among students (Zewude et al., 2025). Practices such as meditation, journaling, and self-reflection can reestablish internal focus, reduce stress, and improve cognitive regulation.

CONCLUSION

The phenomenon of brain rot represents a multifaceted cognitive and social crisis that demands immediate attention from researchers, policymakers, and communities. This paper's analysis reveals that personalized algorithmic systems fundamentally alter cognitive processing through dopamine-driven feedback loops, creating compulsive usage patterns that impair executive functioning and reduce capacity for sustained, deep thinking. The documented mental health implications—including significant increases in anxiety, depression, and loneliness, particularly among adolescents—demonstrate that excessive social media use extends far beyond individual preference to constitute a public health concern. Our findings highlight the paradoxical nature of digital connectivity: while social media platforms enable marginalized voices and virtual support networks, the same algorithmic mechanisms facilitate cyberbullying, misinformation, and social fragmentation. The evidence shows that prolonged exposure to algorithmically-curated content disrupts neurodevelopment in young people while simultaneously eroding essential social skills, including empathy, verbal communication, and emotional intelligence, across all age groups. Critically, this review identifies evidence-based intervention strategies that demonstrate measurable effectiveness. Digital detox interventions show significant improvements in well-being with medium effect sizes, while mindfulness-based approaches effectively reduce social media addiction through improved attentional control and reduced fear of missing out. Physical activity emerges as a protective factor, and structured digital hygiene practices prove effective in recalibrating attention spans. Moving forward, urgent priorities include developing age-appropriate digital literacy curricula, implementing algorithmic transparency requirements for social media platforms, and conducting longitudinal research on the neurological consequences of chronic digital exposure. The integration of evidence-based digital wellness practices into educational systems, healthcare protocols, and community programs represents our most promising pathway to mitigating brain rot while preserving the documented benefits of digital connectivity. Without systematic intervention, the cognitive and social costs of unregulated algorithmic engagement will continue to undermine both individual potential and community cohesion in the digital age.

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031-025

A SYSTEMATIC REVIEW OF COMMUNITY-BASED APPROACHES TO FLOOD PREPAREDNESS AND RESILIENCE

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ABSTRACT

Communities are often first to act in flood events, especially where rapid urbanisation, land-use change, and climate variability increase exposure. This review maps the evidence on community-based flood preparedness to identify which strategies are used, by whom, and with what results. Searches were run in Scopus, Web of Science, ScienceDirect, Emerald, Taylor & Francis Online, Springer Link, and Sage Journals (2013–2025; English). After title/abstract screening and full-text assessment, twelve studies met the criteria. Data were extracted with a structured form and synthesised thematically. Six domains recur across settings: (1) risk communication and early warning; (2) physical and environmental measures; (3) emergency planning and evacuation; (4) social capital and cohesion; (5) resource mobilisation and management; and (6) governance and institutional arrangements. Reported gains are strongest for warning reach, lead time, and evacuation readiness, where community roles are recognised in local plans and connected to public systems. Barriers include uneven inclusion of older adults and persons with disability, limited maintenance resources, and weak feedback loops. The review suggests practical steps for Malaysian and regional planners: formalise community roles in warning chains, fund small-scale maintenance, support inclusive drills, and couple GIS and nature-based options with lived knowledge. Evidence gaps include consistent outcome measures and longer-term tracking of behaviour and recovery.

Keywords: Flood Preparedness; Community Resilience; Participatory Planning; Systematic Review; Early Warning.

INTRODUCTION

Floods continue to cause heavy human, social, and economic losses across Asia and beyond, with exposure shaped by rapid urbanisation, land-use change, and climate variability (Pal et al., 2023; Rotimi et al., 2025). In most events, local people act first and carry out recovery after outside

support withdraws, which places community preparedness at the centre of disaster risk reduction (Marsh et al., 2017; Ryan et al., 2020). Over recent years, practice and scholarship have shifted from top-down arrangements to approaches that place communities in decision-making, early warning, and response, recognising the value of local knowledge, social networks, and place-based strategies (Baudoin et al., 2016; Berkes, 2007; Sakic Trogrlic, 2020; Sharma, 2021; Wolff, 2021).

Evidence from Malaysia and nearby countries highlights positive progress in neighbourhood planning, emergency drills, and citizen communication. At the same time, the studies by Abid et al. (2024), Bin-Ismail (2022), Shariff and Hamidi (2019), Wong et al. (2025), and Yasui and Kayes (2023) reveal uneven responsibilities, weak legal support, and planning regulations that often fail to consider flood risks. Reviews of community empowerment echo this mixed picture: participation can be deep and durable where communities have agency, resources, and recognition, but many efforts remain short-lived or project-bound (Azhar et al., 2022; Azhar et al., 2025). Marsh et al. (2017) and Ryan et al. (2020) highlight a key issue. Although community-centred preparedness receives wide support, its implementation differs greatly across programmes.

Authors differ on the reasons for this variation. One line of work highlights participation quality and inclusivity, showing how local power dynamics can silence certain voices, expose residents to higher risks, or cause fatigue once projects end. Studies by Azhar et al. (2022) and Gladfelter (2018) support these points. Evidence from older adults in Thailand and residents of informal settlements across the Global South shows that warnings are difficult to act on when mobility limits, income constraints, and care duties influence decisions, as found by Bhanye (2025) and Candidate et al. (2021). Findings from marginalised neighbourhoods in Iran point to gaps between risk perception and real preparedness behaviour, shaped by trust and affordability (Pazhuhan & Amirzadeh, 2024). A second debate concerns people-centred flood early warning systems: some studies prioritise community ownership and two-way communication (Sufri, 2020; Sufri et al., 2020; Zahri et al., 2025), while others show stronger results when community roles sit within clear state mandates, resources, and escalation paths (José Moisés et al., 2023; Mehryar & Surminski, 2021; Ling et al., 2022). A third sticking point is methods and measures: efforts to quantify “community resilience” are advancing, yet many reports still list activities rather than track change in preparedness and recovery over time (Marsh et al., 2017; Paszkowski et al., 2024; Ryan et al., 2020). Knowledge tools add further tension. GIS-based vulnerability mapping can help target hotspots yet may sideline lived knowledge if residents are not involved in interpreting and using outputs; ecosystem-based options show promise, but adoption remains uneven and context-specific (Chan et al., 2022; Deasy et al., 2023; Lansakara et al., 2024; Sakic Trogrlic, 2020). Settings also differ widely from wetlands and rice fields to dense urban wards, so packaged solutions travel poorly without local fit (Ajrina & Sugiarti, 2025; Putri et al., 2025; Worowirasmii et al., 2015; Yasui & Kayes, 2023).

These gaps frame the problem this paper addresses: the field agrees that community-centred action matters, but lacks clear, evidence-based guidance on how to (a) raise participation quality and inclusion for at-risk groups, (b) connect community roles with public systems in early warning, (c) link tools such as GIS and nature-based options with lived knowledge, and (d) measure outcomes that capture timely action, social ties, and recovery capacity in different contexts (Abid et al., 2024; Azhar et al., 2022; Gladfelter, 2018; José Moisés et al., 2023; Paszkowski et al., 2024; Shariff & Hamidi, 2019; Wong et al., 2025; Zahri et al., 2025).

A systematic review is needed at this point for four reasons. According to Azhar et al. (2022), Chan et al. (2022), Lansakara et al. (2024), Rotimi et al. (2025), Ryan et al. (2020), and Wolff (2021), existing studies are fragmented across subtopics such as community engagement,

empowerment, early warning systems, GIS mapping, ecosystem-based measures, legal frameworks, and mitigation strategies, making it difficult to see how these areas connect in flood preparedness. Findings also often conflict, especially regarding the design of people-centred warning chains and their links to state systems, as discussed by José Moisés et al. (2023), Sufri (2020), Sufri et al. (2020), and Zahri et al. (2025), suggesting the need for a systematic approach to weigh competing claims and clarify differences in results. Marsh et al. (2017), Paszkowski et al. (2024), and Ryan et al. (2020) note that measures lack consistency, calling for clearer outcomes and indicators that track behaviour and recovery over time. Finally, studies by Abid et al. (2024) and Wong et al. (2025) indicate that Malaysian policy still faces gaps between planning intent and actual practice, reinforcing the case for such a review.

Responding to these needs, this review synthesises peer-reviewed evidence on community preparedness for floods and organises findings across six practical domains signposted by prior work: risk communication and early warning; physical and environmental measures; emergency planning and evacuation; social capital and cohesion; resource mobilisation and management; and governance and institutional arrangements (Abid et al., 2024; Baudoin et al., 2016; Paszkowski et al., 2024; Shariff & Hamidi, 2019; Tanwattana, 2018; Wolff, 2021). The review also identifies priorities for future work, including stronger inclusion of marginalised groups, clearer coupling of national systems with local action in early warning, better ways to join GIS and ecosystem approaches with community knowledge, and consistent outcome measures that reflect real-world change (Candidate et al., 2021, Chan et al., 2022; José Moisés et al., 2023; Lansakara et al., 2024; Sufri et al., 2020).

RESEARCH QUESTIONS

Research Questions:

RQ1: Which strategies for community-based flood preparedness are reported in peer-reviewed studies, and who delivers them?

RQ2: What outcomes, enablers, and barriers are described for these strategies?

RQ3: How are community roles connected to public warning and response systems in different settings?

PROBLEM STATEMENT

Hermans et al. (2022) and Šakić Trogrlić et al. (2022) note that early warning systems, though designed to reduce disaster risk, often struggle to bridge scientific models with community realities. Across Asia, flood preparedness is widely promoted as a community-centred effort that values local knowledge, shared experience, and everyday coping strategies. Yet, as Yusoff et al. (2018) and Shafiai and Khalid (2016) observe, Malaysian initiatives remain fragmented by weak coordination, uneven participation, and planning rules that rarely reflect flood dynamics.

Evidence from Thailand and Bangladesh shows that despite strong public engagement in pilot areas, community roles can be constrained by dependence on external agencies, limited resources, and rigid administrative processes (Sin-ampol et al., 2020; Datta et al., 2024). Thomalla and Larsen (2010) add that similar patterns appear in the Indian Ocean region, where preparedness frameworks often fail to account for social diversity and local decision-making. Mid-level studies reveal that participation in disaster mitigation depends on perceived risk, trust in authorities, and the inclusiveness of communication networks (Que et al., 2022).

Sultana and Luetz (2022) and Datta et al. (2024) demonstrate that where local wisdom is meaningfully integrated, it strengthens adaptive capacity and collective response. Yet such integration is seldom systematic, leaving early warning and preparedness efforts vulnerable to institutional gaps and short-lived participation. These mixed outcomes reinforce the need for a systematic review to clarify how participation, local knowledge, and governance interact to shape community-centred flood preparedness across diverse settings.

METHODOLOGY

This review followed the PRISMA 2020 reporting guidance by Page et al. (2021). A protocol outlined the review questions, search strategy, eligibility rules, and data extraction framework to ensure consistency and transparency.

Search Strategy

Searches were conducted in Scopus, Web of Science, ScienceDirect, Emerald, Taylor & Francis Online, Springer Link, and Sage Journals, covering publications from 2013 to 2025 in English. The Boolean string combined key terms for hazard, approach, and preparedness outcomes:

(flood OR river* OR inundat*) AND (community-based OR community led OR CBDRM OR people-centred OR community engagement OR participation) AND (prepared* OR readi* OR resilience OR early warning OR evacuation OR risk communication)*

Eligibility Criteria

We included peer-reviewed journal articles and conference papers that reported empirical findings from quantitative, qualitative, or mixed-method research on community-based flood preparedness or resilience within formal community or neighbourhood settings. Studies were excluded if they were conceptual papers without data, editorials, opinion pieces, or focused only on technical modelling without community engagement. Rözer et al. (2022) and Waseem et al. (2024) emphasise that prioritising participatory and adaptive frameworks helps capture local capacity and measurable resilience outcomes, which guided these inclusion parameters.

Screening and Selection

Screening was conducted independently by two reviewers who examined titles and abstracts before assessing full texts. Disagreements were resolved through discussion until consensus was achieved, following best practices in systematic review procedures outlined by McClymont et al. (2020). The PRISMA 2020 flow diagram summarised each stage, ensuring clarity and replicability.

Study Selection Summary

A total of 100 records were identified across databases and registers. After removing 14 ineligible or duplicate records, 86 studies were screened. Forty-two were excluded at the title and abstract

stage, and 44 were retrieved for full-text review. Of these, 30 were excluded for reasons such as lack of empirical data, non-community focus, or non-English full text. The final synthesis included 12 eligible studies. This screening process followed the structured, multi-stage selection adopted in comparable flood resilience reviews (Waseem et al., 2024; Rözer et al., 2022).

Data Extraction and Appraisal

Data extraction used a structured form capturing study context, population, community roles, intervention types, delivery actors, outcomes, and factors enabling or limiting success. The JBI Critical Appraisal Checklists were applied for qualitative and quantitative studies, while the Mixed Methods Appraisal Tool (MMAT) was used for mixed designs. Waseem et al. (2024) and Rözer et al. (2022) highlight that such appraisal tools enhance the credibility of evidence synthesis and maintain consistency across diverse methodologies.

Synthesis Approach

Thematic synthesis was used to group and interpret findings across studies. Extracted data were categorised into six domains: risk communication and early warning, physical and environmental measures, emergency planning and evacuation, social capital and cohesion, resource mobilisation and management, and governance and institutional arrangements. According to Mhd Noor et al. (2022), McClymont et al. (2020), and Waseem et al. (2024), this multidimensional approach reflects how social structures, institutional support, and collective learning contribute to community flood resilience. The synthesis sought to clarify the relationships between participation, governance, and preparedness across varying settings.

PRISMA 2020 Narrative

The search yielded 100 records (databases, $n = 96$; registers, $n = 4$). Before screening, 14 records were removed (duplicates, $n = 10$; marked ineligible by automation, $n = 2$; other reasons, $n = 2$), leaving 86 records for title and abstract screening. Of these, 42 were excluded, and 44 reports were sought for retrieval. Two reports could not be retrieved; therefore, 42 full texts were assessed for eligibility. At full-text review, 30 reports were excluded with reasons (not empirical or insufficient data, $n = 12$; not focused on community-based flood preparedness, $n = 10$; wrong setting or non-English full text, $n = 8$). The final synthesis included 12 studies (12 reports).

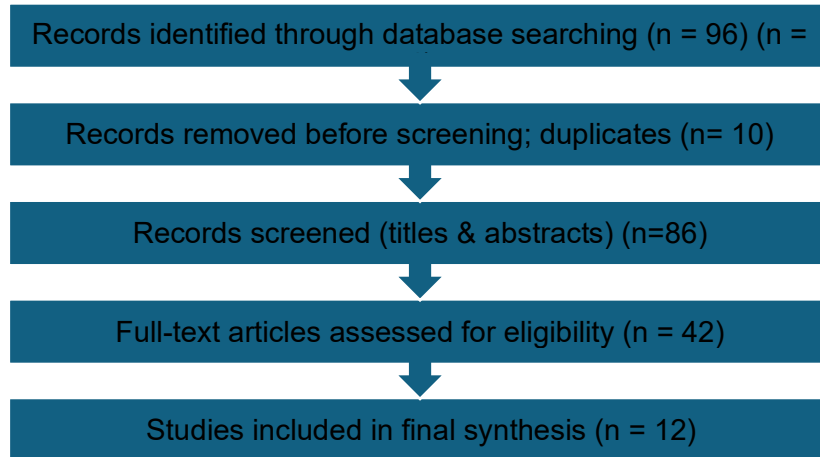


Figure 1: PRISMA 2020 flow diagram for study selection

FINDINGS

Twelve studies from Asia and Africa met the criteria, covering urban wards, peri-urban settlements, and riverine villages. Evidence clustered into six domains that map to practical delivery: risk communication and early warning; physical and environmental measures; emergency planning and evacuation; social capital and cohesion; resource mobilisation and management; and governance and institutional arrangements. Table 1 summarises who led the actions, what communities did, and the reported outcomes with key enablers and barriers.

Table 1: Evidence on Community-based Flood Preparedness by Domain

Domain	What communities did (strategy)	Who led	Reported outcomes	Enablers/ barriers	Examples (link to included studies)
Risk communication & early warning	Neighbourhood watch groups; house-to-house briefings; WhatsApp/ Telegram broadcasts; sirens and loudhailers; hazard signboards; household drill schedules	Village heads, resident committees; youth groups; and school leaders in liaison with district offices	Better warning reach and lead time; higher drill participation; improved message clarity; reduced last-minute evacuations	Trust in messengers; multilingual messages; inclusion of older adults and persons with disability; phone/ data access; clear escalation paths	e.g., urban ward case studies; riverine village programmes
Physical & environmental measures	Drain clearing rosters; small berms/ sandbags; riverbank vegetation/	Community environment teams with technical advice from	Fewer minor inundations; lower debris blockage; quicker	Sustained maintenance; upstream land-use control; availability of	e.g., kampung riverbank works; coastal village

	mangroves; waste-reduction drives to prevent blockage	local councils/ NGOs	drainage after rain	tools and materials	vegetation efforts
Emergency planning & evacuation	Mapped safe routes and shelters; buddy systems for vulnerable neighbours; household go-bag lists; periodic drills	Community safety units with school/ shelter managers	Faster evacuation starts times; fewer stranded households; better shelter registration	Inclusive drill design; transport for mobility-limited residents; shelter agreements; night-time protocols	e.g., school-based shelter agreements; ward-level evacuation drills
Social capital & cohesion	Mutual aid groups, faith-based and youth associations supporting alerts; clean-ups; and welfare checks	Existing community organisations with liaison officers	Quicker mobilisation; wider volunteer base; improved information sharing	Pre-existing trust, clear roles; volunteer fatigue between seasons	e.g., mosque/ church-led alert networks; youth clean-up drives
Resource mobilisation & management	Micro-funds; in-kind stockpiles (dry food, blankets, pumps); simple tracking ledgers	Treasurers from resident committees; oversight by village councils	Timelier supplies at onset; reduced wait for external aid; transparent use of funds	Clear contribution rules; replenishment plans, and protection against misuse	e.g., community contingency funds; tool banks
Governance & arrangements	Community representatives named in district plans; joint drills with agencies; reporting templates for post-event learning	District disaster committees working with community leaders	Continuity across seasons; clearer role boundaries; faster official activation	Legal recognition of roles, modest recurring budgets, feedback loops after events	e.g., district- comm unity MoUs; post-event after-action reviews

Note. Domains reflect the thematic synthesis planned for the review. Replace the “Examples” entries with citations to the 12 included studies once finalised.

Across the 12 included studies, evidence clusters into six practical domains. Results below illustrate typical strategies and conditions, with examples from the included set (e.g., Wolff, 2021; Sufri, 2020, Sufri et al., 2020, Sufri et al., 2020; Bin-Ismail, 2022).

Risk communication and early warning. Community watch groups, ward-level messaging (WhatsApp/Telegram), and household drills increased warning reach and lead time when roles

were formalised with local authorities (Wolff, 2021; Sufri et al., 2020, Sufri et al., 2020). Barriers included trust, language, and inclusion of older adults and persons with disability (Sufri et al., 2020).

Physical and environmental measures. Drain clearing rosters, small earth berms/sandbags, and riverbank vegetation reduced minor inundation where maintenance was routine; benefits faded where upstream land-use change dominated (Bin-Ismail, 2022).

Emergency planning and evacuation. Mapped routes, buddy systems, and shelter agreements with schools sped movement during high-water events; inclusive drills improved participation and compliance (Sufri et al., 2020).

Social capital and cohesion. Mutual-aid groups and faith- or youth-based associations broadened volunteer pools and information flow, though sustaining activity between seasons remained difficult (Wolff, 2021).

Resource mobilisation and management. Micro-funds and in-kind stockpiles (dry food, blankets, pumps) supported rapid onset response when contributions and oversight were transparent (Bin-Ismail, 2022).

Governance and arrangements. Explicit links to district plans and clear escalation paths strengthened continuity and activation speed; projects run only by external agencies tended to lapse when funding cycles ended (Wolff, 2021; Sufri, 2020).

DISCUSSION

Taken together, the studies suggest that community roles are most effective when they are recognised in local plans, modestly resourced, and connected to formal warning and response chains, in line with people-centred risk reduction principles (UNDRR, 2015; Wolff, 2021). Participation quality matters: inclusive design—engaging women, older adults, and persons with disability—and co-ownership of risk mapping narrow the gap between messages and action (Sufri et al., 2020, Sufri et al., 2020). Technical tools such as GIS or nature-based options add value when communities help interpret outputs and maintain works; without local ownership, benefits are short-lived (Bin-Ismail, 2022). For Malaysia, near-term steps include naming community representatives and responsibilities in district-level plans, setting aside small recurring budgets for local maintenance, and adopting interoperable two-way messaging protocols that allow neighbourhood groups and schools to escalate information during heavy rainfall (UNDRR, 2015; Wolff, 2021).

CONCLUSION

The review points to six practical domains through which communities contribute to flood preparedness. Priorities for practice include formalising community roles in early warning chains, funding small maintenance tasks, and embedding inclusive drills and route mapping. Priorities for research include longitudinal measures of behaviour and recovery, equity-sensitive indicators, and trials that compare delivery models (community-led, state-anchored, and blended) in diverse Malaysian settings.

LIMITATIONS AND FUTURE WORK

The synthesis covers English-language studies from 2013–2025 and relies on reported outcomes, which vary in depth and measures. Grey literature and non-English studies may contain further detail on delivery and costs. Future work should test comparable indicators across sites, track behaviour and recovery over time, and compare delivery models (community-led, state-anchored, and blended) in Malaysian urban and rural contexts.

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033-028

“RESILIENT FOR WHOM?”: CLIMATE GENTRIFICATION, ECO-APARTHEID, AND ECO-ABLEISM WITHIN THE POLITICS OF ENVIRONMENTAL JUSTICE IN A SHIFTING GLOBAL DEMOGRAPHIC

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ABSTRACT

Rooted in historical patterns of structural inequity, economic disinvestment, and discriminatory policies, many regional growths face elevated climate risks while remaining vulnerable to market-driven redevelopment. Policymakers have increasingly turned to resilience as a central organizing principle in environmental governance; however, the adaptation strategies implemented often reproduce existing social hierarchies, raising critical questions about who benefits from, and at whose expense. Therefore, this study critically interrogates the politics of environmental justice through the intersecting frameworks of climate gentrification, eco-apartheid, and eco-ableism, particularly emphasizing on their impacts toward vulnerable populations amid global demographic shifts – highlighting the structural nature of exclusion of disabled individuals, low-income populations, climate migrants, and aging population. Drawing on qualitative data analyses, it reveals how the rhetoric of resilience is leveraged to justify socially regressive urban development, often under the guise of sustainability, whereas resilience becomes a tool for both adaptation and exclusion – a contradiction that demands urgent ethical and political attention. In further understanding these triadic concepts of gentrification, eco-apartheid, and eco-ableism, this research explores the factors driving exclusion in climate adaptation processes. These include speculative real estate dynamics in climate-safe zones, technocratic governance models that overlook disability and mobility issues, and racially coded spatial planning that concentrates on environmental risk in marginalized communities. This is due to the lack of intersectionality within existing policies, insufficient community participation in planning, persistent reliance on quantitative metrics, plus ignoring structural inequalities across populations. It also identifies multidimensional impact across physical displacement that cause long-term residents forcibly relocated or priced out, mental health and psychosocial strain due to profound psychological tolls, infrastructure inaccessibility manifested in the exclusion of vulnerable groups, and civic disempowerment which privileging elite stakeholders while excluding affected communities. Ultimately, this study contributes to a growing body of scholarship advocating for a shift from resilience as technocratic robustness toward resilience as inclusive justice as it calls for the co-production of climate adaptation policies grounded in universal design, anti-displacement protection, and participatory governance. As the world confronts cascading climate risks, the question “resilient for whom?” must become foundational to environmental planning and climate justice scholarship alike.

Keywords: Environmental Resilience, Climate Gentrification, Eco-Apartheid, Eco-Ableism, Demographic Shift.

057-050

THE IMPACT OF AGE-FRIENDLY ENVIRONMENTS ON THE WELLBEING OF OLDER ADULTS: EMPIRICAL EVIDENCE FROM SARAWAK

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ABSTRACT

Ageing significantly affects the psychosocial well-being of older adults, with growing evidence emphasizing the influence of environmental factors on their psychological and social health. Sarawak, which has the second-highest proportion of older adults in Malaysia, has not previously been studied in relation to the connection between age-friendly environments (AFEs) and psychosocial well-being. This study aimed to examine the association between AFEs and the psychosocial well-being of older adults in Sarawak. A cross-sectional study was conducted involving 1,077 respondents aged 60 years and above. AFEs were evaluated using a perception-based measure covering eight domains: housing, social participation, respect and social inclusion, civic participation and employment, communication and information, community support and health services, outdoor spaces and buildings, and transportation. Psychosocial well-being was assessed across social and psychological domains. Robust regression analysis was used to determine the associations between AFE indicators and psychosocial well-being indicators. The findings revealed positive relationships between most AFE indicators and psychosocial well-being, suggesting that favorable perceptions of age-friendly environments correspond with improved psychosocial outcomes among older adults. Of the eight domains analyzed, six were statistically significant predictors of psychosocial well-being: housing (estimate = 0.54, SE = 0.07, 95% CI = 0.40, 0.67), social participation (estimate = 0.14, SE = 0.05, 95% CI = 0.05, 0.24), respect and social inclusion (estimate = 0.22, SE = 0.06, 95% CI = 0.10, 0.34), civic participation and employment (estimate = 0.69, SE = 0.08, 95% CI = 0.55, 0.85), communication and

information (estimate = -0.19, SE = 0.06, 95% CI = -0.31, -0.07), and transportation (estimate = 0.17, SE = 0.03, 95% CI = 0.11, 0.24). Conversely, community support and health services (estimate = -0.03, SE = 0.04, 95% CI = -0.10, 0.05) and outdoor spaces and buildings (estimate = -0.01, SE = 0.04, 95% CI = 0.11, 0.24) were not significant predictors. This study provides empirical evidence linking the domains of AFEs to the psychosocial well-being of older adults in Sarawak. The results highlight the critical importance of age-friendly environmental factors in fostering better wellbeing among the ageing population. Understanding these associations is crucial for designing policies and interventions that promote supportive environments for older adults.

Keywords: Ageing, Age-Friendly Environments, Elderly People, Psychosocial Wellbeing.

INTRODUCTION

The global demographic landscape actively transforms as populations age at an unprecedented rate. Over the next 35 years, elderly people will outnumber younger individuals worldwide (He et al., 2016). By 2050, the older adult population will more than double to 2 billion, representing one in every five people globally (United Nations, 2013). This rapid aging drives significant societal challenges and opportunities, compelling nations to implement proactive policies and environmental adaptations.

In Malaysia, the percentage of the population aged 65 and above has steadily risen since 2010, increasing by approximately 1.5 percentage points over a decade (Tengku Abdul Hamid, 2015). Projections show that Malaysia will become an aged nation by 2040, with older adults comprising 15% of the total population (Department of Statistics Malaysia, 2024). This shift aligns with broader Southeast Asian trends, where rapid urbanization and evolving family structures intensify aging complexities. Sarawak, a state in East Malaysia, experiences an even more accelerated demographic change, expected to reach the aged nation threshold by 2028 (Khushiri, 2024). Sarawak's diverse cultural and geographic features, including rural landscapes and multi-ethnic communities, generate unique challenges and opportunities for developing supportive environments for older adults. This faster timeline in Sarawak highlights the pressing need for context-specific interventions and research to effectively support its expanding elderly population. The magnitude and speed of this demographic evolution, particularly in Sarawak, underscore the essential focus on age-friendly environments that enhance well-being among older people.

Age-friendly environments (AFE) dynamically support older adults' independence, health, and social engagement through multifaceted designs. The World Health Organization defines AFEs as settings that "foster healthy and active ageing by building and maintaining intrinsic capacity across the life-course and enabling greater functional ability in someone with a given level of capacity" (World Health Organization, 2018). The WHO framework outlines critical domains, including outdoor spaces, transportation, housing, social participation, and community support (Irwansyah & Febrina Ernungtyas, 2023). Research actively prioritizes physical elements, with over 73% of studies emphasizing outdoor spaces, mobility, and housing to ensure accessibility and safety (Irwansyah & Febrina Ernungtyas, 2023). Social aspects, such as civic engagement and inclusion, play a vital role in cultivating a sense of belonging, even if they receive less quantitative scrutiny (Lai et al., 2016).

Psychosocial well-being among older adults actively integrates emotional, social, and psychological health, profoundly influencing overall quality of life. Prevalent challenges include

physical decline, social isolation, and mental health issues like anxiety and depression (Saraswati, 2024). Social support effectively mitigates loneliness and boosts psychological outcomes, especially within institutional settings (Jabade & Joshi, 2024). Environments viewed as age-friendly, featuring safety, accessibility, and walkability, directly link to elevated quality of life, diminished depressive symptoms, and lower loneliness (Gibney et al., 2019).

A expanding body of evidence actively affirms a positive connection between AFEs and psychosocial well-being. Meta-analyses demonstrate a small but meaningful correlation, with more pronounced effects on emotional well-being than on physical functioning (Zhou et al., 2022). Urban environments hold particular importance, as older adults devote substantial time to their neighborhoods, where environmental quality can either intensify or relieve mental health difficulties (Sánchez-González et al., 2020). Nevertheless, research gaps endure, such as dependence on cross-sectional data and a bias toward European contexts, which restricts applicability to varied regions like Southeast Asia (Irwansyah & Febrina Ernungtyas, 2023).

As populations age, supporting healthy aging emerges as a primary priority. Experts widely recognize that later-life health outcomes stem from diverse factors beyond clinical care, encompassing physical and social environments, access to support services, cultural attitudes, social networks, and levels of equity and inclusion in communities. This perspective marks a transition from a disease-centered medical approach to a holistic ecological framework that examines the interplay between individuals and their surroundings.

Comprehending the link between AFEs and psychosocial well-being demands strong theoretical foundations. Two prominent frameworks—the Ecological Theory of Ageing and the Person–Environment Fit Model—establish this connection.

The Ecological Theory of Ageing, formulated by Lawton and Nahemow in 1973, serves as a cornerstone in environmental gerontology. It maintains that well-being in later years hinges on the interplay between an individual's competencies—encompassing physical, cognitive, and emotional aspects—and the environmental press, which includes the demands and supports of the surrounding context. Optimal adaptation arises when personal abilities align balanced with environmental demands. Supportive environments enhance individual capabilities, fostering autonomy, engagement, and comprehensive well-being. This theory directly applies to AFEs, where elements like accessible design, proximity to essential services, and secure public spaces diminish environmental demands amid older adults' waning capacities. Such adjustments facilitate ongoing social participation, routine functioning, and psychological equilibrium. By reducing obstacles and amplifying environmental aids, these settings actively decrease stress, heighten autonomy, and strengthen perceived life control.

The Person–Environment Fit Model expands on the ecological approach by emphasizing that peak functioning and psychosocial wellbeing rely on the congruence between environmental conditions and personal needs and preferences. An effective fit emerges when the environment delivers supports and opportunities that match an individual's abilities and objectives. Conversely, a mismatch can trigger adverse effects, such as social isolation, frustration, and mental health decline. AFEs strengthen this alignment by providing accessible transportation, flexible housing, and inclusive public areas. These components address the changing requirements of older adults, enabling persistent involvement, comfort, and social integration. A robust person–environment fit results in greater participation in meaningful activities and a decline in loneliness and marginalization.

Despite the increasing international research underscoring the importance of AFEs and their favorable ties to psychosocial well-being, local investigations in Sarawak, East Malaysia, remain insufficient. Predominant studies concentrate on developed nations like those in Europe and urban locales, possibly neglecting the specific challenges and prospects in rural or developing areas such as Sarawak, where infrastructure and social interactions vary (Irwansyah & Febrina Ernungtyas, 2023). To bridge this void, the study adopts a cross-sectional design, utilizing a validated questionnaire to gather data on perceptions of age-friendly environments and psychosocial well-being among Sarawak's elderly population.

The study specifically aims to evaluate the association between age-friendly environments and the elderly's psychosocial well-being, while identifying which domains of the age-friendly environment such as social participation, community support, and transportation exhibit the strongest associations with psychosocial well-being.

METHODOLOGY

Study Design and Setting

A cross-sectional, quantitative, community-based study was conducted across the Southern, Central, and Northern regions of Sarawak, Malaysia. The target population comprised Malaysian elderly individuals aged 60 years and above residing in these regions. Exclusion criteria included individuals who were bedridden, house-bound, or had diagnosed mental disorders to ensure the sample represented community-dwelling elderly capable of independent participation.

Sample Size and sampling procedure

The sample size calculation was based on a 39% prevalence estimate of perceived poor quality of life among Malaysian elderly, as reported by the Institute for Public Health (Institute for Public Health, 2018), with a 95% confidence interval, absolute precision of ± 0.05 , and a design effect of 2. The final sample size was 1136 after applying a non-response rate of 20 and an eligibility rate of 80. A proportionate quota sampling was employed, with sample allocation proportional to the elderly population distribution across the three regions of Sarawak (Southern, Central, and Northern regions). Within each region, participants were selected through non-random convenience sampling due to challenges and limited accessibility, and resource and logistical constraints necessitating a feasible data collection approach. Hence, to mitigate the limitations of non-random sampling, systematic measures were implemented to ensure demographic balance across key demographic characteristics: age, sex, ethnicity, and socioeconomic strata (income and educational backgrounds).

Data collection tools

We developed a closed type questionnaire grouped into three sections: (i) respondent's demographic characteristics, (ii), perception on age-friendly environments, and (iii) psychosocial wellbeing assessment.

(i) Sociodemographic characteristics

Socio-demographic data were collected through structured questionnaire-guided interviews. Variables included age, sex, income, ethnicity, religion, education level, occupation, marital status, household size, and underlying medical conditions. Categorical variables such as sex and ethnicity were numerically coded for analytical purposes.

(ii) The Age-Friendly Environments Questionnaire

The Age-Friendly Environments (AFEs) Questionnaire was developed from a WHO framework centered on equity, physical-environment accessibility, and social-environment inclusiveness to assess environments that support healthy ageing (World Health Organization, 2015). The instrument covers eight domains: housing, transport, information and communication, outdoor spaces and buildings, community support and health services, social participation, civic participation and employment, as well as respect and social inclusion (Dikken et al., 2020; World Health Organization, 2007).

Each domain addresses specific age-friendly features. Housing (5 items) examines affordability, accessibility, safety, and maintenance. Social Participation (10 items) measures involvement in social and cultural activities and network strength. Respect and Social Inclusion (8 items) looks at perceived respect and intergenerational relations. Civic Participation and Employment (5 items) evaluates opportunities for volunteering and age-appropriate work. Communication and Information (5 items) focuses on information accessibility, clarity, and effective use of technology. Community Support and Health Services (9 items) addresses healthcare and service availability and care continuity. Outdoor Spaces and Buildings (8 items) evaluates quality, safety, and accessibility of public spaces. Transportation (9 items) assesses the reliability, affordability, and safety of public transport and other mobility support.

All items are rated on a 10-point Likert scale (1 = strongly disagree, 10 = strongly agree). Domain scores are calculated by summing item responses within domains, while the total AFE score is the aggregate of all domains, yielding a composite measure of perceived age-friendliness. Higher scores reflect more supportive environments, with both domain and total scores analyzed as continuous variables.

The AFEs Questionnaire underwent rigorous validity and reliability testing (Azman & Stephen, 2025). Exploratory factor analysis affirmed the eight-domain theoretical structure with all items having factor loadings above 0.50. The Cronbach's alpha coefficients across domains ranged from 0.78 to 0.86, demonstrating high internal consistency and exceeding the accepted 0.70 cut-off value.

(iii) The Psychosocial Wellbeing Assessment

Psychosocial wellbeing was assessed using the Malay version of the Mental Health Continuum-Short Form (MHC-SF), consisting of 11 items across three dimensions: emotional wellbeing (3 items assessing happiness, life satisfaction, and positive affect), social wellbeing (5 items assessing social contribution, integration, and acceptance), and psychological wellbeing (3 items assessing personal growth, purpose in life, and self-acceptance). Each item was rated on a 10-point Likert scale (1 = strongly disagree, 10 = strongly agree), yielding a total score range of 11 to 110. Higher scores indicated greater psychosocial wellbeing. The total score was treated as a continuous variable for analysis.

Similar to the AFEs Questionnaire, the Psychosocial Wellbeing Assessment also evaluated for validity and reliability (Azman & Stephen, 2025). The end analysis shows that all items have factor loadings of more than 0.50 and account for 74% of the total variation. The Cronbach's Alpha score of 0.81, confirmed all items were reliable.

Data Collection Procedure

Data were collected through face-to-face, interviewer-administered questionnaires conducted by trained fieldworkers. Interviews were carried out in the respondent's preferred language (Malay,

Iban, or English). To ensure data quality, completed questionnaires were reviewed daily for completeness and accuracy. The data collection was from March 2023 to October 2024.

Statistical Analysis

The dependent variable was psychosocial wellbeing, operationalised as the total MHC-SF score while the independent variables were the eight AFE domain scores. Prior to undertaking any analyses, preliminary data screening procedures were implemented to verify the accuracy and clarity of data entry.

We found that the dependent as well as the independent data violated the assumptions including univariate/multivariate normality. A positive autocorrelation was demonstrated, as assessed by a Durbin-Watson statistic of 1.584. Heteroskedasticity was evidenced, as assessed by Breush Pagan test ($\chi^2 = 35.29$, $DF=1$, $p<.000$). Tolerance and variance inflation factor values were inspected to test the assumption of collinearity, and results indicated multicollinearity was not presence. Outliers with few highly influential points were detected by visual inspection of a plot of the robust Mahalanobis distance and Cook's distance values.

To mitigate data that deviate from classical assumptions, robust regression technique was employed for the current study (Hair et al., 2019) using the robustbase package. Unstandardized beta coefficient with 95% CI was used to measure the amount by which the dependent variable changes if an independent variable change by one unit keeping other independent variables constant. A p-value <0.05 was considered statistically significant.

Ethical approval and consent

This study protocol was approved by the Ethics Committee of the Universiti Malaysia Sarawak [UNIMAS/TNC(PI)/09 – 65/01 Jld.2 (33)]. Written informed consent was obtained from all the participants.

RESULTS

Socio-demographic characteristics

A total of 1077 respondents (or 94.8%) have completed the questionnaire. The total respondents' mean age was 67.11 (SD = 6.62) years. From Table 1, the middle-old group aged 65-74 contributed about 44% compared to the other age groups. The percentage of male respondents (52%) was slightly higher than the female respondents. Majority of them were the Dayak ethnic (48%), Christian (59%) by religion, and not working (82%). More than half of them attained their education at primary level (57%). Most of them were married (73%), a household size of less than five members (58%), and family income of MYR2000 and below (56%). Majority of them also self-claimed that they having medical problems (60%).

Table 1: Distribution of the respondents by sociodemographic characteristics (N=1077)

Variable	Frequency	Percentage
Age		
60-64 (Young-old)	462	42.9
65-74 (Middle-old)	473	43.9
75-94 (Old-old)	142	13.2
Gender		
Male	560	52
Female	517	48
Ethnic		
Malay	178	16.5
Dayak	515	47.8
Chinese	198	18.4
Others	186	17.3
Religion		
Muslim	368	34.2
Christian	640	59.4
Buddhism	41	3.8
Others	28	2.6
Education level		
Up to primary	618	57.4
Secondary	395	36.7
Tertiary	64	5.9
Occupation		
Not working	887	82.4
Working	190	17.6
Marital status		
Married	791	73.4
Not married	48	4.5
Divorced/widow	238	22.1
Household size		
Small (<5 members)	655	57.8
Medium (5-7 members)	343	31.8
Large (≥8members)	112	10.4
Family income level (MYR)		
< 2000	603	56
2001-3000	299	27.8
>3000	175	16.2
Medical problems		
No	434	40.3
Yes	643	59.7

The Age-friendly Environments and Psychosocial Wellbeing variables

As shown in Table 2, the overall mean score for the age-friendly environments variables was 374.17 (SD = 84.53). The social participation variable scored the highest mean with 70.05 (SD = 17.15) and the lowest scores was the communicable and information variable (mean = 29.06, SD = 11.21). Whereas, the mean score for psychosocial wellbeing variable was 79.85 (SD = 17.28) with a minimum score of 29 and highest score of 110. The Pearson's correlation between each

variable of the AFEs were between $r=0.13$ to $r=0.72$, and all were significantly related. The psychosocial wellbeing variable was also significantly related to all variables of the AFEs. Robust regression analysis showed that six out of eight AFEs domains, namely housing (estimate = 0.54, SE = 0.07, 95% CI = 0.40, 0.67), social participation (estimate = 0.14, SE = 0.05, 95% CI = 0.05, 0.24), respect and social inclusion (estimate = 0.22, SE = 0.06, 95% CI = 0.10, 0.34), civic participation and employment (estimate = 0.69, SE = 0.08, 95% CI = 0.55, 0.85), communication and information (estimate = -0.19, SE = 0.06, 95% CI = -0.31, -0.07), and transportation (estimate = 0.17, SE = 0.03, 95% CI = 0.11, 0.24) domains were statistically significant as predictors for the psychosocial wellbeing of older adults. The community support and health services (estimate = -0.03, SE = 0.04, 95% CI = -0.10, 0.05), and outdoor spaces and building (estimate = -0.01, SE = 0.03, 95% CI = 0.11, 0.24) domains were not significantly predict the psychosocial wellbeing. The six domains of AFEs in the robust model explained 54% of the variance in the psychosocial wellbeing ($R^2 = 0.54$). The adjusted R^2 was greatly improved in the robust model (adjusted $R^2 = 0.54$) compared to the multiple linear regression model (adjusted $R^2 = 0.45$). The assessment of the psychosocial wellbeing with robust regression analysis is presented in Table 3.

DISCUSSION

The main finding of the current study was that the psychosocial wellbeing among the older adults in Sarawak was significantly influenced by the age-friendly environments. This finding highlights the importance of a two-pronged approach (Yen et al., 2009). Firstly, environments that are objectively designed incorporating the accessible and meet the physical needs of older adults is essential. Secondly, environmental features that promote positive perceptions, such as amenities for exercise, social interaction, and readily available green spaces, is equally crucial. These perceptions towards the environments play a significant role in shaping the wellbeing of older adults as supported by other studies (Shen, 2014; Toma et al., 2015).

The housing is a fundamental human need, which becomes even more critical for older adults who spend significant time at home (Rowles et al., 2003). The scientific reasoning behind this association can be understood by considering that as individuals age, their physical mobility often decreases, making the home environment a primary context for daily activities and social interactions. Adequate, safe and comfortable housing environments, essential utilities, and the ability to modify for ageing-in-place create a safe and secure foundation, promote overall wellbeing for older adults (Bahnini et al., 2022).

Social participation emerged as a significant predictor of psychosocial wellbeing in our study. This result aligned with the findings by Forsman et al. (Forsman et al., 2013) that revealed social participation promotes mental wellbeing in older adults. Studies elsewhere have shown that regular social engagement delays disability onset, promotes vitality, enhances physical and mental health, and even reduces the risk of death and dementia (Levasseur et al., 2020; Novek et al., 2013).

Table 2: Relationship of the overall scores of each AFEs variables and psychosocial wellbeing (N=1077)

Variable	1	2	3	4	5	6	7	8	9	Mean	SD
1 Housing	-									38.08	7.75
2 Social participation	0.49*	-								70.05	17.15
3 Respect and social inclusion	0.42*	0.61*	-							54.68	11.31
4 Civic participation and employment	0.29*	0.66*	0.56*	-						34.66	8.79
5 Communication and information	0.14*	0.49*	0.47*	0.59*	-					29.06	11.21
6 Community support and health services	0.21*	0.50*	0.57*	0.47*	0.66*	-				59.64	17.92
7 Outdoor spaces and building	0.21*	0.48*	0.55*	0.48*	0.60*	0.62*	-			46.25	17.56
8 Transportation	0.13*	0.41*	0.44*	0.47*	0.59*	0.47*	0.72*	-		41.74	20.41
9 Psychosocial wellbeing	0.44*	0.53*	0.49*	0.58*	0.33*	0.33*	0.38*	0.41*	-	79.85	17.28

* $p < 0.05$, Pearson's correlation

Table 3: Robust regression analysis result between the AFE domains and the psychosocial wellbeing (N=1077)

Variable	Estimate	Standard Error (S.E)	t value
(intercept)	13.88	2.57	5.41*
Housing	0.54	0.07	7.81*
Social participation	0.14	0.05	2.96*
Respect and social inclusion	0.22	0.06	3.67*
Civic participation and employment	0.69	0.08	9.07*
Communication and information	-0.19	0.06	-3.14*
Community support and health services	-0.03	0.04	-0.71
Outdoor spaces and building	-0.01	0.04	-0.25
Transportation	0.17	0.03	5.08*
<i>R-squared: 0.54</i>			
<i>Adjusted R-squared: 0.54</i>			
Total Age-Friendly Environments	0.12	0.01	22.56*
<i>R-squared: 0.32</i>			
<i>Adjusted R-squared: 0.32</i>			

* $p < 0.05$

Engaging in civic activities gives older adults a sense of purpose, which is crucial for mental health, as it fosters self-worth and reduces the likelihood of relying solely on external help (Batista & Cruz-Ledón, 2008). Civic participation offers a range of benefits, including reduced mortality rates and promoting healthier lifestyle. As reported by older adults in the present study, the positive impact of civic participation on mental and physical health aligns with findings from previous studies (Filges et al., 2020). In communities with robust social infrastructure and plentiful volunteer opportunities, older adults may experience more excellent benefits from civic engagement due to more accessible to and participate in these activities. Conversely, in areas where such opportunities are scarce or presence of barriers to participation, the impact of civic engagement on wellbeing maybe less pronounced.

Accessible transportation empowers older adults to navigate their surroundings independently, which fosters a sense of autonomy and dignity, both of which are essential components of wellbeing (Menec et al., 2011). In the present study, it was found that transportation was positively associated with psychosocial wellbeing, a finding consistent with the existing literature. With good access to suitable transportation options directly affects older adults' ability to move freely, participate in social activities, and maintain a good quality of life.

Contrast with the findings by Black and Hyer (Black & Hyer, 2020), our study identified a negative association between communication and information access, and older adults' psychosocial wellbeing despite being a significant predictor. This suggests that older adults are struggling to have good access to the communication and information technologies. Limited digital literacy, financial constraints, or physical challenges (e.g., vision or dexterity impairments) are among reasons for them to access effectively these technologies. Using more internet for social connection and networking, and health information seeking among the older adults is potentially enhance their wellbeing (Fung et al., 2023).

We found no significant association between community support and healthcare services with older adults' psychosocial wellbeing. The reason for this could be explained by the substitution effect (Hao, 2008). The substitution effect is where the impact of a new or additional resource is diminished if the existing resources are already effectively meeting the need. For example, the Malaysian government has provided government-funded primary care clinics and hospitals to meet the primary need and medical care of the older adults. In addition, the Malaysian Department of Social Welfare provides various forms of support, including financial assistance, senior citizen activity centres, and long-term care residences for dependent older adults without family support (Department of Social Welfare Malaysia, 2023). The comprehensive nature of these services might cause older adults to perceive their needs have adequately addressed, reducing the potential impact of further community support on their psychosocial wellbeing.

Although in some studies that suggested outdoor spaces and buildings can promote wellbeing in older adults (Li et al., 2010), our study suggested otherwise. One of the possibilities is that, physical activity level perceived more substantial role in promoting wellbeing, improve cardiovascular health, cognitive function, and mental health compared to the built environment itself (Gothe et al., 2020; Huang et al., 2019). Therefore, even if outdoor spaces are theoretically beneficial, their impact might be negligible for less physically active or individuals with mobility limited who face challenges accessing these environments. This may cause older adults to perceive outdoor spaces as inaccessible and not environmentally friendly for them to engage in activities such as walking or social interactions (Teh et al., 2023). Other factors include aesthetics, the availability of public amenities like restrooms, park safety, and overall park designed and

maintenance can have great influence on the older adults' wellbeing (van Hoof et al., 2021; Zhang et al., 2015).

This study has several limitations. First, the study employed the cross-sectional study design. In view of the data collected at a single point, it was impossible to determine whether the domains of AFEs directly influenced the wellbeing. Hence, the cause-effect could not be established. Secondly, given the background of Sarawak state with multicultural background, it was challenge to interview the respondents with diverse ethnicities and languages. In addition to that, older adults may have different interpretation due to their limitations such as presbycusis. Finally, in view of their old age, self-reported data is susceptible to recall bias due to memory limitations.

CONCLUSION

The present study suggests that older adults perceived that environments that are age-friendly are likely to have better psychosocial wellbeing in the Sarawakian context. The housing, social participation, respect and social inclusion, civic participation and employment, and transportation are significant domains of age-friendly environments, while communication and information, community support and health services, outdoor spaces and buildings showed negative association with psychosocial wellbeing. This study also adds to the current evidence that age-friendly environments is an important predictor of wellbeing among older adults, and will assist the local government to make decision to design and implement aged-friendly initiatives.

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CONFLICT OF INTEREST

The authors have no conflict of interest regarding this study.

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081-071

**DISASTER PREPAREDNESS TOWARDS COMMUNITY RESILIENCE:
CURRICULUM DEVELOPMENT OF A FLOOD DISASTER TRAINING
MODULE FOR COMMUNITIES**

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ABSTRACT

The increasing frequency and severity of floods, driven by rapid population growth, urbanisation, and climate change, necessitates effective community-based disaster preparedness. This study aimed to develop a Flood Disaster Preparedness Training Module to strengthen community resilience in flood-prone areas, particularly in Kelantan. Guided by findings from a resilience study that revealed inadequate preparedness among at-risk populations, two structured brainstorming workshops were held with various NGO volunteers and representatives from relevant governmental agencies. The curriculum development process addressed six critical humanitarian clusters: Health, Food Safety, Water, Sanitation and Hygiene (WASH), Shelter, Communication, and Logistics. Post-training evaluation indicated unanimous agreement among participants that the module was highly beneficial, enhanced knowledge, met objectives, and warranted dissemination to the wider community. Participants expressed strong commitment to sharing the acquired knowledge and recommended future expansion of the module to intermediate and advanced levels. The results underscore the module's potential as a foundational tool in building community capacity and resilience against flood disasters, contributing to broader disaster risk reduction efforts in Malaysia.

Keywords: Disaster Preparedness, Curriculum Development, Community Resilience, Flood Disaster, Malaysia.

125-104

**IMPACT OF SITUATION ASSESSMENTS IN MAKING URBAN COMMUNITY
GARDENS DURABLE POINTS OF ACCESS TO URBAN NATURAL FOOD
ENVIRONMENTS IN KUALA LUMPUR, MALAYSIA**

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ABSTRACT

This paper looks at how the use of situation assessments during the designing and setting up of urban community gardens can mitigate challenges they face and ensure that gardens can provide a long-term solution to dwindling access to natural food environments for urban populations.

With rapid urbanisation and increasing spread of urban development into peri-urban areas, there has been a significant reduction in available agricultural land for urban populations to use. Urban community gardening has become a key way in making natural food environments available to urban populations, particularly low-income groups who typically live in more densely populated areas and have less chances of front-yard or balcony planting.

Nevertheless, in order for urban community gardens to be a viable point of access to natural food environments, they have to be capable of sustaining their efforts long-term. Currently, urban community gardens in the Kuala Lumpur area face multiple challenges, including flooding, lack of maintained volunteer support, and securing resources for garden maintenance. This paper proposes that urban gardens that undertook situation analysis during the design process have greater chances at mitigating challenges faced and build gardens that thrive and endure. Data is collected via in-depth interviews with garden leaders and via garden observations.

Keywords: Natural Food Environments, Urban Community Gardens, Community Development.

154-126

RETHINKING PLAYScape: UNDERSTANDING CHILDREN'S SPATIAL AGENCY IN LOW-COST STRATA COMMUNITIES

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ABSTRACT

Children living in low-cost strata housing often experience limited access to safe and stimulating environments that support their holistic development. In Selangor, where rapid urbanization has driven the proliferation of high-density housing, the lack of inclusive social infrastructure has become a pressing concern. This study examines the opportunities and accessibility of play and social spaces among children residing in a low-cost flat, Flat Kenanga, in Batu Caves. The research addresses a key gap in understanding how spatial constraints and poorly maintained communal facilities affect children's social well-being, physical activity, and sense of safety within their neighborhoods. Adopting a mixed-method approach, the study employed on-site inventory mapping and structured surveys involving 51 children aged 8–17 years. The analysis reveals that more than half of respondents reported inadequate and poorly maintained play areas, with safety concerns and lack of space cited as major barriers to outdoor play. The findings highlight that children predominantly use non-designated areas such as corridors, lift lobbies, and parking spaces as alternative play zones, reflecting spatial improvisation and adaptive social behavior within restricted environments. Theoretically, this study contributes to discourses on child-friendly urbanism and spatial equity, showing how play accessibility serves as a critical dimension of urban social sustainability. Practically, it proposes a child-inclusive planning framework that prioritizes safe, flexible, and community-managed play environments within existing strata housing. By integrating children's voices into urban design and housing policy, the research highlights the importance of participatory and sustainable interventions that restore social balance and enhance liveability in densely populated urban settlements.

Keywords: Children's Wellbeing, Low-Cost Housing, Play Accessibility, Inclusive Urban Planning.

INTRODUCTION

Rapid urbanisation in Malaysia, especially in Selangor, has spurred the development of high-density, low-cost strata housing to meet growing urban demand. While such housing provides affordable options for lower-income groups, it often results in compact environments with limited open or communal spaces. For children, these spatial constraints restrict access to safe and stimulating surroundings that are vital for physical, social, and emotional growth.

Children's experiences of neighbourhood life are closely shaped by their built environment. Play areas and communal spaces support not only recreation but also social relationships and cognitive development (Ruiz, Quackenboss & Tulve, 2016; Nordbø, Raanaas, Nordh & Aamodt, 2019). However, in many low-cost strata developments, play areas are scarce, poorly maintained, or unsafe. The neglect of social infrastructure sidelines children's needs, reflecting a broader urban tendency to prioritise density and functionality over liveability and child-friendliness.

Although issues of liveability and community wellbeing in Malaysian housing have been widely studied, children's own spatial experiences remain underexplored. Conventional perspectives often portray them as passive users of space, overlooking their ability to adapt and negotiate their surroundings. The concept of spatial agency, however, recognises children as active participants who creatively reinterpret and transform everyday spaces (Agha, Thambiah & Chakraborty, 2019; Ning, Lim & Adam, 2025). Even within restrictive environments, children construct their own spatial meanings through improvisation and play.

In low-cost strata housing, this spatial agency is often expressed through creative adaptation of underused areas (Agha et al., 2019; Srirangam et al., 2022). Corridors, lift lobbies, stairwells, and parking lots become informal play zones, revealing how children reclaim marginal spaces for interaction and belonging. These practices demonstrate resilience and resourcefulness within environments that offer limited formal play infrastructure.

This paper explores children's spatial practices at Flat Kenanga in Batu Caves. Employing a mixed-method approach that integrates spatial mapping, photographic documentation and structured surveys with 51 children aged 8 to 17, the study examines how the physical conditions of the built environment intersect with children's lived experiences of play and social interaction.

The analysis situates children's play within the broader discourse of child-friendly urbanism and spatial equity, emphasising that accessibility to play is a key dimension of urban social sustainability. Recognising how children adapt and reinterpret their surroundings provides valuable insights for child-inclusive housing design and urban policy. Rethinking playscapes as dynamic, co-created spaces, rather than fixed, adult-defined areas can enhance social wellbeing and liveability in dense urban settings. Ultimately, this study highlights the importance of integrating children's perspectives into planning and design to ensure more inclusive, resilient and sustainable communities.

LITERATURE REVIEW

PLAY, WELLBEING AND URBAN CHILDHOODS

Play is fundamental to children's cognitive, social and emotional development, functioning as both a learning process and a way of engaging meaningfully with their surroundings. It nurtures creativity, problem-solving and social negotiation, while promoting a sense of belonging and identity within the neighbourhood (Yin, Wang, Xu & Heng, 2025). Research consistently highlights that environments supporting diverse play activities contribute positively to children's resilience and mental wellbeing (Yin, Kasraian & van Wesemael, 2022). Beyond recreation, play represents a vital dimension of everyday wellbeing, it allows autonomy, expression and discovery which in turn reinforce children's confidence and social connectedness.

In urban contexts, the quality of the built environment plays a decisive role in determining children's access to play. Recent studies reveal that proximity to green spaces, pedestrian-friendly routes and inclusive recreational areas strongly correlates with increased physical activity and reduced stress among children (Niu, Hussien & Adam, 2025). Conversely, high-density and car-oriented environments often limit outdoor engagement, heightening risk of isolation and sedentary lifestyles. These spatial disparities highlight how socio-economic and spatial inequalities intersect to constrain children's play opportunities (Szewiola, 2023).

The decline in accessible and safe play spaces in cities reflects broader structural priorities in urban planning, where land efficiency and real estate value frequently override social and development needs. As a result, open and communal spaces are often treated as residual land uses rather than essential infrastructure. This imbalance disproportionately affects children in low-income urban communities, where limited access to quality outdoor spaces undermines both social cohesion and urban liveability (Yin et al., 2025). Scholars and policy makers have therefore begun to reframe play not as a leisure activity, but as a critical component of sustainable urban design.

Globally, the importance of play as a right and a social necessity has been reinforced through the United Nations Convention on the Rights of the Child (Article 31), which recognises play as essential to wellbeing and development. In Malaysia, discussions on play have historically centred on educational contexts, but recent research stresses the need to integrate play into housing and neighbourhood design (Niu et al., 2025). Viewing play through the lens of liveability and social sustainability broadens its relevance to urban planning, highlighting that safe, inclusive and stimulating environments are central to building equitable cities that support children's wellbeing.

SPATIAL AGENCY AND EVERYDAY URBAN PRACTICES

The concept of spatial agency provides a critical framework for understanding how individuals, especially children, actively negotiate, reinterpret and transform the environments around them. It challenges the notion of space as static, instead viewing it as something continuously produced through social interaction and everyday practices (Agha et al., 2019). Within this framework, children are not passive recipients of adult-designed spaces but active participants who adapt and co-create meaning through play and movement.

Recent studies of children in urban high-rise environments demonstrate that young residents often claim ownership of overlooked spaces such as stairwells, corridors or parking areas, transforming them into informal play zones (Agha et al., 2019; Szewiola, 2023). These adaptive behaviours illustrate children's creativity and resilience in the face of spatial constraints. They also reveal a micro-level urbanism, in which children reshape their surroundings through daily acts of exploration and social interaction. Such improvisational play reflects what Yin et al. (2022)

describe as the “*everyday resilience*” of children in restricted urban contexts, where resourcefulness compensates for environmental limitations.

Spatial agency extends beyond the act of play, it encompasses how children make sense of their environment, construct social relationships and assert their presence in spaces often structured by adult priorities. In dense urban housing, these small acts of adaptation reflect children’s ability to convert marginal, transient or underused spaces into meaningful environments. Niu et al. (2025) emphasise that such practices highlight children’s spatial intelligence in which their capacity to negotiate safety, comfort and belonging in fluid urban landscapes. This active relationship between child and space forms part of what Yin et al. (2025) describe as “*participatory spatial design from below*”, where children’s behaviour reveals latent potentials within everyday settings.

In this way, the notion of spatial agency provides both a theoretical and practical bridge between urban form and human experience. It illustrates how children’s creative responses to environmental constraints can inform the development of more inclusive and child-responsive cities.

LOW-COST STRATA HOUSING AND SOCIAL INFRASTRUCTURE IN MALAYSIA

Low-cost strata housing represents a central component of Malaysia’s urban housing strategy, designed to provide affordable and secure living for lower-income populations in rapidly urbanising regions such as Selangor. These developments are largely the product of Malaysia’s Zero-Slum Policy (*Dasar Setinggalan Sifar*), introduced during the 1990s and 2000s to eradicate informal settlements and rehouse squatters in formal housing schemes (Aziz, Hussain & Ujang, 2016; Abdullah, Kuek, Hamdan & Zulkifli, 2017). Through programmes such as the *Projek Perumahan Rakyat* (PPR), the Malaysian government has significantly reduced the prevalence of informal settlements by relocating low-income households into formal low-cost housing. Since its inception, the PPR scheme has delivered a total of 83,759 housing units across 120 projects nationwide, completed by 2017 (The Malaysian Insight, 2017). However, this rapid quantitative expansion often came at the expense of qualitative liveability, transferring spatial and social vulnerabilities from horizontal slums to vertical housing environments (Shuhaimi et al., 2023).

Recent studies highlight persistent challenges in building maintenance, spatial design and community management, which collectively undermine residents’ quality of life (Shuhaimi et al., 2023). Physical deterioration, inadequate facilities and the absence of safe open spaces are particularly pronounced in ageing low-cost flats, where shared areas frequently fall into disrepair due to limited management resources and unclear maintenance responsibilities.

National housing and community policies such as the *Dasar Perumahan Negara* (2018) and the *Dasar Komuniti Negara* (2019) underscore the goal of creating inclusive and liveable communities. However, implementation has tended to prioritise construction targets over social infrastructure, neglecting spaces that sustain community life (Shuhaimi et al., 2023). Social infrastructure comprising communal spaces, recreational areas and social facilities which is fundamental to collective wellbeing, yet remains underdeveloped in many low-cost housing environments (Au-Yong et al., 2023). Even when playgrounds or communal areas are provided, they are often unsafe, poorly maintained or repurposed, limiting children’s opportunities for play and socialisation.

The lack of attention to children’s spatial needs reflects a broader disconnect between policy objectives and on-ground realities. Agha et al (2019) observe that in high-density housing

environments, corridors, stairwells and car parks frequently become *de facto* play space, not by design but by necessity. These adaptive practices expose the inadequacy of current planning standards, which rarely prioritise child-friendly design or safe mobility networks within low-income housing contexts.

Addressing this gap requires a paradigm shift in how social infrastructure is conceptualised within Malaysia's urban housing framework. Rather than treating play and recreation as peripheral amenities, they should be recognised as core components of sustainable and resilient communities. Yin et al. (2022) argue that integrating play into the everyday fabric of residential design promotes social inclusivity, while Szewiola (2023) highlights that recognising the multifunctional value of shared spaces can transform underutilised areas into vibrant social hubs that strengthen community bonds. This perspective positions children not merely as beneficiaries of policy but as indicators of environmental quality and social vitality. Their spatial practices, particularly how they transform and occupy neglected communal spaces, reveal both the shortcomings and the latent potential of urban design.

Building on this understanding, it becomes increasingly evident that enhancing children's spatial wellbeing requires action at the level of policy and design. As Malaysia continues to pursue its affordable housing agenda, embedding child-friendly principles and strengthening social infrastructure in policy and design frameworks will be essential to ensure that low-cost strata housing provide not only shelter but also the conditions for healthy, inclusive and sustainable urban living. Lessons can be drawn from several international models. In Singapore, the Housing and Development Board (HDB) incorporates *void decks* and shared ground-floor spaces to foster social interaction and informal play within high-density estates (Loh, 2024).

In the Netherlands, the *woonerf* or shared-street concept transforms residential streets into safe, multi-use environments that enable children to play freely and safely (Gharehbaglou & Khajeh-Saeed, 2018). Similarly, Barcelona's '*superblock*' initiative reorganises urban layouts to prioritise pedestrians, reclaiming street space for social and recreational use (Gharehbaglou & Khajeh-Saeed, 2018). Equally important are participatory approaches observed in Copenhagen, where residents including children and caregivers are actively involved in the planning, design and management of communal spaces (Ding et al., 2023). Such participatory design processes ensure that interventions reflect lived experiences and local needs, fostering a stronger sense of ownership and stewardship within the community. Collectively, these models demonstrate how child-friendly and participatory design principles can be systematically embedded in housing and urban policy to improve the liveability of dense, low-income environments.

Building on these lessons and the identified gaps in current policy, the following section introduces a conceptual framework that situates children's lived experiences within the spatial realities of low-cost strata housing.

CONCEPTUAL FRAMEWORK: SPATIAL CONSTRAINTS AND CHILDREN'S AGENCY

Drawing from these insights, this section presents the conceptual framework developed in this study as illustrated in Figure 1. The diagram provides a robust framework for understanding how the spatial constraint of low-cost strata housing shapes children's lived experiences, particularly in relation to play, wellbeing and spatial agency. In an environment characterized by high density and limited open space, the built environment places substantial restrictions on children's freedom to interact with their surroundings. These limitations, however, compel children to engage in acts

of improvisation and adaptation, transforming informal and often overlooked areas into meaningful spaces for play and exploration. This adaptive behaviour is conceptualised as spatial agency where it reflects not only children's creativity and resilience but it is also mediated by factors such as safety, accessibility and prevailing social norms within the community.

Crucially, the diagram situates play as vital medium for children's development and social connection, highlighting that wellbeing emerges not in spite of environmental constraints, but often through children's inventive responses to them. By foregrounding the significance of these improvisational practices, the framework calls for a more nuanced understanding of how children navigate and reconfigure their spatial realities. This perspective underpins the expected outcome: a framework for child-responsive social infrastructure that addresses the specific challenges and potentials of low-cost strata housing. Such a framework aspires to strengthen children's agency and wellbeing by aligning design principles with their lived experiences, ultimately contributing to more inclusive and equitable urban environments.

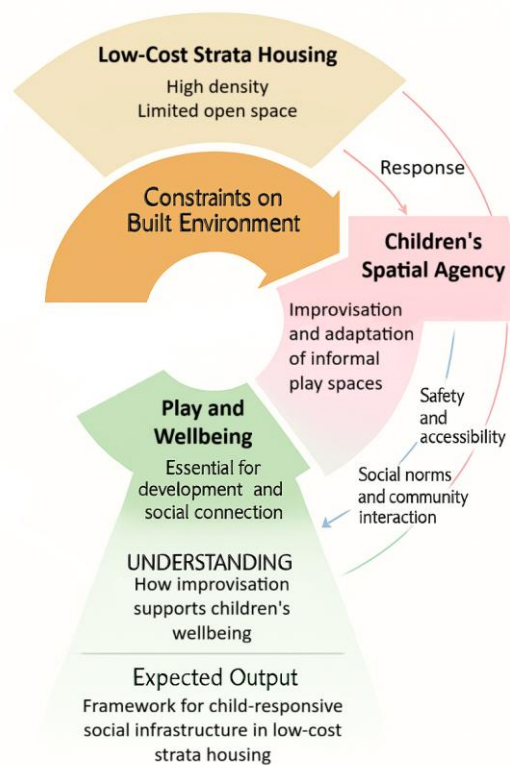


Figure 1: Conceptual framework of study.

METHODOLOGY

This study adopted a mixed-methods approach, integrating quantitative and qualitative techniques to provide a comprehensive understanding of social spaces issues within the context of low-cost strata housing. The research was conducted at Flat Kenanga, Batu Caves, a high-density residential complex that typifies the characteristics of low-cost strata housing in Malaysian urban settings.

The study population comprised approximately 300 children residing within the housing area. From this population, 51 respondents aged between 8 to 17 years were selected through purposive sampling, based on age criteria and willingness to participate. The chosen age range reflects the development period in which children demonstrate increasing independence in spatial exploration and peer interaction, yet remain closely tied to neighbourhood environments for daily play and

social engagement (O'Brien & Christensen, 2003). This range also aligns with previous studies examining children's spatial behaviour and use of communal environments in urban residents settings (Karsten, 2005; Moore, 2017). Although this sample represents only a subset of the total population, it is considered suitable for an exploratory and observation-based study. Recent methodological work has confirmed that smaller samples can be adequate for descriptive and observation-based research when the aim is depth of insight rather than broader inferential generalization (Sanli, 2023; Mursa et al., 2025). Therefore, the findings are interpreted as a general reflection of the observed spatial patterns among the sample and are not intended to be generalized to the entire population of 300 children.

Quantitative data were collected through a structured questionnaire survey that examined patterns of social space use, perceptions of safety and maintenance conditions within the housing compound. In parallel, the qualitative component involved field observations and visual documentation, which focused on identifying the types, conditions and utilisations of existing social spaces within the residential environment. Observation was particularly significant in capturing the nature of children's spatial practices, including types of activities, interactions with peers and adults and adaptations of physical settings for play and socialisation (Clark, 2001). This method also allowed for the analysis of spatial organisations and potential space typologies, offering insight into how the built form influences the emergence of informal social spaces within constrained residential environments.

The quantitative data were analysed using descriptive statistical techniques, while the qualitative data were subjected to thematic analysis to identify recurrent patterns and themes concerning children's engagement with and utilization of social spaces in their living environment. The integration of both data types enables a more holistic understanding of the physical and behavioural dimensions of spatial experience. The findings are anticipated to inform child-friendly design guidelines, highlight critical deficiencies in current spatial provisions and provide empirical evidence to support policy recommendations aimed at improving liveability and community wellbeing in similar urban housing developments.

FINDINGS

This study explored children's experiences of play and social spaces in Flat Kenanga, Batu Caves, a low-cost strata housing development located in Selangor. Using a mixed-methods approach that combined on-site observation, spatial mapping, photographic documentation and structured surveys with 51 children aged 8 to 17 years, two interrelated themes emerged. These findings capture both the tangible conditions of the built environment and the lived experiences that shape children's everyday spatial practices.

AVAILABILITY AND QUALITY OF PLAY SPACES

The assessment of physical facilities at Flat Kenanga reveals a significant shortage of adequate and well-maintained play spaces for children. More than half of the respondents indicated that recreational facilities within the compound were either insufficient or entirely absent. Specifically, 11.8% of respondents reported that there were no designated playgrounds or recreational areas at all, while 45.1% stated that the existing facilities were inadequate in both size and number to meet the recreational needs of children. This reflects both a quantitative and qualitative deficit in spaces that support children's everyday play and social activities.

Field observations conducted on-site corroborate these survey findings. Spatial analysis identified three main open spaces within the housing compound, collectively covering an estimated 225 square metres, a size considered small relative to the overall population density of the flat. As illustrated in Figure 2, one of these spaces (labelled No. 1) has been converted into a temporary greenhouse, while the remaining two serve as recreational areas equipped with minimal facilities.

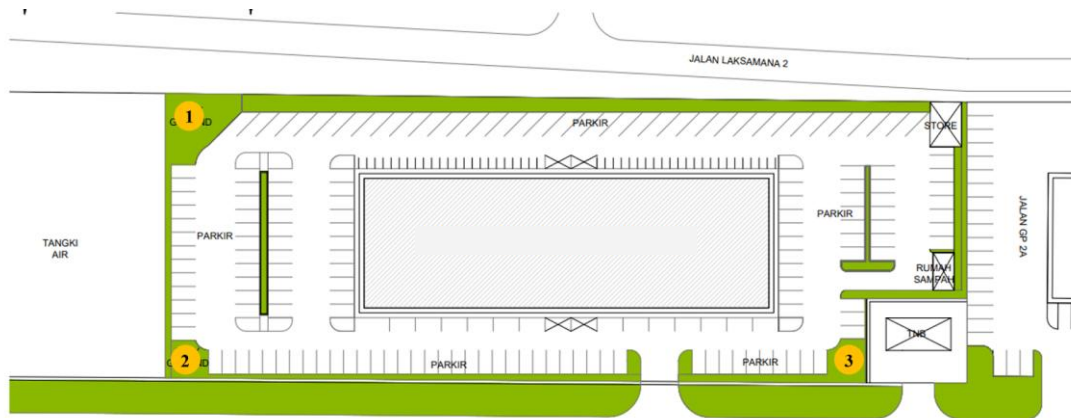


Figure 2: Layout plan of green areas at Flat Kenanga.

The two operational recreational areas are equipped only with basic play structure, many of which are unsuitable for children (Figure 3). The combined factors of limited spatial capacity and competing land uses contribute to an overall shortage of accessible, safe and engaging recreational areas. Consequently, these constraints restrict opportunities for outdoor physical activity and inhibit the development of social interaction among young residents, which are the elements that are central to children's wellbeing.



Figure 3: Recreational space labelled as No. 2 (left) and social space labelled as No. 3 (right).

In terms of quality, as shown in Table 1, 47.1% of respondents described the existing playgrounds as being in fair condition, though they emphasized an urgent need for improved cleanliness and maintenance of play equipment. More concerningly, 15.7% of respondents reported that the playgrounds were frequently dirty or damaged, indicating serious lapses in upkeep that discourage regular use and diminish the attractiveness of this space for children's activities.

Table 1: Respondents' perceptions of playground area maintenance.

Playground area maintenance	Percentage (%)
No, often dirty and damaged	15.7

Not sure	7.8
Okay, but needs improvement	47.1
Yes, regularly well-maintained	29.4
Total	100

Despite limited effort to provide recreational facilities, the overall size, quality and upkeep of the available play areas remain insufficient to accommodate the large population of children residing in the flat. The absence of a systematic maintenance schedule and a clearly defined management framework for communal spaces have resulted in gradual physical deterioration. Overall, these findings highlight that the provision of children's play spaces in Flat Kenanga is neither sufficient nor sustainable, reflecting deeper challenges in the planning, design and long-term management of social infrastructure in low-cost strata housing.

SPATIAL IMPROVISATION AND AGENCY

In response to the shortage of formal and well-maintained play areas, children at Flat Kenanga demonstrated a clear pattern of spatial improvisation in their everyday play activities. Rather than relying solely on the designated playground, many children creatively adapted nearby spaces within the residential compound for play, exploration and social interaction.

Survey results show that the most frequently used play spaces were the areas in front of their home and along the corridors (15.7%), followed by lift lobbies (13.7%) and friends' or neighbours' houses (13.7%). These locations are easily accessible, visible to parents, situated within a familiar environment where children feel safe and comfortable.

These improvised spatial practices demonstrate how children utilize transitional and shared spaces such as corridors, lift lobbies and thresholds as informal play zones. In doing so, they effectively reinterpret the intended functions of these spaces, transforming areas originally designed for circulation into meaningful sites for recreation and social connection. This behavior reflects not only children's adaptability and creativity, but also their capacity to assert agency within spatial and material constraints.

However, these adaptive practices also expose the structural limitations of high-density housing environments. Limited open space forces children to transform marginal areas into makeshift play zones, which, while offering short-term opportunities for interaction, also exposes them to safety risks such as noise disturbance, restricted movement or potential conflict with other residents.

Despite these challenges, the children's ability to creatively modify and reclaim their surroundings demonstrates resilience and a strong sense of agency. Their improvisation underscores the ways in which children actively produce and reproduce social space, transforming the everyday environment into one that supports their needs for play and connection. These observations suggest that children's spatial agency operates as both a response to environmental scarcity and an expression of social participation within a restrictive urban context.

DISCUSSIONS

The findings from Flat Kenanga illustrate how children navigate, adapt and respond to spatial constraints in low-cost strata housing, highlighting the interplay between physical infrastructure, children's practices and broader policy contexts. The shortage of formal play areas, limited quality of existing facilities and children's reliance on improvisation, reflects both the challenges and adaptive strategies that shape everyday experiences in high-density residential environments. These dynamics can be understood through the frameworks of spatial agency, child-friendly urbanism and spatial equity, while also pointing to gaps in Malaysia's housing policy.

SPATIAL AGENCY AND CHILDREN'S NEGOTIATION OF SPACE

Children at Flat Kenanga exhibit spatial agency through their adaptive use of the built environment. Spatial agency refers to the capacity of individuals including children to actively negotiate and modify space to meet their needs, even within constrained environments (Agha et al., 2019; Veronese, Sousa, Cavazzoni & Shoman, 2020). The survey and observational data show that children frequently utilize areas such as corridors, lift lobbies and spaces in front of their home, which are areas not originally intended for play.

This improvisation demonstrates children's ability to reinterpret spatial functions, transforming everyday circulation zones into sites of recreation and social interaction. For example, corridors primarily designed for movement and access, become temporary playgrounds where children engage in physical activity and social exchange. Similarly, lift lobbies serve as communal hubs where children gather, fostering peer networks and social cohesion. These practices illustrate that children are not passive users of the built environment but active agents capable of producing meaningful spaces despite material limitations (Tang & Woolley, 2023).

The observed pattern of spatial improvisations also reflects a form of resilience and adaptability. Children creatively negotiate the tension between limited space and their desire for play, often prioritising accessibility, visibility and familiarity in their choice of play areas. Such strategies align with previous study in high-density housing contexts, which emphasise that children's spatial agency is most evident in informal and transitional space (Ning, Lim & Adam, 2025). At Flat Kenanga, the children's appropriation of marginal spaces exemplifies this phenomenon, highlighting both the potential and limitations of agency under conditions of spatial scarcity.

In short, the children's behaviour at Flat Kenanga validates theoretical perspectives that treat children not as passive recipients of designed spaces, but as an active producer of their spatial worlds, negotiating, adapting and appropriating built environments to meet their social, play and interactional needs.

CHILD-FRIENDLY URBANISM AND ENVIRONMENTAL DEFICITS

The study highlights a gap between the principles of child-friendly urbanism which advocate for safe, accessible and stimulating spaces for play and learning and the lived reality within low-cost strata housing. Play facilities at Flat Kenanga are insufficient in size, poorly maintained and sometimes repurposed for other uses such as temporary greenhouse. Although some respondents described the playground as well-maintained, many also indicated that it required urgent improvement, while others reported that the area was frequently dirty or damaged.

These environmental deficits constrain opportunities for physical activity, social interaction and creative exploration which are critical for children's psychosocial and cognitive development (Lu & Sharif, 2023; Niu et al., 2025). The findings underscore that child-friendly urbanism in practice requires not only the provision of designated play areas but also their adequate maintenance, accessibility and adaptability to the needs of diverse users. Without such measures, the physical environment fails to support children's holistic development, revealing a persistent disconnect between urban planning ideals and on the ground realities in low-cost housing contexts.

SPATIAL EQUITY AND SOCIAL INCLUSION

The findings also reveal significant issues of spatial equity within urban housing. Children in low-cost strata flats face systemic disadvantages in accessing safe and adequate recreational spaces compared to peers in more affluent or private residential areas (Ning et al., 2025). While children at Flat Kenanga demonstrate resourcefulness through various forms of spatial improvisation, these adaptations simultaneously expose the structural inequalities embedded in urban infrastructure provision.

Limited play areas and poorly maintained facilities exacerbate social and spatial marginalization, shaping children's everyday experiences and potentially affecting their long-term well being (Cui et al., 2024). Moreover, the appropriation of communal circulation spaces for play introduces potential conflicts and safety concerns, illustrating how inequalities manifest in both material and social dimensions.

Achieving spatial equity therefore requires attention not only to the quantity and quality of physical spaces but also to inclusiveness of their design and governance. Participatory mechanisms that empower children and communities to actively engage in shaping their environment are essential to creating more equitable and inclusive urban living conditions.

IMPLICATIONS FOR MALAYSIA'S HOUSING POLICY

The study highlights several gaps in Malaysia's housing policies for low-cost strata developments. Current frameworks including the Strata Management Act 2013 and affordable housing initiatives, primarily emphasise on housing provision, legal administration and cost efficiency with limited attention to children's recreational needs. Key policy gaps identified in this study include:

1. Absence of minimum standards for play space provision. There are currently no clear requirements regarding the size, quality or quantity of play spaces in low-cost strata housing developments.
2. Inadequate maintenance and management frameworks. Communal spaces often deteriorate over time due to ambiguous maintenance responsibilities and the absence of systematic upkeep mechanisms.

Addressing these gaps requires a shift towards child-inclusive housing policy, integrating principles of child-friendly urbanism and spatial equity into the design and governance of residential environments. This includes establishing clear standards for the provision and quality of play spaces, implementing routine maintenance schedules and promoting participatory design processes that allow residents to influence planning and management decisions.

Such measures would help ensure that low-cost housing developments provide not only shelter but also supportive, inclusive environments that foster children's physical, social and emotional development, thereby aligning housing policy with broader national goals of social sustainability and well-being.

Building upon these policy insights, the proposed framework model synthesizes the study's conceptual and empirical findings into a coherent structure. It demonstrates how environmental and managerial constraints shape children's spatial behaviours and wellbeing, while identifying strategic intervention to strengthen child-responsive housing policy and design practice.

FRAMEWORK MODEL OF THE STUDY

The proposed framework presents a structured understanding that connects environmental constraints, children's adaptive behaviour and their developmental outcomes, culminating in actionable policy recommendations as illustrated in Figure 4. It delineates key physical and managerial limitations prevalent in low-cost strata housing such as restricted and poorly maintained play areas, competing land uses and fragmented management systems that collectively constrain children's spatial freedom. These limitations, however, simultaneously elicit spatial improvisation and agency, whereby children creatively appropriate informal and transitional spaces such as corridors, lift lobbies and front-of-house area for play and social interaction.

The development significance of these adaptive practices is not uniform but mediated by contextual factors including safety, accessibility, prevailing social norms and parental supervision. Collectively, these mediating conditions influence the extent to which children's improvisations foster emotional wellbeing, peer interaction and broader community connectedness.

In response, the framework advances the need for a child-responsive social infrastructure that integrates design and planning, governance and social wellbeing dimensions. This entails the establishment of minimum standards for play space provision, the incorporation of child-friendly design principles, the implementation of community co-management strategies and the institutionalization of participatory co-design processes in housing and urban planning. Such integration not only enhances the physical and institutional quality of the built environment but also promotes social wellbeing by fostering trust, interaction and sense of belonging among residents, thereby contributing to the creation of cohesive and resilient communities.

Overall, the framework underscores a holistic and interdependent approach to understanding and enhancing children's spatial experiences within constrained housing environments. Through the integration of design and planning, governance and social wellbeing dimensions, it positions child responsive social infrastructure as a critical pathway towards fostering inclusive, participatory and socially cohesive urban communities.

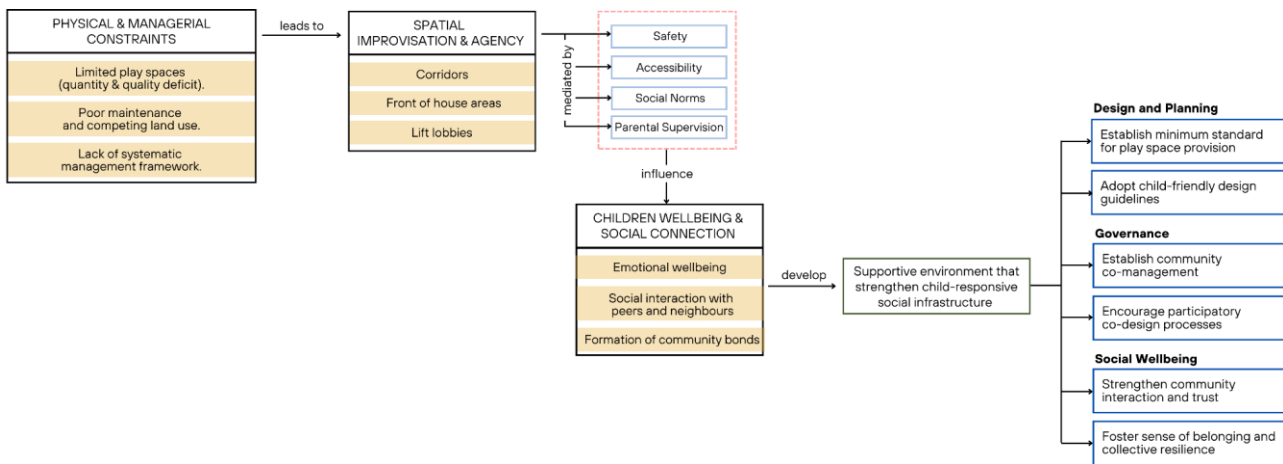


Figure 4: Framework model of the study.

CONCLUSION

This study examined how children living in low-cost strata housing negotiate spatial constraints through everyday acts of improvisation and adaptation, revealing the complex interplay between built form, social structure and everyday agency. The findings from Flat Kenanga demonstrate that despite limited and poorly maintained play facilities, children exercise considerable spatial agency by creatively appropriating marginal and transitional spaces such as corridors, lift lobbies and areas in front of their homes for play and social interaction. These practices underscore children's resilience and capacity to transform constrained environments into meaningful space of belonging and participation.

However, the persistence of environmental and managerial deficits within such settings points to broader structural inequities embedded within Malaysia's urban housing system. Inadequate play infrastructure, unclear maintenance responsibilities and insufficient community participation in spatial planning collectively undermine the principles of child-friendly urbanism and spatial equity.

Building on these insights, the framework model of the study articulates how physical and managerial constraints shape children's adaptive spatial behaviour and developmental outcomes, while highlighting the mediating influence of contextual factors such as safety, accessibility and social norms. Importantly, the framework integrates design and planning, governance and social wellbeing dimensions to illustrate how child-responsive social infrastructure can support more inclusive participatory living environments.

This integration perspective provides a foundation for actionable policy directions that link empirical understanding with spatial, institutional and social interventions, bridging the gap between research and practice in child-friendly urbanism.

Integrating child-centred and participatory design principles into Malaysia's housing and urban policies is therefore imperative. This includes the establishment of minimum standards for play space provision, the institutionalisation of community co-management mechanisms and the incorporation of participatory co-design processes that enable residents particularly children and caregivers to contribute meaningfully to planning and decision-making. Such measures not only

enhance the physical and managerial quality of housing environments but also strengthen social wellbeing through improved trust, interaction and sense of belonging among residents.

Ultimately, advancing spatial equity in low-cost housing extends beyond questions of design efficiency to encompass the pursuit of social justice. By recognising children as active urban citizens with legitimate spatial rights, policymakers and planners can work towards more inclusive, sustainable and humane urban futures where every child has the opportunity to play, grow and thrive.

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Transisi Demografi, Penuaan, Migrasi dan Urbanisasi Serta Implikasinya Terhadap Kebajikan Sosial, Pasaran Buruh dan Dasar Awam

018-015

A CRITICAL ANALYSIS OF SYSTEMATIC LITERATURE REVIEW: FINANCIAL WELL-BEING OF OLDER ADULTS

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ABSTRACT

Well-being, which is the state of being happy and satisfied, is something that everyone wants to achieve in their daily lives. Although there are various kinds of well-being, financial well-being is considered one of the most important forms of well-being needed in today's world to survive in the long run. There is many research that has focused on the financial well-being of younger adults, but studies that target older adults are still scarce. The financial well-being of older adults has arisen as a critical global concern amongst rapid demographic ageing and evolving economic challenges. This systematic literature review explores the dimensions of financial well-being among older adults, focusing on themes such as economic security, financial literacy, and health outcomes. The study employed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) technique, reviewing 18 peer-reviewed articles published between 2014-2024, selected from an initial pool of 596 publications across three major databases- Scopus, Econbiz and Repec. Highlights of the findings include the significant effect that financial status has on the elderly and the importance of financial literacy in achieving favourable retirement outcomes. This research identifies some of the more significant events, including the complexities of digital financial services and the high impact of medical bills on financial security. A clear correlation arises between health and economic conditions, as well as wide demographic gaps in meeting economic benchmarks. The researchers conclude that interventions to improve the financial well-being of older adults will be more successful if they address multiple aspects of financial well-being. Some suggestions involve creating non-discriminatory support mechanisms, implementing targeted financial literacy programs, and improving social protection systems. These results offer actionable insights for policymakers and social practitioners to design multi-faceted solutions to ageing populations' financial health.

Keywords: Financial Well-being, Older Adults, Economic Security, Health-Finance Intersection.

008-017

THE ROLE OF COMMUNICATION IN HEALTHY AGEING: PERSPECTIVES FROM THE HEALTHY ELDERLY POPULATION IN MALAYSIA

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ABSTRACT

Malaysia is projected to become an aged nation by 2030, yet limited research exists on how elderly Malaysians perceive the role of communication in achieving healthy ageing. Communication is fundamental to maintaining social relationships and supporting the physical, mental, emotional, and social dimensions of healthy ageing. Age-related changes, including auditory decline, cognitive changes, and speech dysfluencies, can significantly impact communication effectiveness, potentially leading to social withdrawal and reduced quality of life. This study explores how verbal communication abilities contribute to healthy ageing among Malaysia's elderly population, identifying both facilitating factors and challenges in communication that impact ageing experiences. A qualitative descriptive study design employing focus group discussions (FGDs) was conducted with 25 healthy Malaysian adults aged 60 and above. Participants were recruited through purposive sampling and divided into five focus groups of five participants each. Inclusion criteria included self-reported good health, functional independence, fluency in Malay or English, and absence of severe chronic illnesses or cognitive impairments. Data collection was completed at Universiti Kebangsaan Malaysia's Faculty of Health Sciences, with sessions lasting 60-100 minutes. Thematic analysis following Braun and Clarke's six-phase framework identified patterns and themes within the collected data. Findings reveal that verbal communication plays a multifaceted role in healthy ageing among elderly Malaysians, with four main themes: support for cognitive and mental health, emotional and psychological health, social connection and belonging, and promotion of physical health. Age-related communication challenges were attributed to auditory changes, cognitive decline, and speech disfluencies, with varying impacts on social interactions and ageing experiences. This research addresses a critical gap in understanding communication's role in healthy ageing within the Malaysian cultural context, contributing valuable knowledge to geriatric communication sciences and informing speech-language therapists in developing culturally-appropriate interventions.

Keywords: Healthy Ageing, Verbal Communication, Elderly Population, Malaysia, Qualitative Research.

INTRODUCTION AND LITERATURE REVIEW

The global ageing population is increasing rapidly, with the percentage of people aged 60 and above rising from 9% in 1994 to 12% in 2014, and projected to reach 21% by 2050 (Sabri et al., 2022). Malaysia is expected to become an aged nation by 2030 (Marzuki et al., 2021). This demographic shift, driven by lower fertility and mortality rates and longer life expectancies (Gu et al., 2021), brings increased chronic conditions such as dementia, cardiovascular diseases, and stroke (Suzman et al., 2015), contributing to the global healthcare burden (GBD 2016 Disease and Injury Incidence and Prevalence Collaborators, 2017).

The World Health Organization (WHO) defines healthy ageing as developing and maintaining functional ability to enable well-being in older age, encompassing capabilities that allow individuals to meet basic needs, learn, make decisions, move around, form relationships, and contribute to society (Maurice, 2016). Studies globally have identified key themes in healthy ageing perceptions. Research on foreign-born South Asian older adults found that caring for body, mind, and heart were key themes (Chowdury et al., 2023). A study in Shahrak identified eight factors including marital satisfaction, healthy lifestyle, moral satisfaction, and intergenerational relationships (Farsani et al., 2023). Among Malaysian Malays, six themes emerged: spirituality, physical health, peace of mind, financial independence, and social connections, with spirituality as the cornerstone (Tohit et al., 2021).

Communication plays a significant role in fostering social connections essential for emotional and psychological well-being (Yorkston et al., 2010). Communication includes receiving, processing, storing, and producing messages through various forms, including movements, gestures, vocalisations, and symbols (Beukelman & Mirenda, 2013; McLeod, 2018). For older adults, effective communication supports adaptation to ageing, pursuit of personal goals, maintenance of relationships, decision-making, and quality of life management (Palmer et al., 2019).

However, typical ageing brings communication changes influenced by physical health, depression, and cognitive decline. These changes can impair speech perception and comprehension (Helfer & Staub, 2014), particularly in complex listening environments. Age-related auditory changes, including reduced high-frequency sound detection, create communication difficulties (Heinrich et al., 2016). Older listeners require significantly higher sound intensity levels for high-frequency sounds compared to younger individuals (Pearson et al., 1995; Wilson & McArdle, 2013). Memory challenges from cognitive decline exacerbate word-retrieval difficulties (Oğuz & Özzade, 2021), while ageing is associated with increased disfluencies across speech tasks (Horton et al., 2010; Castro & James, 2014).

While these challenges highlight communication's importance in ageing populations, limited research exists on how older adults perceive communication's role in achieving healthy ageing, particularly in Malaysia's multicultural context.

RESEARCH OBJECTIVES

This study aimed to investigate how verbal communication abilities contribute to healthy ageing of healthy elderly populations in Malaysia.

SPECIFIC OBJECTIVES

1. To identify the role of verbal communication that can contribute to achieving healthy ageing.
2. To identify the challenges faced by elderly individuals in Malaysia regarding verbal communication abilities.
3. To identify the effects of verbal communication challenges on the ageing experiences of elderly individuals in Malaysia.

RESEARCH QUESTIONS

1. What are the roles of verbal communication that contribute significantly to achieving healthy ageing among elderly populations in Malaysia?
2. What challenges do elderly individuals in Malaysia face regarding their verbal communication abilities?
3. How do verbal communication challenges impact the ageing experiences of elderly individuals?

HYPOTHESIS

1. The role of verbal communication contributes to healthy ageing among elderly Malaysians by enhancing physical, mental, emotional, and social well-being.
2. Elderly individuals in Malaysia face verbal communication challenges primarily due to age-related auditory changes, cognitive decline, and increased speech disfluencies.
3. Verbal communication challenges negatively impact ageing experiences by hindering social interactions and contributing to social withdrawal.

METHODOLOGY

This study employed a qualitative descriptive design using focus group discussions to explore older adults' perspectives on communication and healthy ageing. The study was conducted at the Faculty of Health Sciences, Universiti Kebangsaan Malaysia. Twenty-five participants aged 60 and above were selected using purposive sampling. Inclusion criteria included self-reported good health, functional independence, fluency in Malay or English, willingness to participate, and being a Malaysian citizen. Exclusion criteria included severe chronic illnesses, diagnosed dementia, significant cognitive impairments, profound communication difficulties, psychiatric conditions, or severe physical disabilities.

Participants were divided into five focus groups of five individuals each. Sessions were moderated by the researcher in familiar, accessible settings, with each session lasting 60-100 minutes. Sessions were digitally audio-recorded and transcribed in English or Bahasa Melayu. Google Spreadsheet was used to organise and manage the data systematically. Thematic analysis was conducted using Braun and Clarke's (2006) six-phase framework: data familiarisation, coding, theme development, reviewing, defining, and writing up findings.

RESULTS

Twenty-five self-reported healthy elderly participants, aged 61-79 years. Twenty participants (80%) were female and five (20%) were male. Ethnically, 12 (48%) were Malays, 10 (40%) were Indians, and 3 (12%) were Chinese. All participants met the inclusion criteria.

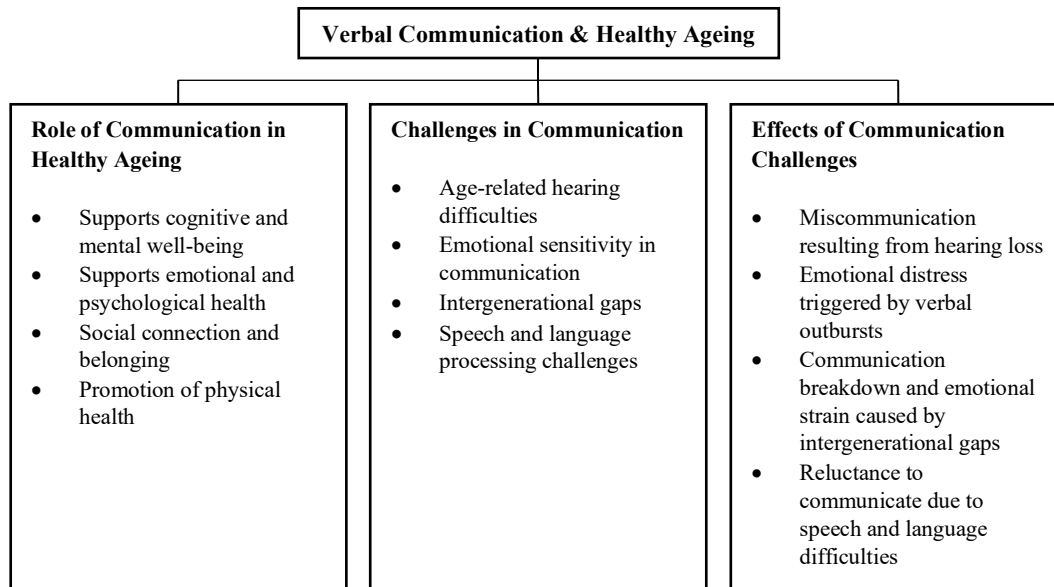


Figure 1: Mind map showing main themes in verbal communication and healthy ageing

ROLE OF COMMUNICATION IN HEALTHY AGEING

Four main themes highlight verbal communication's role in supporting healthy ageing:

1. SUPPORT FOR COGNITIVE AND MENTAL HEALTH

Verbal communication helps older adults keep their minds active, acquire information, and stimulate cognitive functioning. One participant shared, *"Everyone has their own advice or knowledge, which we impart to other people... It's very enriching to listen to each other's points of view"* (Participant 10). Another noted, *"Even when we're just chatting casually like this, our brain gets activated"* (Participant 5).

2. COMMUNICATION SUPPORTS EMOTIONAL AND PSYCHOLOGICAL HEALTH

Communication played a significant role in emotional regulation and psychological well-being. One participant expressed, *"I feel that when we talk, we can relieve our depression. People feel depressed because they have no place to talk, to release their tension"* (Participant 16). Another noted that lack of interaction affects self-confidence: *"If there are no interactions, Even when meeting people, I feel like I may become not confident"* (Participant 2).

3. SOCIAL CONNECTION AND BELONGING

Communication with friends, family, and community supports social connection and belonging. One participant shared, *"That's another activity which gives you some satisfaction that even after retirement, you are still a useful member of society"* (Participant 15), referring to communication during community activities like *gotong-royong*. Another highlighted friendship building: *"Because we are friends, that person may open up... you can offer some advice... you are maintaining your friendship"* (Participant 10).

4. PROMOTION OF PHYSICAL HEALTH

Communication promotes physical health by increasing awareness, encouraging healthy behaviours, and improving healthcare access. One participant described motivating exercise: *"By sharing with others we say, 'come out man, let's go for a walk'... So the person joins one day and then they like it"* (Participant 8). Another emphasised healthcare communication: *"If you don't communicate, how do you know? The doctor doesn't talk to the patient. How does the doctor know what's wrong?"* (Participant 22).

CHALLENGES FACED BY ELDERLY INDIVIDUALS

Four key themes capture communication difficulties:

1. AGE-RELATED HEARING DIFFICULTIES

Participants reported hearing loss as a key challenge. One remarked, *"Some people, as they age, their hearing becomes problematic... People say A, they hear B"* (Participant 4). Another added, *"When they can't hear, they won't understand"* (Participant 1).

2. SPEECH AND LANGUAGE PROCESSING CHALLENGES

Older adults experience speech clarity issues, repetitive speech, and word-finding difficulties. One participant shared, *"We tend to be repetitive. We say something and we feel these children have not heard me"* (Participant 15). Another noted, *"At this age, I realize sometimes I tend to talk too fast"* (Participant 10). Articulation issues were reported: *"When you talk to them, they mumble"* (Participant 6).

3. EMOTIONAL SENSITIVITY IN COMMUNICATION

Emotional sensitivity affects communication engagement. One participant reflected, *"We are becoming sensitive. Small things... I just keep quiet. I don't want to talk back"* (Participant 14).

4. INTERGENERATIONAL GAPS

Generational differences create communication barriers. One participant shared, *"Outside people, we talk. At home we don't talk when our children don't listen to us"* (Participant 23). Another added, *"What we say, it's not relevant for them anymore"* (Participant 7). Language differences emerged: *"Young people have their own words, abbreviations, and jokes that we cannot join in on"* (Participant 16).

EFFECTS OF VERBAL COMMUNICATION CHALLENGES

Four themes illustrate negative impacts:

1. MISCOMMUNICATION RESULTING FROM HEARING LOSS

Hearing loss contributes to misunderstandings. One participant expressed, *"Sometimes they don't hear properly. Actually the person wasn't angry, but they thought the person was angry"* (Participant 2).

2. RELUCTANCE TO COMMUNICATE DUE TO SPEECH DIFFICULTIES

Speech difficulties lead to communication avoidance. Participants noted, *"Our conversation is not fluent"* (Participant 18) and *"We want to say the correct thing, but we can't"* (Participant 19). One shared, *"Because they mumble... you can't hear. That's why I'm so irritated. Next time I don't want to talk to you"* (Participant 6).

3. EMOTIONAL DISTRESS TRIGGERED BY VERBAL OUTBURSTS

Emotional sensitivity results in distress. One participant expressed, *"There's an outburst of your emotions... you break and then you keep on blaming yourself... When you are not happy, you will never be happy"* (Participant 7).

4. COMMUNICATION BREAKDOWN FROM INTERGENERATIONAL GAPS

Generational differences cause emotional strain and withdrawal. One participant described, *"That makes us a bit inhibited. We don't open up so easily"* (Participant 15). Another explained, *"Just keep quiet... If they don't listen, just keep quiet... We must take care of our own mental health"* (Participant 10).

DISCUSSION

Verbal communication emerges as a fundamental catalyst for healthy ageing, operating through interconnected mechanisms that simultaneously enhance cognitive, emotional, social, and physical well-being among older adults. This multidimensional impact demonstrates communication's unique position as both a protective factor against age-related decline and an active promoter of continued growth and adaptation in later life.

The cognitive benefits of verbal communication extend beyond simple mental stimulation to encompass complex neuroplastic processes that maintain and enhance cognitive reserve. Participants' experiences of staying "mentally alert" through conversation align with emerging neuroscience evidence showing that regular verbal interaction activates multiple brain regions simultaneously, including language processing areas, memory centres, and executive function networks. Kim and Kim (2017) demonstrated that older adults engaging in frequent speaking, reading, or writing activities showed superior performance on cognitive and language tasks, but the current findings suggest this relationship is particularly pronounced in spontaneous, socially embedded communication contexts. The act of sharing knowledge and advice, as described by participants, represents a sophisticated cognitive process involving memory retrieval, linguistic formulation, and social cognition. This finding extends existing research by highlighting how communication serves not merely as cognitive exercise but as a vehicle for maintaining cognitive identity and expertise. The bidirectional nature of conversational learning—where participants both impart and receive knowledge—creates a dynamic cognitive ecosystem that challenges traditional views of aging as purely decline-oriented, suggesting that communication interventions should focus on creating opportunities for older adults to serve as knowledge contributors rather than passive recipients.

Building upon these cognitive foundations, the emotional regulation benefits of communication operate through multiple psychological mechanisms that extend beyond simple social support. Participants' descriptions of communication as emotional "release" and stress reduction align with Relational Regulation Theory (Lakey & Orehek, 2011), but the current findings reveal additional layers of emotional complexity. The process of verbalizing emotions appears to activate both cognitive reappraisal mechanisms and social validation processes, creating a dual pathway for emotional regulation that may be particularly effective for older adults experiencing multiple life transitions. Zhang et al. (2024) found that verbal expression of positive emotions improved mood and reduced psychological distress, but the current study reveals that even routine conversation—not specifically focused on positive emotion expression—provides significant emotional benefits. This suggests that the regulatory mechanism involves the communicative process itself rather than solely the emotional content. The finding that participants felt more confident through regular interaction indicates that communication builds emotional resilience by maintaining social identity and self-efficacy, critical factors for successful aging. The preventive aspect of communication emerges clearly from participant accounts, as the fear of losing confidence without interaction suggests that communication serves as an emotional maintenance system, preventing deterioration rather than simply responding to distress.

These individual cognitive and emotional benefits translate into broader social integration patterns that transcend personal relationship maintenance to encompass community belonging and intergenerational continuity. Participants' experiences of feeling "useful" through communication during community activities reveal how verbal interaction serves as a mechanism for maintaining social identity and purpose beyond traditional work roles. This finding extends Lindsay-Smith et al.'s (2018) research on community group participation by demonstrating that the communicative aspects of such participation may be the primary active ingredient in reducing loneliness and fostering belonging. The concept of "gotong-royong" mentioned by participants provides important cultural context for understanding how communication facilitates social integration in Malaysian society. This traditional cooperative practice demonstrates how communication becomes embedded within culturally meaningful activities, suggesting that effective interventions must consider cultural communication patterns and values. The ability to offer advice and maintain friendships through communication represents a form of social capital that older adults can continue to develop and contribute, challenging deficit-based models of ageing. The

intergenerational implications of these findings are particularly significant, as while participants experienced communication barriers with younger generations, their enhanced peer communication suggests that age-segregated communication opportunities may serve important functions while intergenerational communication skills are being developed or supported.

The social dimensions of communication ultimately connect to tangible physical health outcomes through both direct healthcare interactions and indirect peer influence mechanisms that create comprehensive health-promoting environments. Participants' descriptions of encouraging each other to exercise demonstrate how communication serves as a vector for health behaviour transmission within peer networks. This peer influence mechanism may be particularly powerful among older adults who share similar health challenges and life experiences. The healthcare communication findings reveal critical implications for patient-provider relationships, as participants' recognition that effective doctor-patient communication is "60%" essential for health outcomes aligns with Sharkiya's (2023) research on patient-centred care, but the current findings emphasise the elderly patient's perspective on communication as a collaborative rather than hierarchical process. The participant's observation that "the doctor is not God" reflects a sophisticated understanding of communication as necessary for accurate diagnosis and appropriate care. Webel et al.'s (2010) research on peer-based health interventions gains new relevance when considered alongside the current findings about spontaneous peer health communication, as the informal health knowledge sharing described by participants suggests that structured peer health programs might leverage naturally occurring communication patterns rather than imposing external frameworks.

Synthesising these interconnected findings reveals that communication functions as a meta-intervention for healthy ageing, simultaneously addressing multiple domains of well-being through interconnected mechanisms. The cognitive, emotional, social, and physical benefits do not operate independently but create synergistic effects that amplify overall impact. For instance, the cognitive stimulation of sharing advice enhances emotional well-being through increased self-efficacy, which in turn promotes social engagement and physical activity encouragement. This multidimensional impact model has important implications for intervention design and healthcare policy, as, rather than addressing communication as a single therapeutic target, these findings suggest that communication-focused interventions could serve as comprehensive healthy ageing programs addressing multiple risk factors simultaneously. The cost-effectiveness implications are significant, particularly for healthcare systems preparing for population ageing.

Within this broader theoretical framework, the Malaysian cultural context provides unique insights into how communication patterns intersect with healthy aging in multicultural societies. The emphasis on spirituality and community connections found in previous Malaysian aging research (Tohit et al., 2021) appears to be mediated through communication processes that maintain both individual well-being and cultural continuity. The multilingual nature of Malaysian society adds complexity to communication patterns that may both challenge and enrich aging experiences. The findings suggest that culturally responsive communication interventions must consider not only language preferences but also cultural communication styles, intergenerational expectations, and community participation patterns. This cultural specificity does not limit generalizability but rather highlights the importance of adapting universal communication principles to local contexts and values.

LIMITATIONS

Several limitations must be acknowledged. Gender imbalance with predominantly female participants limits male perspectives. Chinese participants were underrepresented despite Malaysia's multicultural context. Question phrasing may have influenced responses. Manual thematic analysis, while promoting data engagement, may reduce transparency compared to software-assisted analysis.

CONCLUSION

This study reveals that communication functions as a cornerstone of healthy ageing among Malaysian elderly, operating through sophisticated interconnected mechanisms that simultaneously enhance cognitive vitality, emotional resilience, social integration, and physical well-being. The findings challenge traditional deficit-based models of ageing by demonstrating how older adults actively leverage communication to maintain and even develop new capacities for growth, learning, and community contribution. Rather than viewing communication simply as a tool to maintain existing function, this research positions verbal interaction as a dynamic catalyst for continued development and adaptation throughout the ageing process.

The four key roles of communication identified i.e. cognitive stimulation, emotional regulation, social connection, and physical health promotion, do not operate in isolation but create synergistic effects that amplify overall well-being outcomes. This multidimensional impact suggests that communication-focused interventions could serve as comprehensive healthy ageing programs, offering cost-effective approaches to addressing multiple risk factors simultaneously. The bidirectional nature of communication benefits, where older adults serve as both knowledge contributors and recipients, highlights the importance of designing interventions that recognise and utilise elderly individuals' expertise and wisdom rather than positioning them solely as service recipients.

However, the study also illuminates significant communication barriers that threaten these benefits. Age-related hearing difficulties, speech and language processing challenges, emotional sensitivity, and intergenerational communication gaps create complex obstacles that can lead to social withdrawal, emotional distress, and reduced quality of life. These challenges are not merely individual deficits but reflect broader systemic issues, including ageist attitudes, inadequate healthcare communication training, and cultural shifts that undervalue intergenerational exchange. The cascading effects of communication difficulties, from hearing loss leading to miscommunication, to speech difficulties causing social avoidance, demonstrate how small impairments can create large-scale impacts on ageing experiences.

The Malaysian cultural context provides crucial insights into how communication patterns intersect with healthy ageing in multicultural societies. The emphasis on community cooperation through practices like gotong-royong, the multilingual communication landscape, and the spiritual dimensions of ageing identified in previous research all appear to be mediated through communication processes. This cultural specificity does not limit the findings' relevance but rather demonstrates the importance of developing culturally responsive approaches that honour local communication traditions while addressing universal ageing challenges.

These findings have profound implications for speech-language therapy practice and healthcare policy. Speech-language therapists are uniquely positioned to develop holistic interventions that

address not only communication disorders but also leverage communication's broader health-promoting potential. Such interventions should focus on creating opportunities for meaningful peer interaction, supporting healthcare communication skills, facilitating intergenerational dialogue, and addressing cultural communication preferences. The preventive potential of communication interventions suggests that early investment in communication support could yield significant long-term benefits for both individual well-being and healthcare system sustainability.

Future research should explore the development and evaluation of culturally appropriate communication intervention models that can be implemented across clinical and community settings. Particular attention should be given to training family members, healthcare providers, and community organisations in effective communication strategies with older adults. Additionally, research investigating the optimal timing, intensity, and delivery methods for communication interventions could inform evidence-based practice guidelines. The intergenerational communication challenges identified warrant specific attention, as bridging these gaps could enhance both elderly well-being and broader social cohesion.

This research contributes essential knowledge to the emerging field of positive ageing by demonstrating communication's central role in maintaining and promoting health across multiple domains. The findings support a paradigm shift from viewing ageing as inevitable decline toward recognising ageing as a period of continued potential for growth, contribution, and adaptation—with communication serving as the primary vehicle for realising this potential. For Malaysia as it approaches becoming an aged nation by 2030, these insights offer valuable guidance for developing comprehensive, culturally appropriate strategies to support healthy ageing across its diverse population.

Ultimately, this study underscores that healthy ageing is fundamentally a communicative achievement—maintained through ongoing verbal interaction that keeps older adults cognitively engaged, emotionally supported, socially connected, and physically motivated. Recognising and supporting this communicative foundation of healthy ageing represents both a professional opportunity for speech-language therapists and a societal imperative for communities preparing to support rapidly ageing populations. The quality of communication available to older adults may well determine not only their well-being but the overall success of societies in achieving the goal of healthy ageing for all.

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**SPATIAL DIVERGENCE IN AGEING AND DEPENDENCY BURDEN ACROSS
ADMINISTRATIVE DISTRICTS IN SARAWAK (2010–2020)**

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ABSTRACT

The demographic megatrend of population ageing presents profound challenges for Malaysia's development agenda, particularly in East Malaysian states like Sarawak, where the pace of demographic transition is regionally uneven. While national-level projections forecast Malaysia becoming an aged nation by 2030, subnational disparities in ageing patterns and dependency burden are rarely analysed in spatially explicit terms. This gap limits the ability of local policymakers to plan for age-related pressures on social infrastructure, healthcare, and economic productivity. This study aims to examine the spatial divergence of ageing and dependency burden across administrative districts in Sarawak between 2010 and 2020. Using demographic data from the Department of Statistics Malaysia, the study calculates two key indicators: the Old-Age Dependency Ratio (OADR) and the Total Dependency Ratio (TDR). To identify spatial clusters of significant demographic burden, Hotspot Analysis (Getis-Ord G_i^*) was applied to 2020 data. Additionally, K-means Cluster Analysis was employed to classify districts into distinct ageing profiles based on their demographic transition rates and elderly population growth. The findings

reveal growing spatial inequality in ageing and dependency trends across the state. Several central and interior districts emerged as ageing hotspots with significantly higher OADR values. The cluster analysis identified five distinct district typologies (Clusters A–E), highlighting regions with rapid demographic ageing and those with persistently youthful structures. These insights demonstrate the heterogeneous nature of demographic ageing and challenge the applicability of one-size-fits-all policies. The study underscores the value of spatial analytical methods for informing decentralised policy design. By pinpointing regional disparities, the results support more targeted and equitable distribution of social services, healthcare infrastructure, and ageing-related interventions, critical for achieving inclusive and resilient demographic outcomes in line with national family and population development goals.

Keywords: Population Ageing, Dependency Ratio, Spatial Analysis, Social Policy, Demographic Clustering.

INTRODUCTION

Population ageing is accelerating across East and Southeast Asia and is reshaping Malaysia's development trajectory. Malaysia crossed the conventional ageing threshold of at least seven per cent of the population aged 65 years and over around 2020 and is widely projected to become an aged society at fourteen per cent by the mid-2040s and a super-aged society at twenty per cent by the mid-2050s (World Bank, 2020; UN DESA, 2023). These shifts carry macro-level implications for labour supply, long-term care, health financing and social protection, and they feature prominently in national reform agendas and international guidance on healthy ageing (Ministry of Health Malaysia, 2023; United Nations, 2021; World Bank, 2020). Global assessments underline the speed of demographic transition in Asia compared with the historic experience of Western Europe, highlighting the need for anticipatory rather than reactive policy responses (Third World Network, 2023; World Bank, 2015).

Beneath national averages, Sarawak exhibits a faster and more uneven ageing trajectory that warrants spatially explicit analysis. State leaders and media reports indicate that Sarawak could attain aged status as early as 2028, with some districts already displaying high shares of older residents; Lubok Antu, for instance, has been reported with about 15.7 per cent of residents aged 65 years and over (Harian Metro, 2022; UKAS, 2024). District-scale estimates by the Department of Statistics Malaysia further show that Subis crossed the seven per cent threshold in 2025, illustrating how the onset of ageing is not simultaneous across districts (Department of Statistics Malaysia, 2025). In response, Sarawak has intensified policy attention through events such as the Sarawak International Conference on Ageing (SICA) 2025 and through programmes that expand access to primary care and social support for older persons under the Post-Covid-19 Development Strategy 2030 (Bernama/TVS, 2025; UKAS, 2025). These developments underscore an evidence gap that this study addresses: identifying where ageing and dependency burdens concentrate within Sarawak and how those patterns align with service needs and infrastructure readiness.

This paper examines spatial divergence in ageing and dependency across Sarawak's administrative districts from 2010 to 2020 using district-level tabulations from the Department of Statistics Malaysia. Two internationally comparable indicators are employed: the Old-Age Dependency Ratio (OADR), defined as the number of persons aged 65 years and over divided by the number of persons aged 15–64 years, multiplied by 100; and the Total Dependency Ratio (TDR), defined as the number of persons aged 0–14 years together with persons aged 65 years and over divided by the number of persons aged 15–64 years, multiplied by 100 (FAO, 2022; Hayes, 2025; OECD, 2025). To detect locations where the burden of old age is significantly high or low relative to

neighbouring districts, we apply Hotspot Analysis (Getis–Ord G_i^*) to the 2020 value of the OADR; the procedure yields z-scores, p-values and G_i Bin confidence classes that distinguish statistically significant hot and cold spots (Esri, 2025). To support policy segmentation, we then group districts using K-means clustering with a feature set that combines levels and changes: OADR 2010, OADR 2020, the percentage-point change in OADR from 2010 to 2020, the percentage change in the population aged 65 years and over from 2010 to 2020, and the TDR in 2020.

The study makes three contributions. First, it provides a statistically validated map of hot spots and cold spots for OADR 2020 across Sarawak's districts, moving beyond descriptive cartography to local statistical inference. Second, it develops a policy-oriented district typology that integrates both levels and decade-long change, enabling needs-based prioritisation such as immediate scaling in districts that already shoulder high old-age dependence and early preparation in districts that remain youthful but are ageing quickly. Third, it translates these spatial diagnostics into actionable guidance aligned with national and state frameworks, including healthy-ageing programmes, primary-care strengthening and the reform pathway set out in the Health White Paper (Ministry of Health Malaysia, 2023; United Nations, 2021; World Bank, 2020). By bringing together standard demographic ratios, local spatial statistics and unsupervised segmentation, the paper offers decision-ready evidence for targeted allocation of ageing-related services in Sarawak.

LITERATURE REVIEW

Population ageing is commonly framed by demographic transition theory, in which sustained mortality decline followed by fertility decline reconfigures age structures toward older cohorts and slower growth. Contemporary accounts often add a fifth stage, where fertility remains below replacement and population may contract while ageing accelerates (Roser, 2023; Socio Health, 2025). For policy analysis, two summary indicators are standard: the OADR, the number of persons aged 65+ per 100 persons aged 15–64; and the TDR, the number of persons aged 0–14 together with 65+ per 100 persons aged 15–64 (FAO, 2022; Hayes, 2025; OECD, 2025).

Ageing is advancing rapidly worldwide, with Asia contributing the largest share of the global increase in older persons this century. UN and World Bank syntheses emphasise the pace of transition in East and Southeast Asia, where the share of older persons is doubling within a few decades, far faster than in the historic European experience, implying sharper near-term adjustments in health financing, pensions and eldercare systems (UN DESA, 2023; World Bank, 2015). Official statistics and analytical briefs highlight the drivers of this shift, fertility decline, longevity gains and migration, underscoring the need for anticipatory reforms rather than reactive responses (U.S. Census Bureau, 2022; Socio Health, 2025).

Malaysia crossed the ageing-society threshold in the early 2020s and is on course to reach aged-society status in the 2040s, with super-aged status projected by the mid-2050s (World Bank, 2020; UN DESA, 2023). National policy documents identify four persistent concerns: labour-force headwinds as the working-age share declines, rising demand for long-term and chronic care services, pressure on health financing, and the adequacy of pensions and social protection (Ministry of Health Malaysia, 2023; Bernama, 2025). DOSM's recent communiqués also record the spread of ageing across multiple states and districts, signalling widening subnational disparities that national averages can mask (DOSM, 2025a; DOSM, 2025b). Within this policy context, OADR and TDR have become central metrics for monitoring demographic pressure and guiding allocation decisions.

A growing body of work documents Sarawak's long-run transition toward older age structures and the spatial concentration of senior populations. Over 1980–2020, district-level and GIS-based analyses show intensifying senior-citizen density in urban and peri-urban corridors, while interior districts exhibit distinct ageing profiles shaped by migration and access constraints (Ali et al., 2025a; Ali et al., 2025b). Complementary analyses emphasise how ethnic composition intertwines with ageing patterns in a multi-ethnic state, with implications for equitable provision of services (Ali et al., 2025c). Administrative releases and state communications further underline uneven service capacity across interior–coastal divides, strengthening the case for needs-based programming rather than one-size-fits-all approaches (UKAS, 2024; The Star, 2025). Together, these studies establish the empirical basis for district-scale enquiry and motivate formal spatial inference.

Most Malaysian and Sarawak studies remain descriptive, using choropleths or simple rankings of elderly shares. Recent Sarawak work has advanced the field by integrating multi-decadal census counts with GIS to map shifts in senior density (Ali et al., 2025a), yet the literature still under-utilises local spatial statistics that can identify statistically significant clusters where high or low dependence is embedded within neighbouring contexts. The Getis–Ord G_i^* statistic evaluates each spatial unit relative to its neighbours and yields z-scores, p-values and G_i^* Bin confidence classes that demarcate hot and cold spots, offering clearer signals for service targeting than visual inspection alone (Esri, 2025). For policy segmentation, K-means clustering groups districts using both levels (OADR 2010, OADR 2020, TDR 2020) and decadal changes (percentage-point change in OADR 2010–2020, percentage change in the 65+ population 2010–2020), producing typologies that are intelligible to decision-makers.

Regional and Malaysian evidence points to several correlates of district-level ageing: urbanisation and peri-urban expansion; selective youth out-migration from interior regions; differences in education and ethnic composition; and uneven access to health facilities and social care (UN DESA, 2023; U.S. Census Bureau, 2022; UKAS, 2024). These factors shape heterogeneous trajectories across Sarawak, implying that the same OADR level can carry different service implications depending on spatial context, another rationale for combining local clustering with typologies that integrate both levels and change.

District-scale analysis benefits from DOSM's censuses and intercensal estimates but must account for boundary changes, the modifiable areal unit problem and small-area volatility, each of which can affect cluster detection and the stability of typologies across time. Harmonising boundaries and clearly stating the chosen conceptualisation of spatial relationships in ArcGIS Pro are therefore necessary to support valid longitudinal comparisons and transparent inference (DOSM, 2025a; Ministry of Health Malaysia, 2023; Esri, 2025). The literature establishes the speed of Asia's demographic transition, Malaysia's entry into sustained ageing, and Sarawak's pronounced within-state variation. What remains limited are district-scale statistical identification of hot and cold spots of old-age burden and policy-readable typologies that integrate levels and decadal change. This study addresses those gaps by applying Getis–Ord G_i^* to OADR 2020 and K-means clustering on a compact set of level-and-change indicators to derive interpretable district profiles that can inform needs-based allocation in Sarawak.

METHODOLOGY

Data and Study Area

The study covers all 40 administrative districts in Sarawak. District-level demographic statistics for 2010 and 2020 were sourced from the Department of Statistics Malaysia (DOSM), including the population aged 0–14, 15–64, and 65 years and over. From these, the OADR, TDR and decadal changes (2010–2020) were computed. District boundaries were harmonised to the 2020 administrative geometry to enable consistent temporal comparison. All spatial analysis and mapping were conducted in ArcGIS Pro.

The key indicators were defined as follows (FAO, 2022; Hayes, 2025; OECD, 2025):

- i. Old-Age Dependency Ratio (OADR):

$$\text{OADR} = \frac{\text{Population aged 65 +}}{\text{Population aged 15 – 64}} \times 100$$

- ii. Total Dependency Ratio (TDR):

$$\text{TDR} = \frac{\text{Population aged 0 – 14 + 65 +}}{\text{Population aged 15 – 64}} \times 100$$

Decadal changes were expressed as: (i) absolute percentage-point change in OADR (OADR 2020 – OADR 2010) and (ii) percentage change in the 65+ population between 2010 and 2020.

These definitions follow international practice and are widely used to benchmark demographic support pressures (FAO, 2022; OECD, 2025; Hayes, 2025).

Hotspot Analysis and District Typologies

Hotspot Analysis (Getis–Ord G_i^*) was applied to district-level OADR values for 2020 to identify statistically significant spatial clusters of high and low ageing burden across all 40 Sarawak districts. The analysis used the Timbalai 1948 / RSO Borneo projected coordinate system, with a k-nearest-neighbour spatial conceptualisation ($k = 8$) and row standardisation. False Discovery Rate (FDR) correction was enabled to control for multiple-testing effects. Statistical significance was assessed using $G_iZScore$ and $G_iPValue$ outputs at 99%, 95% and 90% confidence levels, producing discrete hot spots (higher-than-expected ageing burden) and cold spots (lower-than-expected ageing burden) (Esri, 2025).

This analytical strategy aligns with recent Malaysian applications in criminology, where Global Moran's I and local Getis–Ord G_i^* have been combined to quantify spatial autocorrelation and detect statistically significant hot and cold spots of property crime across police station jurisdictions in major urban centres (Ahmad et al., 2024). Their work demonstrates how G_i^* -based hot spot maps, interpreted through z-scores, p-values and G_i_Bin classes, can yield decision-ready evidence for targeting resources in high-burden locations, a logic that is adapted here to the context of demographic ageing rather than crime.

K-means clustering was then applied to five standardised indicators, OADR 2010, OADR 2020, absolute change in OADR (percentage points), percentage change in the 65+ population, and TDR 2020, to derive district typologies. The optimal number of clusters was selected using the elbow and silhouette criteria, resulting in $k = 5$. The algorithm was initialised with a fixed random seed to ensure reproducibility. Cluster outputs were visualised using radar plots to profile relative indicator magnitudes across ageing dimensions and mapped to show the spatial distribution of cluster types.

RESULTS AND DISCUSSION

District-Level Clustering of Old-Age Burden (Gi on OADR 2020)*

Seven districts form a statistically significant hot-spot belt: Lubok Antu and Kanowit (99% confidence; GiZ = 3.690 and 3.242), Sri Aman, Betong, Song and Julau (95%; GiZ = 2.674, 2.527, 2.331, 2.633), and Pakan (90%; GiZ = 2.085). A broad northern/interior cold zone comprises six 99% cold spots, Subis (GiZ = -4.206), Beluru (-4.091), Belaga (-3.581), Sebauh (-3.573), Telang Usan (-3.504) and Miri (-3.147), and four 95% cold spots, Limbang (-2.744), Lawas (-2.769), Marudi (-2.744) and Bintulu (-2.489). The remaining 23 districts show no significant clustering ($p > 0.10$).

These patterns indicate a central–southern corridor of elevated old-age dependence contrasted with a pronounced northern/interior cold belt, sharpening signals beyond descriptive choropleths and pointing to differentiated service needs. Districts in the hotspot belt are likely to face tighter constraints on working-age carers and greater demand for geriatric-friendly services, while cold-spot districts still enjoy relatively youthful structures but may experience rapid change in the coming decades (UN DESA, 2023; World Bank, 2015).

Table 1. Descriptive statistics for district-level indicators, Sarawak, 2010 and 2020 (n = 40)

	Indicator	Mean	Min	Max	SD
OADR 2010 (per 100)		10.55	3.68	17.95	3.28
OADR 2020 (per 100)		11.91	3.72	19.93	3.87
Change in OADR 2010–2020 (percentage points)		14.71	-52.82	56.30	24.40
Change in population aged 65+ 2010–2020 (%)		19.96	-62.68	88.93	30.74
Total Dependency Ratio (TDR) 2020 (per 100)		44.88	27.04	78.23	8.47

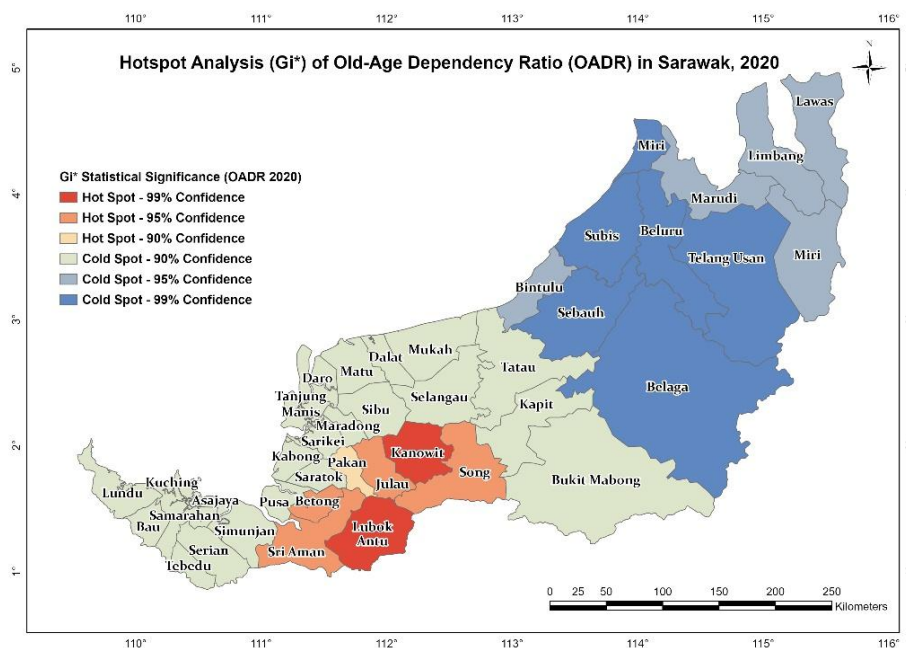


Figure 1. Hotspot Analysis (Getis–Ord Gi*) of OADR, 2020, by district

Typologies of ageing levels and trajectories (K-means profiles, 2010–2020)

Unsupervised clustering on the five indicators (OADR 2010, OADR 2020, change in OADR between 2010 and 2020, percentage change in the 65+ population, and TDR 2020) yields five interpretable district types, labelled A–E. Figure 2 presents the standardised radar profiles for each cluster, while Figure 3 maps their spatial distribution across Sarawak. Table 2 lists the specific districts belonging to each cluster, providing a direct link between statistical profiles and territorial units relevant for planning.

i. Cluster A (n = 14): Mature-ageing districts.

These districts exhibit high OADR in both 2010 and 2020 with moderate growth in the 65+ population. They are already carrying substantial old-age burden and should be prioritised for scaling geriatric-friendly primary care, rehabilitation outreach and community-based support services.

ii. Cluster B (n = 14): Fast-ageing districts.

Medium OADR combined with strong growth in both the 65+ population and the change in OADR. These fast-ageing places require proactive planning for workforce participation, transport and long-term care (LTC) before burdens peak (World Bank, 2015; Ministry of Health Malaysia, 2023).

iii. Cluster C (n = 1): Mixed-burden district.

Pusa stands alone with very high TDR but only moderate OADR, indicating simultaneous youth and old-age pressures on the working-age population. Policy responses here must balance investments in childcare, schooling and eldercare infrastructure to avoid overloading local systems.

iv. Cluster D (n = 8): Emerging-ageing districts.

These districts remain relatively low on OADR in both years but show very rapid growth in the 65+ population between 2010 and 2020. They represent “emerging-ageing” contexts where early, prevention-oriented interventions, such as age-friendly public spaces and primary care focused on chronic disease management, can be implemented while dependency levels are still comparatively low.

v. Cluster E (n = 3): Relatively youthful districts.

Cluster E comprises districts with persistently low OADR and limited change, consistent with relatively youthful age structures. For these areas, routine monitoring and integration of demographic indicators into development planning are adequate for now, although continued migration and fertility shifts could alter trajectories in the longer term.

These typologies convert raw ratios into actionable policy segments for needs-based allocation, consistent with calls in Malaysia’s Health White Paper and international guidance to move beyond one-size-fits-all responses (Ministry of Health Malaysia, 2023; UN DESA, 2023; World Bank, 2015).

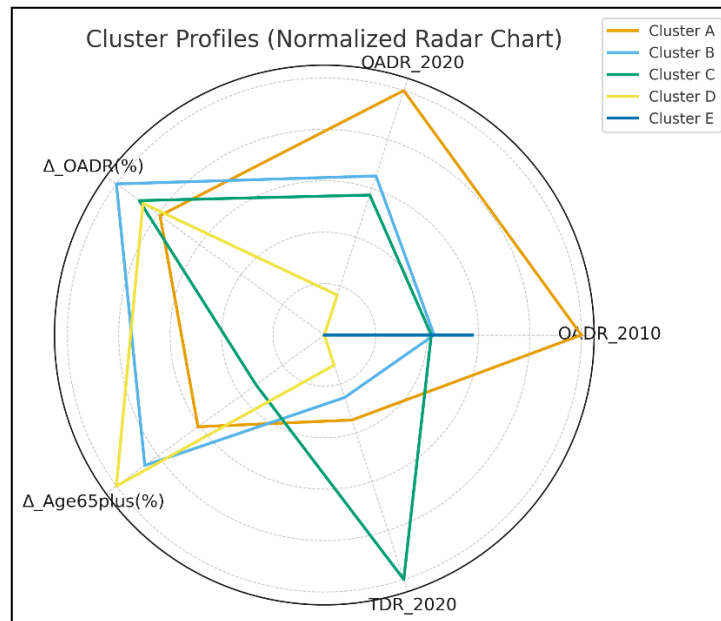


Figure 2. Cluster Profiles (Radar)

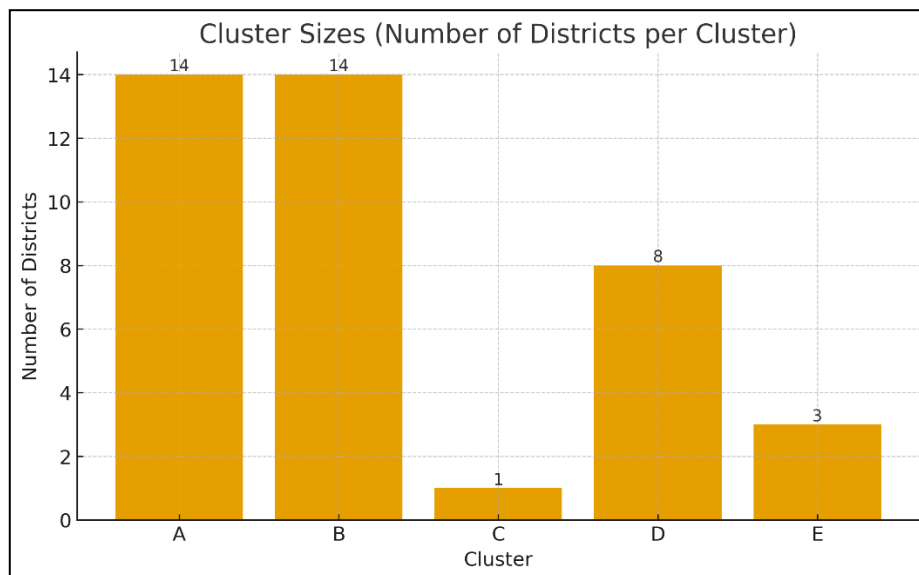


Figure 3. Cluster Sizes

Table 2. District membership by cluster (A–E) from K-means results (based on OADR 2010, OADR 2020, change in OADR 2010–2020, percentage change in population aged 65+, and TDR 2020), Sarawak, 2010–2020

Cluster	No. of districts	Districts
A	14	Asajaya, Betong, Bukit Mabong, Dalat, Julau, Kanowit, Lubok Antu, Maradong, Matu, Pakan, Selangau, Simunjan, Song, Sri Aman
B	14	Bau, Daro, Kabong, Kapit, Kuching, Lawas, Limbang, Lundu, Saratok, Sarikei, Serian, Sibu, Tanjung Manis, Tebedu
C	1	Pusa
D	8	Beluru, Bintulu, Miri, Mukah, Samarahan, Subis, Tatau, Telang Usan
E	3	Belaga, Marudi, Sebauh

Districts Leading the Transition (Ranked Changes, 2010–2020)

Ranking statistics highlight where trajectories are steepest:

- OADR (2010–2020). The largest percentage-point increases appear in Miri, Sarikei, Sibu, Tanjung Manis, Kuching, Serian, Lubok Antu, Sri Aman, Limbang and Lawas (Figure 4). These districts are ascending quickly toward older structures, even when current OADR is not yet extreme, an early-warning signal for labour markets and LTC capacity (World Bank, 2015).
- Population aged 65+ (2010–2020). The fastest proportional growth in older persons occurs in Samarahan, Miri, Kuching, Sibu, Beluru, Lundu, Bintulu, Sri Aman, Lawas and Limbang (Figure 5). This reinforces the urban–peri-urban expansion of senior cohorts along growth corridors, echoing prior work that links urbanisation and migration to subnational ageing (Ali et al., 2025a; U.S. Census Bureau, 2022).

By focusing on top increases, the paper avoids redundancy with the hotspot map while flagging districts that deserve anticipatory investments despite not being 2020 hot spots.

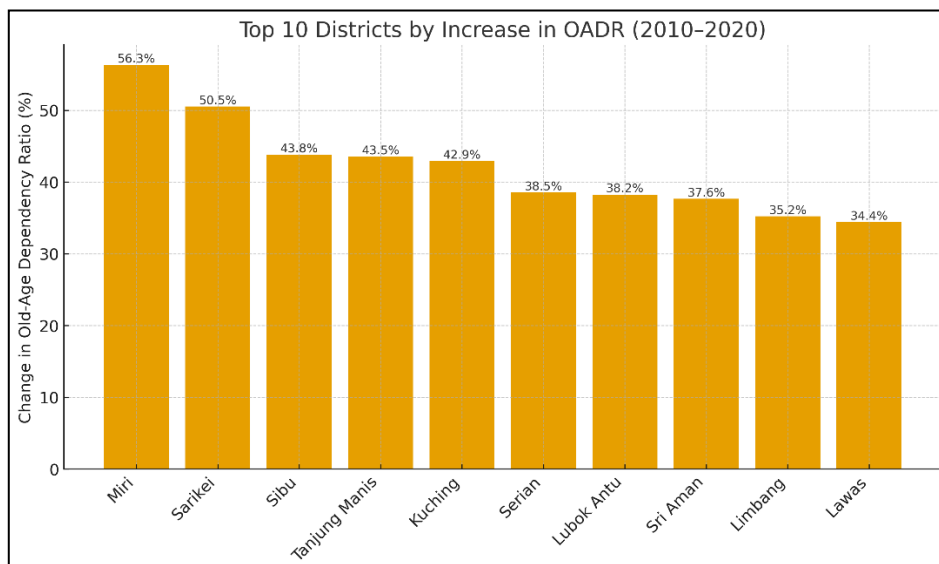


Figure 4. Top 10 Districts by Increase in OADR (2010–2020)

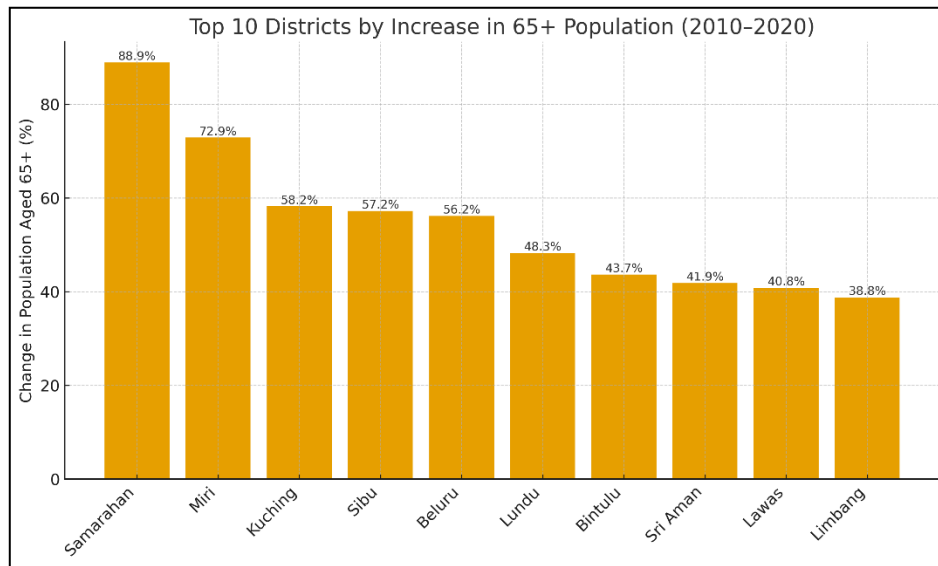


Figure 5. Top 10 Districts by Increase in Population Aged 65+ (2010–2020)

Policy implications

The central–southern hotspot belt, the rapidly ageing Cluster B districts and the urban–peri-urban rise in the 65+ population motivate three immediate policy directions:

- i. Targeted primary care and long-term care.
Concentrate geriatric-friendly primary care, rehabilitation outreach and transport assistance in Cluster A hotspot districts, and stage additional capacity in Cluster B districts before thresholds are crossed (Ministry of Health Malaysia, 2023).
- ii. Needs-based social protection and labour measures.
Use OADR, TDR and cluster class to calibrate locality-specific subsidies, caregiver support, re-skilling for older workers and age-friendly public transport, especially where fast ageing coincides with socio-economic vulnerability (UN DESA, 2023; World Bank, 2015, 2020).
- iii. Monitoring and boundary-aware planning.
Maintain district dashboards with harmonised administrative boundaries to track annual changes in OADR and the 65+ share, explicitly acknowledging modifiable areal unit and intercensal-estimation limitations (DOSM, 2025a; Esri, 2025).

These actions translate the study’s spatial diagnostics into differentiated, evidence-based pathways for Sarawak’s districts and provide a reproducible template for subnational ageing policy.

Limitations

Findings should be read with four caveats. First, district harmonisation and intercensal estimation can introduce small-area volatility, particularly where population counts are low. Second, Gi* outcomes are sensitive to the specification of spatial weights; this analysis used k-nearest neighbours ($k = 8$) with row standardisation, and alternative conceptualisations may yield slightly different local clusters, a point that has also been highlighted in Malaysian applications of hot spot analysis to crime data (Ahmad et al., 2024). Third, multiple testing in local statistics can inflate significance; False Discovery Rate (FDR) correction was applied but cannot fully eliminate this

risk, mirroring concerns raised in other spatial hot spot studies. Finally, structural ratios (OADR, TDR) do not capture morbidity, disability or effective care need; future work should integrate service utilisation and health-state measures to move from structural burden to actual demand (Ministry of Health Malaysia, 2023; UN DESA, 2023).

CONCLUSION

This study examined how population ageing and dependency burdens diverge across Sarawak's administrative districts between 2010 and 2020 using district-level indicators, OADR, TDR and changes in the population aged 65 years and over, combined with local spatial statistics (Getis-Ord G_i^*) and K-means clustering. The analysis identified a central-southern belt of statistically significant old-age burden hotspots in 2020 and a contrasting northern corridor of cold spots, alongside districts that have experienced the steepest increases in OADR and growth of older residents over the decade.

Three results stand out. First, ageing is spatially clustered rather than uniformly distributed: neighbouring districts share similar burdens, implying shared service constraints and opportunities for regional coordination. Second, trajectories differ from levels: several districts with moderate 2020 values are ageing fast and will cross pressure thresholds soon if unaddressed. Third, typologies are actionable: five cluster profiles translate heterogeneous indicators into policy-relevant groups that distinguish mature-ageing districts from fast-transition districts and mixed-burden contexts.

The implications are direct. Districts in the hotspot belt should be prioritised for geriatric-friendly primary care, rehabilitation outreach and mobility support; fast-transition districts should stage capacity early (workforce retention, prevention and community-based care) before dependency peaks; and mixed-burden districts require calibrated social protection that balances youth and elder needs. Using OADR and TDR with the cluster labels provides a transparent, reproducible basis for needs-based allocation and monitoring at the district scale, in line with Malaysia's healthy-ageing and social-protection agendas (Ministry of Health Malaysia, 2023; UN DESA, 2023; World Bank, 2020).

This work has limitations. District harmonisation and intercensal estimation can introduce small-area volatility; local hot-spot results depend on the chosen spatial-weights specification; FDR adjustment mitigates but does not remove multiple-testing concerns; and structural ratios do not capture morbidity, disability or effective care need. Future research should integrate morbidity and functional-limitation measures, migration flows and facility utilisation to move from structural burden to service demand; test alternative spatial conceptualisations and robustness to boundary changes; and extend the panel beyond 2020 to track post-pandemic dynamics.

In sum, the study demonstrates that ageing and dependency in Sarawak are heterogeneous and spatially organised. By pinpointing where burdens are concentrated and where they are accelerating, the findings offer a concrete template for targeted, district-level planning in health, long-term care and social protection, while providing a replicable framework for other subnational settings undergoing rapid demographic transition. These spatially differentiated ageing patterns highlight concrete entry points for improving social welfare, strengthening labour-market resilience and refining public policies in line with the national agenda on productive and inclusive ageing.

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030-024

PERBANDINGAN POLA SINTAKTIK RUANG SOSIAL ANTARA PERUMAHAN B40 PERBANDARAN DAN RUMAH VERNAKULAR

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ABSTRACT

Dalam pembangunan bandar mampan, reka bentuk perumahan B40 perbandaran perlu dilihat bukan sekadar memenuhi keperluan fizikal, tetapi juga membentuk persekitaran sosial yang menyokong kesejahteraan komuniti. Kajian ini membandingkan dua konteks kediaman berbeza: perumahan B40 perbandaran di Lembah Klang dan rumah vernakular di pedalaman Semenanjung Malaysia. Setiap pelan lantai dianalisis menggunakan teknik space syntax bagi menonjolkan hubungan ruang secara visual dan pola penyusunan yang mempengaruhi interaksi dan struktur sosial. Rumah vernakular menunjukkan ciri perpaduan mekanikal melalui ruang terbuka, pelbagai akses, dan integrasi dengan alam sekitar, mewujudkan jaringan sosial yang saling bergantung. Sebaliknya, perumahan B40 perbandaran menyerupai perpaduan organik dengan akses tunggal dan pengasingan ruang, menjadikan interaksi sosial terbatas dan menekankan autonomi individu. Kajian ini menunjukkan bahawa rumah bukan sekadar tempat berteduh, tetapi medan sosial yang membentuk cara hidup, struktur sosial, dan hubungan antara manusia. Pemahaman terhadap integrasi ruang menyediakan panduan bagi merancang perumahan masa depan yang bukan sahaja memenuhi keperluan fizikal, tetapi juga menyokong interaksi sosial dan kesejahteraan komuniti.

Kata Kunci: Perumahan B40 Perbandaran, Rumah Vernakular, Space Syntax, Pola Ruang.

PENGENALAN

Dalam pembangunan bandar mampan, reka bentuk perumahan B40 perbandaran (perumahan untuk golongan berpendapatan rendah) perlu dilihat selari dengan isu sosial yang mendalam, khususnya berkaitan dengan kesejahteraan komuniti. Dalam kerangka sosiologi, wujud dua bentuk perpaduan yang berkait dengan susun atur ruang domestik, iaitu perpaduan mekanikal yang berasaskan interaksi berterusan dan saling bergantung, serta perpaduan organik yang bergantung kepada peranan khusus dan hubungan yang lebih terhad. Dalam konteks rumah vernakular ia dikaitkan sebagai ruang yang mendorong kepada perpaduan mekanikal manakala dalam persekitaran bandar moden, susun atur yang lebih berasingan cenderung mencerminkan ciri perpaduan organik (Yahya, 2024). Kefahaman terhadap perbezaan ini penting kerana ia memberikan asas untuk menilai sejauh mana reka bentuk perumahan sejajar dengan aspirasi SDG

11 yang menekankan akses kepada perumahan selamat, inklusif, dan mampan. Ia juga terkait dengan aspirasi SDG 3 yang menekankan kesejahteraan dan SDG 10 yang mendorong pengurangan ketidaksamaan, khususnya dalam konteks perumahan (Goh & Toh 2021).

Seperti yang ditekankan dalam *Sustainable Housing for Sustainable Cities* (UN-Habitat, 2012), pembangunan perumahan tidak seharusnya hanya memenuhi keperluan fizikal, tetapi juga membentuk persekitaran sosial yang berfungsi dan menyokong kesejahteraan bersama. Dalam kerangka ini, reka bentuk perumahan untuk golongan berpendapatan rendah (B40) di bandar wajar difahami sebagai satu instrumen sosial yang mempengaruhi pola interaksi harian dan struktur sokongan komuniti. Kajian ini bertujuan untuk meneliti perbezaan antara perumahan B40 perbandaran dan rumah vernakular, khususnya dari segi pola susun atur ruang domestiknya. Rumah vernakular lazimnya menggabungkan ruang bersama yang terbuka dengan ruang peribadi yang tersusun, manakala perumahan bandar moden lebih cenderung memisahkan fungsi sosial dan individu (Yahya 2024). Penelitian terhadap aspek ini membolehkan hubungan antara reka bentuk perumahan dan daya tahan komuniti bandar dilihat dengan lebih jelas, selaras dengan penekanan SDG 11 yang menyeru kepada penyediaan perumahan yang selamat, inklusif, dan mampu milik sebagai asas kepada kelestarian bandar (UN-Habitat, 2018).

KAJIAN LITERATUR

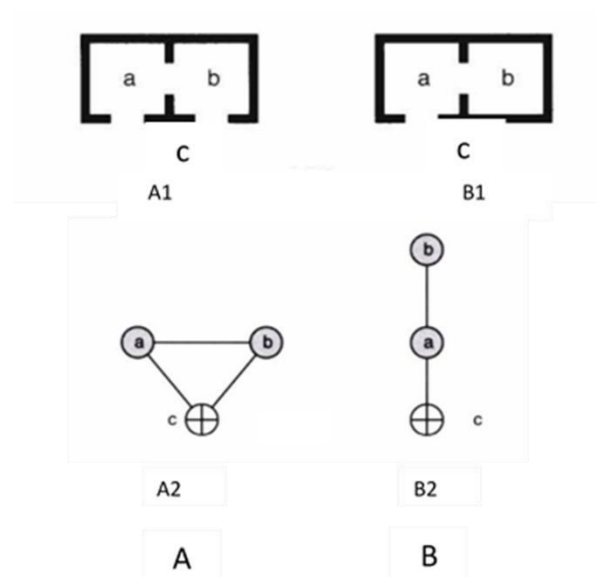
Masyarakat terbentuk apabila sekumpulan manusia hidup bersama dalam kawasan tertentu dan dipandu oleh budaya yang diamalkan (Wahyuni, 2007). Dalam pandangan Barat, Comte (1798–1857) melihat masyarakat sebagai kumpulan manusia yang berkembang berdasarkan peraturan dan pola tertentu (Saleh, 2008), manakala Mac Iver (1882–1970) menekankan jaringan hubungan dalam sistem kompleks yang mengawal tingkah laku manusia. Walaubagaimanapun, Ibnu Khaldun (1332–1406), telah mendahului kajian ini dimana kajian tersebut telah mengaitkan kemajuan masyarakat dengan perubahan sosial dan peradaban melalui generasi serta peranan adat, sosialisasi, dan pengaruh bandar dan desa (Muah, 2020; Saleh, 2008). Pada zaman moden pula Durkheim (1855–1917) pula membezakan masyarakat tradisional berasaskan perpaduan mekanikal dengan masyarakat moden berasaskan perpaduan organik, iaitu selari dengan pandangan Ibnu Khaldun tentang perubahan interaksi sosial dari desa ke bandar. Kedua-dua ahli sosiologi ini menegaskan bahawa perpaduan sosial lahir daripada kepentingan bersama dan membentuk kawalan sosial, serta bahawa tahap integrasi sosial menentukan kekuatan kawalan tersebut (Saleh, 2008).

Dalam wacana seni bina kontemporari, perumahan B40 di bandar sering dinilai dari segi kuantiti dan keberkesanan logistik, seolah-olah ruang bersifat neutral (Yahya et al., 2021). Namun, ruang membentuk interaksi dan struktur sosial (Hillier & Hanson, 1984; Hanson, 1998; Yahya et al., 2024; Ahmad et al., 2018), menjadikan perumahan lebih tepat difahami sebagai sistem sosial berbanding sekadar perlindungan fizikal. Reka bentuk kontemporari banyak mengadaptasi perpaduan organik yang menekankan pembezaan fungsi dan privasi individu (Putra, 2021). Dalam konteks perumahan B40 yang serba terhad, pendekatan ini sering menyebabkan ruang menjadi terasing dan kurang menyokong interaksi sosial (Yahya et al., 2022). Sebaliknya, perpaduan mekanikal dalam rumah vernakular mengutamakan keterhubungan ruang, misalnya serambi sebagai ruang separa awam (Yuan, 1987), halaman utama sebagai pusat sosial, dan tangga sebagai titik temu (Nasir & Teh, 1997), yang secara semula jadi memperkukuh jaringan komuniti.

Seni bina vernakular berfungsi sebagai sumber rekabentuk seni bina berasaskan pengetahuan tentang iklim, organisasi ruang, dan kualiti persekitaran (Rapoport, 1999; Hanson, 1998), sambil memanifestasikan hubungan sosial dan budaya dalam bentuk fizikal yang bermakna (Sadanand et al., 2021). Ia dipaparkan dalam susun atur ruang, dan menjadi kunci kepada kelestarian sosial (Hanson, 1998; Yahya, 2023). Kajian terdahulu (Seo, 2022; Bellal, 2004) menunjukkan bahawa prinsip kebolehtelapan (*permeability*) dan keterhubungan (*connectivity*) ruang vernakular dapat menjadi idea penting kepada reka bentuk perumahan moden. Namun, peralihan ke arah individualisme telah mengabaikan simbol sosial yang menjadi teras rumah vernakular (Rapoport, 1969; Saleh, 2008). Oleh itu, mengadaptasi semula elemen vernakular dalam perumahan moden dapat mewujudkan ruang yang bukan sahaja memenuhi keperluan fizikal, tetapi juga menyuburkan ekosistem sosial penghuninya.

METODOLOGI

Kajian ini menggunakan pendekatan perbandingan terhadap dua kajian kes yang mewakili konteks ruang kediaman berbeza. Kes pertama melibatkan perumahan B40 perbandaran di Lembah Klang, manakala kes kedua merangkumi rumah vernakular di kawasan pedalaman Semenanjung Malaysia. Pemilihan sampel dibuat secara persampelan bertujuan bagi memastikan kesesuaian dengan objektif kajian. Setiap sampel terdiri daripada pelan lantai kediaman yang dianalisis menggunakan teknik space syntax untuk menghasilkan data digramatik (Rajah 1) yang memaparkan hubungan ruang secara visual. Pendekatan ini membolehkan kajian mengenal pasti pola penyusunan ruang, termasuk pengaturan privasi, pembentukan laluan pergerakan, dan penyediaan pilihan aktiviti bagi penghuni. Analisis perbandingan antara kedua-dua kes menonjolkan perbezaan dan persamaan susun atur ruang domestik yang dibentuk oleh konteks sosial, budaya, dan persekitaran. Dapatan ini seterusnya digunakan untuk menilai kaitan antara reka bentuk kediaman dan pola sosial dalam kedua-dua bentuk perumahan tersebut.



Rajah 1: Asas perhubungan secara diagramatik. (a1 dan a2) Ruang domestik dalam bentuk pelan formal, (b1 dan b2) Ruang domestik dalam bentuk Graf Justifikasi Akses.

Sumber: Hanson (1998)

Rajah 1 menunjukkan dua jenis bangunan yang mempunyai dua bahagian ruang, sel A dan sel B yang mempunyai pautan (link) yang menciptakan laluan di antara dua ruang tersebut. Dalam rajah tersebut, ia sangat jelas menunjukkan perhubungan di antara sel A dengan sel B yang mana sel A boleh pergi ke sel B dan dari sel B boleh juga pergi ke sel A. Tetapi apabila sesebuah ruang lagi ditambah bersama-sama dengan pautan untuk membuka laluan ke setiap sel, dua pola ruang di antara rajah 1A dan 1B adalah sangat berbeza. Kedua-dua pola mempunyai persamaan dari sudut hubungan di antara sel A dan sel B, tetapi hanya rajah 1A sahaja sel A dan sel B berhubung terus dengan ruang C. Menurut Hanson (1998) ini adalah cara yang sangat berguna untuk menunjukkan perbezaan pola ruang dalam bentuk yang ringkas atau secara grafik yang dipanggil sebagai ‘Graf justifikasi kebolehtelapan (*Justified Permeability Graph*)’. Menerusi graf tersebut, imaginasi untuk berada di dalam sebuah ruang akan lebih jelas terutama untuk menerokai pengalaman di dalam ruang dari pintu masuk ruang hingga ke ruang yang paling dalam secara visual

PERBANDINGAN SINTAKSIS RUANG SOSIAL DALAM RUMAH VERNAKULAR DAN PERUMAHAN B40 PERBANDARAN

Kajian ini memberi tumpuan kepada perbandingan mendalam antara dua jenis kediaman yang berbeza, iaitu Perumahan B40 Perbandaran di Lembah Klang dan Rumah Vernakular di kawasan pedalaman Semenanjung Malaysia. Melalui perbandingan ini, dapat dilihat dengan jelas bagaimana proses urbanisasi dan struktur sosial yang berbeza membentuk cara ruang domestik diatur dan dipraktikkan dalam kehidupan seharian penghuni. Perumahan B40 di kawasan perbandaran Lembah Klang, yang terkesan dengan urbanisasi pesat sejak 1970-an, menggambarkan satu bentuk perumahan yang semakin terasing daripada alam semula jadi dan lebih mengutamakan privasi serta pemisahan antara kehidupan sosial dan peribadi. Sebaliknya, Rumah Vernakular yang terdapat di luar bandar menunjukkan ciri-ciri kehidupan yang lebih sederhana, lebih integratif, dan lebih terbuka terhadap interaksi dengan alam sekitar.

Lembah Klang sebagai kawasan perbandaran yang mengalami urbanisasi pesat telah mengubah secara mendalam cara kehidupan masyarakat B40. Proses urbanisasi ini bermula sejak 1970-an apabila Dasar Sifar Setingan dilaksanakan, yang mengarah kepada penukaran kediaman setingan kepada perumahan moden yang lebih teratur. Ini telah membentuk satu budaya kehidupan baru yang lebih bergantung kepada kemudahan awam dan infrastruktur bandar yang lebih teratur. Dalam konteks ini, kehidupan masyarakat B40 semakin terasing daripada alam semula jadi. Keperluan untuk mendapatkan nilai privasi yang lebih tinggi dan keselamatan dalam ruang domestik menjadi faktor utama yang mendorong penyusunan ruang di dalam rumah. Keterasingan ini amat ketara apabila ruang domestik hanya mempunyai satu akses utama yang menghubungkan rumah dengan Kawasan Luar, menjadikan penghuni lebih tertumpu kepada kehidupan dalam rumah dan menjauhkan diri dari persekitaran luar (Rajah 2).

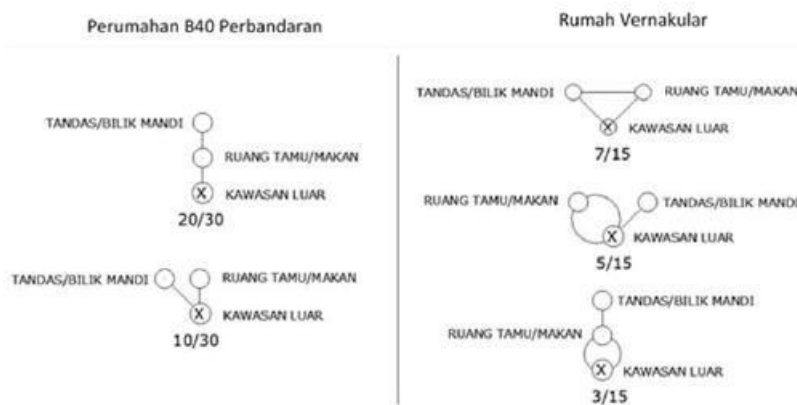


Rajah 2: Perbandingan pola sintaktik asas bagi satu ruang domestik yang mengandungi satu unit ruang sosial bagi Rumah Vernakular dan Perumahan B40 Perbandaran

Menurut Ibnu Khaldun dalam Muqadimmah, masyarakat bandar lebih bergantung pada ekonomi dan kerajaan untuk memenuhi keperluan asas, berbeza dengan masyarakat luar bandar yang bersifat berdikari. Rajah 2 menunjukkan ciri ini tercermin dalam Perumahan B40 Perbandaran yang cenderung individualistik, menekankan privasi, dan biasanya hanya mempunyai satu akses antara ruang domestik dan Kawasan Luar. Akses tunggal ini berfungsi memisahkan kehidupan peribadi daripada gangguan luar, menjadikan Kawasan Luar sekadar laluan sekunder.

Sebaliknya, Rumah Vernakular di pedalaman mencerminkan nilai kebersamaan dan saling bergantung, dengan dua akses utama yang menghubungkan ruang domestik dan Kawasan Luar. Susun atur ini memudahkan interaksi dengan persekitaran serta menyediakan fleksibiliti dan keselamatan daripada ancaman. Kawasan Luar di sini menjadi ruang penghubung yang mempererat hubungan antara ruang domestik dan alam sekitar.

Penambahan Tandas/Bilik Mandi mengubah persepsi privasi kedua-dua jenis kediaman. Dalam Perumahan B40, ia diletakkan jauh di dalam rumah untuk mengasingkannya daripada ruang sosial utama, meningkatkan privasi. Susunan ini menjadikan Kawasan Luar bukan sahaja laluan, tetapi penjarak antara ruang peribadi dan ruang umum (Rajah 3)

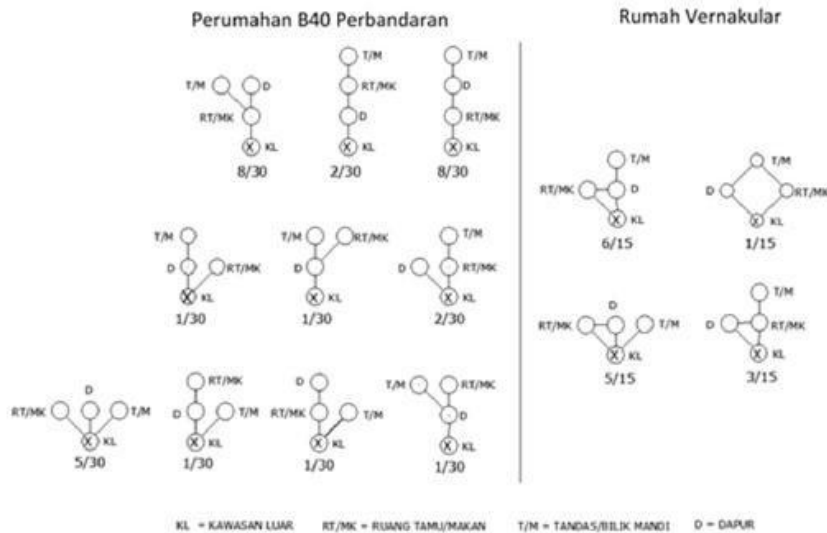


Rajah 3: Perbandingan pola sintaktik asas bagi satu ruang domestic yang mengandungi dua unit ruang sosial bagi Rumah Vernakular dan Perumahan B40 Perbandaran

Rajah 3 menunjukkan dalam Rumah Vernakular, penambahan Tandas/Bilik Mandi tidak menyebabkan ruang ini terasing daripada ruang sosial lain, sebaliknya lebih terintegrasi dengan Ruang Tamu dan Dapur. Lazimnya, ia terletak berhampiran Kawasan Luar dengan dua akses yang membolehkan laluan dari pelbagai arah. Susun atur ini mencerminkan ciri reka bentuk yang menghubungkan setiap ruang, termasuk Tandas/Bilik Mandi, dengan aktiviti sosial dan budaya setempat. Kawasan Luar berfungsi sebagai penghubung utama yang mengeratkan hubungan antara penghuni dan komuniti sekitar.

Dalam Perumahan B40 Perbandaran, Dapur sering diletakkan pada kedalaman ruang domestik bagi meningkatkan privasi, mengasingkannya daripada Kawasan Luar, dan mengawal interaksi sosial. Akses ke Kawasan Luar biasanya melalui pintu belakang atau laluan sampingan. Di sini, Kawasan Luar lebih berfungsi sebagai pemisah antara Dapur, Ruang Tamu, dan Tandas/Bilik Mandi bagi mengekalkan privasi.

Sebaliknya, dalam Rumah Vernakular, Dapur dan Ruang Tamu dihubungkan secara langsung dengan Kawasan Luar melalui dua akses utama. Kawasan Luar bukan sahaja menjadi laluan, tetapi juga ruang interaksi yang menghubungkan Dapur, Ruang Tamu, dan Tandas/Bilik Mandi, sekali gus mengintegrasikan kehidupan domestik dengan alam sekitar.



Rajah 4: Perbandingan pola sintaktik asas bagi satu ruang domestic yang mengandungi tiga unit ruang sosial bagi Rumah Vernakular dan Perumahan B40 Perbandaran

Rajah 4 menunjukkan perbezaan utama antara Perumahan B40 Perbandaran dan Rumah Vernakular terletak pada cara kedua-duanya mencerminkan struktur sosial yang berbeza. Perumahan B40, hasil urbanisasi, menekankan privasi dan pengasingan ruang domestik yang lebih tertutup daripada alam sekitar. Sebaliknya, rumah vernakular di luar bandar mempamerkan nilai kebersamaan dengan ruang domestik yang terbuka serta terintegrasi dengan alam semula jadi. Kebergantungan kepada alam dan interaksi sosial menjadikan susun atur rumah vernakular lebih fleksibel. Perbezaan ini menunjukkan bahawa ruang domestik bukan sahaja memenuhi fungsi fizikal, tetapi juga mencerminkan nilai sosial dan budaya yang membentuk kehidupan penghuni.

PRIVASI, PERGERAKAN, DAN PILIHAN: SEBUAH TAFSIRAN SPASIAL KEHIDUPAN

Perbandingan antara tetapan spasial rumah vernakular dan rumah perbandaran bukan sekadar penilaian fizikal terhadap struktur, tetapi melibatkan bagaimana ruang dihubungkan, dialami, dan memberi makna kepada penghuni. Kajian ini menonjolkan perbezaan antara keperluan fungsional dan kesinambungan tradisi dalam pembentukan ruang domestik, yang tercermin melalui konsep perpaduan mekanikal dan organik.

Rumah vernakular, dengan reka bentuk terbuka serta integrasi rapat dengan alam sekitar, menggambarkan perpaduan mekanikal. Susun atur ruangnya mempunyai pelbagai akses yang menghubungkan ruang domestik, mewujudkan jaringan sosial yang saling bergantung. Lebih daripada dua akses memberi fleksibiliti pergerakan, membolehkan penghuni memilih laluan, mengelak pertembungan, dan menghubungkan ruang sosial dengan kawasan luar. Ruang domestik

di sini berfungsi bukan sahaja sebagai tempat perlindungan, tetapi juga sebagai ruang interaksi sosial yang terbuka.

Sebaliknya, rumah perbandaran, khususnya perumahan B40, cenderung kepada perpaduan organik. Dengan hanya satu akses utama, pola ruang lebih terasing dan terstruktur. Ruang Transisi menjadi penghubung utama, namun kekurangan akses alternatif meningkatkan kedalaman ruang dan keterasingan. Hubungan antara ruang sosial didorong oleh fungsi dan kawalan pergerakan, bukan interaksi terbuka. Jika ditambah akses kedua, pola ruangnya mula menyerupai rumah vernakular, membolehkan kebebasan pergerakan dan mengurangkan keterasingan.

Kedalaman ruang domestik juga dipengaruhi oleh pola akses ini: dalam rumah perbandaran, semakin jauh dari akses utama, semakin tinggi keterasingan; manakala rumah vernakular dengan pelbagai akses memastikan ruang lebih terbuka dan terhubung dengan alam luar.

Dari segi penggunaan ruang sebagai medium penghubung, rumah perbandaran bergantung pada Ruang Transisi dan Ruang Tamu untuk menghubungkan dapur, bilik tidur, dan tandas. Rumah vernakular pula menggunakan ruang luar dan jemuran sebagai laluan tambahan, memperkayakan pengalaman ruang. Hanya rumah vernakular yang memanfaatkan kawasan luar sebagai sebahagian daripada rangkaian laluan domestik.

Dalam aspek privasi, kedua-dua jenis kediaman menganggap bilik tidur dan tandas sebagai ruang paling privasi. Namun, rumah perbandaran meletakkan kawasan luar dan ruang jemuran dalam kategori privasi tinggi, sementara rumah vernakular menganggapnya sederhana, menunjukkan keterbukaan terhadap interaksi sosial. Kawalan pergerakan juga berbeza, dengan rumah vernakular memberi peranan penting kepada kawasan luar sebagai laluan utama.

Secara keseluruhan, rumah vernakular mencerminkan perpaduan mekanikal yang mengikat ruang dan penghuni melalui integrasi dengan alam luar, manakala rumah perbandaran menampilkan perpaduan organik yang lebih terasing. Penambahan akses dalam rumah perbandaran berpotensi mengubah hubungan ruang ke arah lebih fleksibel dan terbuka, sekali gus menggalakkan interaksi sosial yang lebih erat.

KESIMPULAN

Perbincangan mengenai perumahan masyarakat berpendapatan rendah tidak dapat dipisahkan daripada pemahaman yang mendalam terhadap bagaimana ruang diwujudkan, digunakan dan dialami dalam kehidupan seharian. Perbandingan antara Rumah Vernakular dan Perumahan B40 Perbandaran menunjukkan bahawa rekabentuk fizikal bukanlah satu-satunya penentu kualiti kehidupan, sebaliknya cara ruang itu berinteraksi dengan struktur sosial memainkan peranan yang jauh lebih besar. Rumah Vernakular memperlihatkan ciri-ciri perpaduan mekanikal iaitu satu bentuk perpaduan sosial yang berasaskan integrasi, perkongsian fungsi, dan keterhubungan antara ruang dalam dan luar. Ini dicerminkan melalui pelbagai akses, aturan laluan yang berlapis, serta keterbukaan terhadap Kawasan Luar sebagai sebahagian daripada naratif domestik. Integrasi ini bukan sahaja memudahkan pergerakan, tetapi juga memperkuat hubungan sosial dan jaringan komuniti. Sebaliknya, Perumahan B40 Perbandaran, walaupun mengekalkan beberapa elemen susun atur dalaman yang menyerupai Rumah Vernakular, telah terputus daripada integrasi dengan ruang luar akibat akses tunggal dan kawalan yang ketat terhadap pergerakan. Ini menjadikannya

lebih menyerupai perpaduan organik, yang menekankan pembezaan, autonomi individu, dan segregasi fungsi. Ruang menjadi lebih bersifat peribadi, tersendiri, dan cenderung untuk menyusutkan peluang interaksi sosial secara semula jadi. Maka, pemahaman tentang perpaduan mekanikal dan organik dalam konteks rekabentuk ruang memberi satu dimensi baharu kepada cara kita menilai keberkesanan sesebuah perumahan. Rumah bukan sekadar tempat berteduh, tetapi medan sosial yang membentuk cara hidup, rasa memiliki, dan hubungan antara manusia. Justeru, integrasi antara ruang dan komuniti harus menjadi asas dalam merancang perumahan masa depan, terutamanya untuk kelompok yang paling terdedah kepada kesan keterasingan spatial dan sosial. Dengan memahami dan mengadaptasi semula prinsip-prinsip integrasi dalam tetapan spasial vernakular, kita berpotensi membina perumahan yang bukan sahaja memenuhi keperluan fizikal, tetapi juga merangsang kelestarian komuniti.

PENGHARGAAN

Kajian ini merupakan sebahagian daripada kajian PhD di bawah program Geran Penyelidikan LRGS: *New Housing Development Concept for B40 Group in Malaysia Based on Social-Spatial and Economic Integrations*, Kementerian Pengajian Tinggi. LRGS/1/2016/UKM/02/1/3.

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033-029

DYADIC VULNERABILIZATION IN THE AGE OF GEROTOPIA: AN EPISTEMIC ANALYSIS OF DISABILITY, CARE ARCHITECTURES, AND POLICY FRICTION WITHIN DEMOGRAPHIC SHIFT

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ABSTRACT

The global demographic transformation; marked by increasing longevity, declining fertility, and traditional familial network erosion; has fundamentally reshaped how care is perceived, structured, and administered in contemporary societies. As policies increasingly advocate for inclusive and age-friendly environments, these visions are often shaped by technocratic optimism and the rhetoric of “gerotopia” – a utopian imagination centered on longevity and active aging – whereas such narratives tend to overlook the persistent realities of chronic dependency, embodied labor, and the complex, often asymmetrical relationship that dominate everyday care experiences. Against this backdrop, this study critically examines the relational vulnerabilities embedded within modern disability and eldercare systems, framed through the concept of dyadic vulnerabilization. This co-produced vulnerability manifests most prominently within care dyads – typically constituted by aging individuals with disabilities and their informal caregivers – whose experiences are frequently marginalized or erased within formal care policy structures. It emphasizes that vulnerability in caregiving contexts is not a fixed or inherent trait, but a condition actively produced through policy gaps, cultural norms, and systemic neglect. In exploring this, the study adopts a qualitative, triangulated methodology involving analytical literature review, ethnographic field observation, and critical case study analyses. Drawing from epistemological critiques in disabilities studies, ethics of care, and critical gerontology, this research interrogates how diverse policy systems acknowledge, support, or obscure these interdependent dynamics within varying sociocultural and institutional landscapes, layered in an in-depth exploration of how care architectures are ideologically framed, institutionally realized, and experientially lived. A key concern lies in the understanding policy friction – the gap between bureaucratic design and everyday care practice – which often leads to restricted access, administrative misrecognition, and the epistemic silencing of both caregivers and care recipients. This study identifies three converging forms of marginalization: epistemic injustice, relational invisibility, and structural inefficiency. Conclusively, as any vision of an inclusive gerotopian future remain elusive, it argues for a reconceptualization of care as a relational phenomenon, urging the creation of care systems that interdependence-responsive, testimony-inclusive, and morally attuned. Therefore, addressing dyadic vulnerabilization contributes a critical lens for reimagining care architecture as central concerns for inclusive, responsive, and aging-ready society.

Keywords: Dyadic Vulnerabilization, Aging, Disability, Elderly Caregiving, Demographic Shift.

035-032

**THE MEDIATING EFFECT OF JOB SATISFACTION IN THE
RELATIONSHIP BETWEEN JOB DEMANDS AND TURNOVER
INTENTION AMONG SPECIAL EDUCATION TEACHERS IN JOHOR BAHRU**

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ABSTRACT

Turnover intention is a strong predictor of actual turnover behavior among employees. This may stem from irrelevant job demands imposed by employers, which can affect employees' job satisfaction and, subsequently, their turnover intention. Thus, this study aims to investigate the mediating effect of job satisfaction in the relationship between job demands and turnover intention. This study employed a purposive sampling technique with mix method explanatory sequential research design, involving 161 special education teachers (SETs) from Johor Bahru for the quantitative part and 10 SETs for the qualitative part. Job demands, job satisfaction, and turnover intention were measured using Karasek's Psychological Job Demands Subscale, the Warr-CookWall Job Satisfaction Scale, and the Six-item Turnover Intention Scale (TIS-6), respectively. Data collection was done via WhatsApp and face-to-face meetings, depending on the availability of the SETs, and the data were analysed using SPSS version 29. The findings revealed that the overall level of job demands among SETs was moderate, job satisfaction was high, and turnover intention was low. This study also found that job demands positively influenced turnover intention, while job satisfaction negatively influenced turnover intention. Furthermore, job satisfaction was found to partially mediate the relationship between job demands and turnover intention. For the qualitative part, responses from 10 SETs were thematically analyzed, revealing key concerns such as challenges in managing diverse student needs, the effects of these demands on their physical, emotional, and mental well-being, and their strong professional commitment despite salary concerns. This study contributes to understanding turnover intention among SETs in Malaysia, prompting actionable insights for the Ministry of Education and school administrators.

Keywords: Job Demands, Job Satisfaction, Special Education Teachers, Turnover Intention.

INTRODUCTION

The shortage of special education teachers (SETs) has long been a global issue, including in Malaysia. The Ministry of Education Malaysia reported that special education is among the subjects in critical need of teachers, particularly in states, such as Selangor, Johor, and Sabah (Adam, 2021). The global standard for the SET-to-student ratio is 1:4, but in Malaysia, the ratio stands at only 1:10 (Hibrahim, 2021). In the United States, the demand for SETs has increased steadily each year, while the supply has declined by over 17% (Dewey et al., 2017). This trend highlights a growing imbalance in the availability of qualified SETs, emphasizing the severity of the shortage. Therefore, sustaining the remaining teachers is essential to maintain the quality of special education provided. One approach to addressing this challenge is to assess SETs' turnover intention. High turnover intention may stem from irrelevant job demands imposed by school administrators, which can negatively impact SETs' job satisfaction and subsequently, increase their turnover intention.

Job demands refer to the aspects of the job requiring mental or physical effort, potentially causing psychological and physiological strain on employees (Charzyńska et al., 2021). SETs' job demands revolve around addressing the needs of special education students. These students differ from their typically developing peers in areas such as emotional regulation, social skills, and adaptive behavior (Davis et al., 2023). As a result, SETs must possess specific skills, including flexibility, effective communication, and collaboration, to support them effectively (Fernandes et al., 2021). Additionally, SETs face job demands unrelated to special education, including managing stock and inventory, handling discipline, and performing clerical tasks (Ghani et al., 2014; Nordin et al., 2020). These responsibilities may contribute to SETs' difficulty in achieving job satisfaction if they become excessive, especially during staff shortages. Job satisfaction refers to employees' emotional responses resulting from the alignment between actual and desired outcomes in the workplace (Chung et al., 2017). In addition to their responsibilities, SETs also experience insufficient support, limited professional development opportunities, strained interpersonal relationships, and poor school environments (Hester et al., 2020). All of these factors lead to low job satisfaction, which increases turnover intention among SETs (Zhang et al., 2019; Madigan & Kim, 2021). Turnover intention involves a deliberate and conscious thought process, including thinking, planning, and desiring to quit a job (Charzyńska et al., 2021).

Turnover intention was found to be a strong predictor of actual turnover behavior among employees (Ramli et al., 2014; Chen et al., 2015; Atan & Purba, 2018; Kurniawaty et al., 2019). In the United States, SETs were reported to be four times more likely to leave their profession than their general education counterparts (Hopkins et al., 2019). In a study by Carver-Thomas and Darling-Hammond (2019), it was found that SETs had a turnover rate of 15.6%, one of the highest compared to teachers of other subjects. These high turnover rates may result in the loss of experienced and skilled SETs, disrupting team dynamics, creating knowledge gaps, and increasing recruitment and training costs for schools. Furthermore, SETs with high turnover intention often experience decreased work engagement (Gupta & Shaheen, 2017), which negatively affects their productivity. This can also lead to compromised work quality and prolonged discontentment. Additionally, high turnover intention can have adverse effects on SETs' well-being, including physical and emotional complications, such as exhaustion, high blood pressure, weight gain, and hair loss (Hester et al., 2020). High turnover intention is also closely linked to burnout (Brunsting et al., 2014; Hester et al., 2020; Park & Shin, 2020), which further contributes to demotivation and

disengagement, ultimately affecting student engagement in class (Wong et al., 2017; Murangi et al., 2022).

While extensive research exists on turnover intention among SETs, fewer studies have focused on the influence of job demands. For example, Fu et al. (2020) examined the effects of social support, work engagement, and subjective well-being on turnover intention among SETs in China. On the other hand, research on SETs' job demands has primarily focused on their effects on other aspects. For instance, Curran (2017) explored the influence of career demands on burnout among SETs in Massachusetts. Consequently, these studies were unable to fully capture and explain the adverse effects of job demands on turnover intention among SETs. In Malaysia, studies on the influence of job demands and job satisfaction on turnover intentions have predominantly focused on other populations. For instance, Ooi and Teoh (2021) examined the influence of job demands on turnover intention among manufacturing company employees in Penang. Similarly, Orpina et al. (2022) studied the effects of job satisfaction on turnover intention among private university lecturers across Malaysia. Due to this, little is known about the effect of both job demands and job satisfaction on turnover intention among SETs in Malaysia. Furthermore, limited studies have used job satisfaction as a mediator in the relationship between job demands and turnover intention. Instead, other mediating variables have been explored, such as sense of calling (Esteves & Lopes, 2016), job embeddedness (Atan & Purba, 2018), and work stress (Purba et al., 2019). Thus, the role of job satisfaction as a mediator in this context remains relatively unexplored.

In a study conducted by Murangi et al. (2022), it was recommended that future research adopt a variable-oriented approach to examine the interactions between job demands, job resources, and turnover intentions among SETs. Building on this recommendation, the current study considers job satisfaction as a job resource mediating the relationship between job demands and turnover intentions. This study aims to identify the levels of job demands, job satisfaction, and turnover intention, examine the influence of job demands on turnover intention, determine the influence of job satisfaction on turnover intention, and investigate the mediating effect of job satisfaction in the relationship between job demands and turnover intention among SETs in Johor Bahru. This research contributes to the scientific understanding of the interplay between job demands, job satisfaction, and turnover intention among SETs. It offers valuable insights for future researchers and provides practical recommendations for the Ministry of Education and school administrators to safeguard SETs' welfare. Interventions such as professional development opportunities, enhanced support mechanisms, and improved working conditions could be implemented to effectively address these challenges.

PURPOSE OF THE STUDY

The objectives of this study are as follows: (1) to identify the level of job demands among SETs in Johor Bahru, (2) to identify the level of job satisfaction among SETs in Johor Bahru, (3) to identify the level of turnover intention among SETs in Johor Bahru, (4) to determine the influence of job demands on turnover intention, (5) to determine the influence of job satisfaction on turnover intention, (6) to investigate the mediating effect of job satisfaction in the relationship between job demands and turnover intention, and (7) to explore concerns related to job demands and their consequences among SETs.

LITERATURE REVIEW

Job Demands

Job demands refer to the aspects of a job—organizational, social, psychological, or physical—that require consistent effort or skill, resulting in certain physiological or psychological costs (Ramli et al., 2014; Gu et al., 2020; Ooi & Teoh, 2021; Danupranata & Asy'ari, 2022). It can be categorized as either challenging or hindering. While challenging demands contribute to employees' growth and development, hindering demands can negatively affect them (Ooi & Teoh, 2021). Job demands can also be classified into quantitative and emotional demands. Quantitative job demands refer to the volume of work that must be completed within a specific timeframe, while emotional job demands involve the daily interactions at work that require emotional energy due to their intensity, frequency, and diversity (Charzyńska et al., 2021). Examples of these demands include task overload as a quantitative demand and emotionally demanding interactions as an emotional demand. Although job demands are not always inherently negative, they can become stressful when employees lack the resources or support necessary to meet them effectively (Gu et al., 2020; Danupranata & Asy'ari, 2022).

High job demands can lead to sleep deprivation, separation from family and friends, and a lack of recreational opportunities, which may result in exhaustion, boredom, and loneliness (Gu et al., 2020). This is particularly true for high-demand occupations such as seafarers, nurses, and educators, who face significant community expectations, often compelling them to meet these standards at the expense of adequate rest and family time. This is supported by Vignoli et al. (2016), who found that job demands are associated with high levels of work-family conflict and emotional exhaustion, which, in turn, contribute to absenteeism among workers. Additionally, high job demands can negatively affect employees' well-being. Prolonged exposure to high job demands may cause unnecessary stress and pressure, leading to fatigue and, ultimately, turnover intentions (Purba et al., 2019; Gu et al., 2020; Charzyńska et al., 2021; Danupranata & Asy'ari, 2022).

The concept of job demands can be explained by the Job Demands-Control (JD-C) Model, also known as the job strain model, developed by Robert Karasek in 1979. According to this model, job demands can foster learning but also increase stress (Van Der Doef & Maes, 1999). When employees face job demands such as workload, time pressure, and role conflict, their mental alertness, arousal, and work-related stress are stimulated (Balducci et al., 2020). This effect is particularly pronounced when employees lack control over their work, leading to a condition known as high-strain jobs. Such conditions can result in psychological strain and illness among the employees (Van Der Doef & Maes, 1999). For instance, a study by Chung et al. (2017) demonstrated high levels of work-related stress among airport security screeners due to their high job demands coupled with low job control.

Job Satisfaction

According to Kurniawaty et al. (2019), job satisfaction refers to the emotional attitude an individual holds toward their work, particularly when the work aligns with their personal values. The greater the alignment between work and an individual's value system, the higher the level of job satisfaction they experience. Job satisfaction can also be referred to as the emotional state of

love and enjoyment that individuals have for their work, which manifests in various behaviors such as work performance, discipline, and morale. It serves as an evaluation of the perceived quality of the work, workplace culture, and emotional experiences of employees. Job satisfaction is influenced by three major factors: individual traits, situational conditions, and work characteristics (Kurniawaty et al., 2019). Individual traits encompass personality, values, and demographic factors, while situational factors include social support, organizational culture, and the work environment. Work characteristics, on the other hand, refer to aspects such as the nature of the work, salary, and career development opportunities.

High job satisfaction protects employees from the psychological and physiological effects of work-related stress, whereas low job satisfaction can lead to adverse outcomes. Employees with low job satisfaction often perceive their work as meaningless, which diminishes their motivation. This is supported by a study conducted by Van Scheers and Botha (2014), which found that job satisfaction was positively associated with motivation among retail employees in South Africa. Prolonged exposure to low job satisfaction can also result in burnout (Yurt, 2022). Employees may feel disconnected from their work, leading to depersonalization, emotional exhaustion, and a diminished sense of personal accomplishments. Job satisfaction significantly influences employees' work engagement (Garg et al., 2017). A lack of job satisfaction reduces job performance as employees lose the capacity and self-esteem to engage effectively with their tasks. Additionally, low job satisfaction can increase turnover intention, which may ultimately result in actual turnover behavior among employees (Kuo et al., 2014; Ramli et al., 2014; Chen et al., 2015; Atan & Purba, 2018; Kurniawaty et al., 2019).

Job satisfaction can be explained through various theories, one of which is Herzberg's TwoFactor Theory, developed by Frederick Herzberg in 1959. This theory identifies two categories of factors influencing employees' attitudes at work: hygiene factors and motivation factors. Hygiene factors are extrinsic, while motivation factors are intrinsic (Alshmemri et al., 2017; Ngo-Henha, 2017; Bušatlić & Mujabašić, 2018). Importantly, these factors are not opposite ends of the same spectrum but are distinct dimensions that independently contribute to job satisfaction and dissatisfaction (Ngo-Henha, 2017; Bušatlić & Mujabašić, 2018). Hygiene factors, such as salary, working conditions, and interpersonal relationships, help reduce job dissatisfaction. In contrast, motivation factors, such as growth opportunities, recognition, and responsibilities, enhance job satisfaction among employees. In a study conducted by Alfayad and Arif (2017), this theory was applied to explain the relationship between employee voice and job satisfaction. The study found that employee voice was positively associated with job satisfaction, as it provides employees with the autonomy to express their concerns.

Turnover Intention

Turnover intention is defined as the likelihood that employees will leave their current positions (Ooi & Teoh, 2021). Employees may think about, plan, or desire to relocate or quit their profession, but may not actually leave their employment (Charzyńska et al., 2021; Pratama et al., 2022). Turnover intention can be influenced by several factors, including job demands and job satisfaction. High job demands, such as excessive workload, time pressure, and role conflict, often lead to stress and burnout, increasing the likelihood that employees will leave their profession to safeguard their wellbeing. Conversely, job satisfaction—such as a positive work environment, strong interpersonal relationships, and recognition and rewards—plays a crucial role in employee

retention. Employees who are dissatisfied may eventually quit when they can no longer tolerate the negative feelings associated with job dissatisfaction.

Turnover intention can have several detrimental impacts on organizations and their performance. Gupta and Shaheen (2017) found that turnover intention is associated with decreased work engagement among employees. When employees develop the intention to leave their profession, they often lose motivation to perform their duties, feeling that staying offers little benefit. This disengagement reduces organizational productivity, as disengaged workers are less likely to put in their best effort, withholding the time and energy needed to contribute effectively to the company. Moreover, turnover intention frequently predicts actual turnover behavior, leading to the loss of skilled and experienced employees (Ramli et al., 2014; Chen et al., 2015; Atan & Purba, 2018; Kurniawaty et al., 2019). Such turnover disrupts team dynamics and creates knowledge gaps that can hinder organizational efficiency. High turnover rates may also harm a company's reputation, as it may be perceived as problematic or neglectful of employee welfare. In addition to reputational damage, turnover can have significant financial implications for organizations (Sarantie et al., 2022). When employees leave, organizations must invest in recruitment, selection, and the training of new staff—processes that are both costly and time-consuming.

Turnover intention can be explained by two major models. The first is Price and Mueller's Comprehensive Structural Model, developed by James L. Price and Charles W. Mueller in 1981. This model identifies four major domains of factors influencing turnover intention: environmental, individual, structural, and intervening (Zhu et al., 2023). Environmental factors refer to social conditions outside the organization, such as economic conditions and the job market. Individual factors include emotions, training, and work engagement. Structural factors encompass aspects like promotion opportunities, fairness, rewards, and job demands. Finally, intervening factors include job satisfaction, organizational commitment, and job search behavior. The second model is Mobley's Intermediate Linkages Model, developed by William H. Mobley in 1977. This model outlines a series of cognitive and behavioral steps that typically precede the decision to quit, from Block A to Block J (Mobley, 1977). The model is flexible, meaning some phases may be skipped or experienced in a different order depending on the situation (Singh & Sharma, 2015). In Block A, employees evaluate their existing jobs to see if they align with their values, goals, and skills, which leads to Block B, where employees assess their job satisfaction. In Block C, thoughts of quitting begin to develop, manifesting in passive job behaviors and absenteeism. In Block D, employees evaluate the costs of leaving, leading to Block E, where they start to consider alternative jobs, eventually reaching Block F, where they conduct an actual job search. Afterward, in Block G, they evaluate the available options to determine the best fit, moving to Block H, where they compare the alternatives with their current job. Block I involves the intention to either quit or stay, and finally, in Block J, employees decide whether to stay or quit.

Influence of Job Demands on Turnover Intention

Many studies have explored the influence of job demands on turnover intention across various occupations. Purba et al. (2019) examined this influence among salespeople in South Jakarta, adopting work stress as a mediator, while Gu et al. (2020) focused on seafarers in China, using the role of fun at work as a mediator variable. Both studies reported similar findings, showing that turnover intention was significantly and positively affected by job demands. This finding is supported by other studies, such as the one conducted by Charzyńska et al. (2021), who divided

job demands into quantitative and emotional categories and used Polish school teachers as respondents, with work spirituality as a mediator variable. They found that both types of job demands significantly and positively influenced turnover intention. Similarly, Danupranata and Asy'ari (2022), examined this influence among employees in an Indonesian company, employing work engagement as a mediator variable and Lei and Suntrayuth (2023) investigated the same influence among secondary school teachers in China, with occupational well-being as a mediator variable, and both studies reported similar results.

It can be concluded that numerous studies have investigated the influence of job demands on turnover intention. Based on the prior research, the hypothesis of the study is:

H1 There is a significant and positive influence of job demands on turnover intention among SETs in Johor Bahru.

Influence of Job Satisfaction on Turnover Intention

Numerous studies have investigated the influence of job satisfaction on turnover intention across various sectors. Iqbal et al. (2014) examined this influence among educators in Bahawalpur. Similarly, Kuo et al. (2014) and Chen et al. (2015) conducted research on the same topic among nurses in Taiwan, with the latter using work-to-family conflict as a mediator variable. These studies consistently demonstrated that job satisfaction significantly and negatively affects turnover intention across the working population. This finding was further supported by Salam (2017), who studied this effect among lecturers in Bangkok, adopting psychological capital as a mediator variable. Meanwhile, Zhang et al. (2019) explored this influence among employees in social media companies across various positions, from general clerks to top managers, reporting similar results. Likewise, Kurniawaty et al. (2019) and Pratama et al. (2022) investigated the influence of job satisfaction on turnover intention among bank employees and staff in a cleaning and security services company, respectively, reaching the same conclusion.

It can be concluded that numerous studies have investigated the influence of job satisfaction on turnover intention. Based on the prior research, the hypothesis of the study is:

H2 There is a significant and negative influence of job satisfaction on turnover intention among SETs in Johor Bahru.

Mediating Effect of Job Satisfaction in the Relationship Between Job Demands and Turnover Intention

Many studies have utilized job satisfaction as a mediator variable. For example, Kuo et al. (2014) and Chung et al. (2017) investigated the mediating role of job satisfaction in the relationship between work stress and turnover intention among nurses in Taiwan and airport security screeners in Korea, respectively. Similarly, Purba et al. (2019) employed job satisfaction as a mediator to examine the effect of job demands on turnover intention among salespeople in South Jakarta. These studies yielded consistent findings, showing that job satisfaction acted as a mediator—

specifically, a partial mediator—in the relationship between the variables. Sudibjo and Suwarli (2020) reported similar results when exploring job satisfaction as a mediator in the relationship between work-life balance and intention to stay among teachers in Tangerang, Indonesia. In Malaysia context, a comparable finding was reported by Janib et al. (2021), who examined the mediating effect of job satisfaction in the relationship between workload and performance among lecturers across five public universities in Malaysia.

It can be concluded that previous research has consistently demonstrated the mediating role of job satisfaction in various relationships. Based on the prior research, the hypothesis of the study is:

H3 Job satisfaction significantly mediates the relationship between job demands and turnover intention among SETs in Johor Bahru.

RESEARCH FRAMEWORK

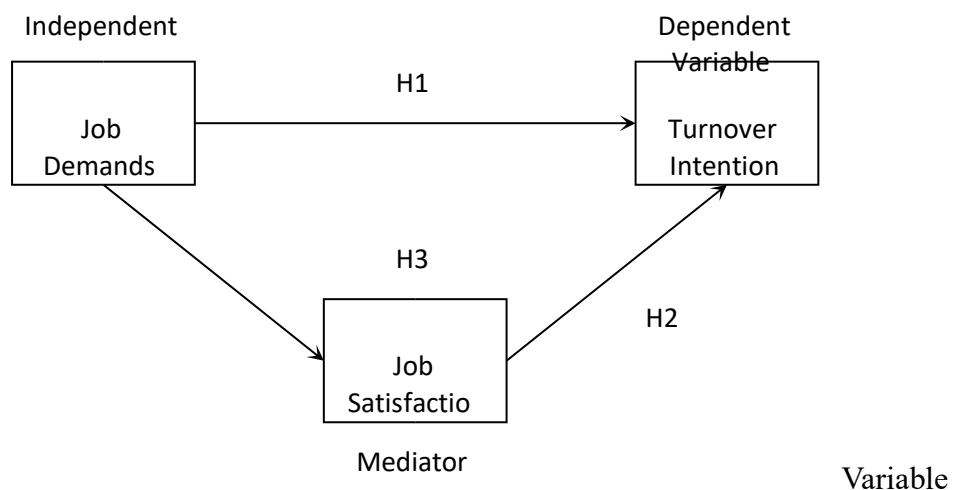


Figure 1: Research Framework

Figure 1 illustrates the research framework of this study. Job demands served as the independent variable, job satisfaction as the mediating variable, and turnover intention as the dependent variable. This research framework was designed to test the following hypotheses: job demands have a significant and positive influence on turnover intention (H1), job satisfaction has a significant and negative influence on turnover intention (H2), and job satisfaction significantly mediates the relationship between job demands and turnover intention (H3).

METHODOLOGY

Research Design

This study employed an explanatory sequential mixed methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of job demands, job satisfaction, and turnover intention among SETs in Johor Bahru. The quantitative part comprised descriptive, causal, and cross-sectional designs. The descriptive design was

utilized to address the first, second, and third objectives of the study: identifying the levels of job demands, job satisfaction, and turnover intention among SETs in Johor Bahru, respectively. The causal design was employed to examine the influence of job demands on turnover intention, the influence of job satisfaction on turnover intention, and the mediating effect of job satisfaction in the relationship between job demands and turnover intention among SETs in Johor Bahru. These formed the fourth, fifth, and sixth objectives of the study, respectively. The cross-sectional design involved assessing SETs' job demands, job satisfaction, and turnover intention at a single point in time. The qualitative part was conducted simultaneously to capture SETs' lived experiences, challenges, and perspectives. Open-ended questions were distributed through Google Forms, focusing on the most demanding aspects of their job, the ways in which student diversity affects their workload and teaching approach, the effects of their job on physical, emotional, and mental well-being, and their considerations of leaving the profession.

Sample and Population

In this study, SETs in Johor Bahru were selected as respondents for several reasons. Firstly, SETs were chosen due to their unique job demands compared to general education teachers. They are responsible for catering to and educating students with diverse learning challenges, such as visual impairments, hearing impairments, and learning disabilities, which require significant effort to manage. This issue is compounded by the critical shortage of SETs in certain states, including Johor, where Johor Bahru serves as the capital (Adam, 2021). The imbalance between the number of teachers and students often forces SETs to accommodate more students than they can effectively support, negatively impacting their well-being. Notably, the exact population of SETs in Johor Bahru was unknown. Thus, this study employed non-probability sampling, specifically a purposive sampling technique. The inclusion criteria required respondents to be local SETs in Johor Bahru. Purposive sampling allowed the researchers to gather more specific and meaningful data aligned with the research objectives, while also saving time, effort, and resources compared to studying a larger population. Using G*Power version 3.1.9.7, the required sample size for this study was determined to be 119, based on an effect size of 0.15, an alpha value of 0.05, a power value of 0.95, and 3 hypotheses.

For the quantitative part, a total of 161 respondents were selected from 18 government schools in Johor. Questionnaires were distributed to the SETs through both online and offline mediums. For the online distribution, a Google Form link was shared with SETs via WhatsApp, while for the offline distribution, printed questionnaires were handed out and later entered into a data sheet. For the qualitative part, open-ended questions were administered through Google Forms to 10 SETs, who provided in-depth insights into their job demands, the effects of student diversity, their physical, emotional, and mental well-being, and their considerations regarding leaving the profession. All responses were collected anonymously.

Research Instrument

For the quantitative part, the research instrument was divided into four sections: A, B, C, and D. A five-point Likert scale was employed for all questionnaires in all sections except for section A, ranging from 1 (totally disagree) to 5 (totally agree). Section A assessed the demographic

characteristics of the respondents, including gender, age, marital status, and school category. This demographic information provided valuable context for the research. Section B measured job demands using Karasek's Psychological Job Demands Subscale from the Job Content Questionnaire, developed by Robert A. Karasek in 1979. The subscale consisted of five items evaluating aspects such as workload, time pressure, and role conflict. The scale demonstrated good internal consistency in Malaysia, with a Cronbach's alpha of 0.72 (Nehzat et al., 2014). In this study, the subscale exhibited acceptable reliability, with a Cronbach alpha value of 0.76. Section C assessed the job satisfaction of the SETs using the Warr-Cook-Wall Job Satisfaction Scale, developed by Warr et al. in 1979. This scale consisted of 10 items measuring factors such as working conditions, working hours, pay, acknowledgment, and others. This instrument demonstrated excellent internal consistency, with a Cronbach's alpha of 0.90 (Syed Ghazaili & Daud, 2016). In this study, the instrument demonstrated good internal consistency, with a Cronbach's alpha value of 0.857.

Section D measured the SETs' turnover intention using the Six-item Turnover Intention Scale (TIS-6), developed by Bothma and Gert Roodt in 2013. This scale consisted of six items assessing individuals' intentions to remain in their organization over the past nine months. A higher mean score reflected greater turnover intention. This instrument demonstrated good reliability in Malaysia, with a Cronbach's alpha of 0.901 (Yen et al., 2022). In this study, the instrument initially demonstrated acceptable reliability, with a Cronbach's alpha value of 0.71. For the qualitative part, a qualitative instrument was used, consisting of open-ended questions designed to complement and enrich the quantitative findings. These questions aimed to capture the lived experiences of SETs regarding their job demands, well-being, and career decisions. The instrument included four key questions; "what aspects of your job do you find most demanding or challenging?" and "Have you ever considered leaving the profession? If so, what factors contributed to that consideration".

Data Analysis

To analyze the data for the quantitative part, the Statistical Package for the Social Sciences (SPSS) version 29 was used, employing both descriptive and inferential statistics. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were utilized to summarize the characteristics of the data and address the first, second, and third objectives: identifying the level of job demands, job satisfaction, and turnover intention among SETs in Johor Bahru. The levels were categorized into three ranges: low (1.00 - 2.33), moderate (2.34 - 3.67), and high (3.68 - 5.00). Inferential statistics, specifically simple linear regression and hierarchical regression, were employed to examine statistical influence between variables and draw inferences about the population based on the sample. These analyses addressed the remaining objectives: determining the influence of job demands on turnover intention, examining the influence of job satisfaction on turnover intention, and investigating the mediating effect of job satisfaction in the relationship between job demands and turnover intention among SETs in Johor Bahru. For the mediator, there are two types: full mediation and partial mediation, as introduced by Barron and Kenny in 1986 (Otuya, 2019).

For the qualitative part, thematic analysis was employed to examine the open-ended responses collected through Google Forms. The process followed Braun and Clarke's (2006) six phases: (1) familiarization with the data through repeated reading of the responses, (2) generating initial codes by systematically identifying significant features of the data, (3) searching for themes by grouping related codes, (4) reviewing themes to ensure coherence and consistency across the dataset, (5)

defining and naming themes to capture their essence, and (6) producing a final narrative report supported with illustrative quotations from participants. This approach facilitated the identification of key patterns related to job demands, the effects of student diversity, teachers' physical, emotional, and mental well-being, and their considerations of leaving the profession.

RESEARCH FINDINGS

Quantitative Results

Demographic background

The majority of the respondents were female (85.1%), with the remainder being male. Regarding age, the largest group was aged 30–39 years (37.3%), followed by 40–49 years (30.4%), 20–29 years (23.6%), and 50–59 years (8.7%). None of the respondents were over 60 years old. Almost all respondents held a Bachelor's degree (90.7%), while none had a Doctorate. In terms of teaching experience, nearly half of the respondents (49.1%) reported having more than 10 years of professional experience. For marital status, the majority (112 individuals) were married, while one respondent was divorced. Slightly more than half of the respondents (92 individuals) were SETs at the secondary school level, whereas only two respondents (1.2%) were teaching in kindergarten or preschool.

Level of job demands

The overall mean was 3.33, with a standard deviation of 0.570, indicating a generally moderate level of job demands. Among all items, item 2 had the highest mean score (mean = 3.97), whereas item 5 had the lowest mean score (mean = 2.64). Additionally, item 1 had the lowest standard deviation (SD = 0.757), indicating the least variability in responses, while item 5 had the highest standard deviation (SD = 0.972), reflecting the greatest variability. Overall, the majority of respondents demonstrated a moderate level of job demands, with 116 respondents (72.0%). In contrast, only 8 respondents exhibited a low level of job demands, accounting for just 5%.

Level of job satisfaction

The overall mean was 3.92, with a standard deviation of 0.466, indicating a generally high level of job satisfaction. Among all items, item 3 had the highest mean score (mean = 4.35), whereas item 2 had the lowest mean score (mean = 3.73). Additionally, item 7 had the lowest standard deviation (SD = 0.626), indicating the least variability in responses, while item 1 had the highest standard deviation (SD = 0.829), reflecting the greatest variability. Overall, the majority of respondents demonstrated a high level of job satisfaction, with 118 respondents (73.3%). In contrast, none of the respondents exhibited a low level of job satisfaction.

Level of turnover intention

The overall mean was 1.88, with a standard deviation of 0.663, indicating a generally low level of turnover intention. Among all items, item 2 had the highest mean score (mean = 2.25), whereas item 4 had the lowest mean score (mean = 1.54). Additionally, item 2 had the lowest standard deviation (0.727), indicating the least variability in responses, while item 1 had the highest standard deviation (1.017), reflecting the greatest variability. In summary, the majority of respondents demonstrated a low level of turnover intention, with 123 respondents (76.4%). In contrast, 3 respondents exhibited a high level of turnover intention, accounting for 1.9%.

Influence of job demands on turnover intention

Firstly, the relationship between job demands and turnover intention among SETs in Johor Bahru was examined to determine whether an association existed between the variables. The findings, as presented in Table 1, revealed that job demands have a significant, positive, and weak relationship with turnover intention ($p < 0.05$, $r = 0.359$). Thus, a simple linear regression analysis was conducted to further investigate the influence of job demands on turnover intention among SETs in Johor Bahru. The findings indicate that job demands have a significant and positive influence on turnover intention. The p-value was less than 0.05, indicating statistical significance. Therefore, the alternative hypothesis (H1) was accepted. Specifically, a one-unit increase in job demands predicted a 0.359 increase in turnover intention. Job demands accounted for 12.4% of the variance in turnover intention.

Table 1: The Influence of Job Demands on Turnover Intention

Variables	Turnover Intention			
	R	R ²	F	Sig.
Job Demands	0.359	0.124**	23.598**	0.359

** Significant at $p < 0.05$

Influence of job satisfaction on turnover intention

Next, the relationship between job satisfaction and turnover intention among SETs in Johor Bahru was analyzed to determine whether an association existed between the variables. The findings, as presented in Table 2, revealed that job satisfaction has a significant, negative, and weak relationship with turnover intention ($p < 0.05$, $r = -0.486$). Therefore, a simple linear regression analysis was conducted to further investigate the influence of job satisfaction on turnover intention among SETs in Johor Bahru. The findings indicate that job satisfaction has a significant and negative influence on turnover intention. The p-value was less than 0.05, confirming statistical significance. Consequently, the alternative hypothesis (H2) was accepted. A one-unit increase in job satisfaction predicted a 0.486 decrease in turnover intention. Job satisfaction explained 23.1% of the variance in turnover intention.

Table 9: The Influence of Job Satisfaction on Turnover Intention

Variables	Turnover Intention			
	R	R ²	F	Sig.
Job Satisfaction	0.486	0.231**	49.115**	-0.486 < 0.001**

** Significant at $p < 0.05$

Mediating effect of job satisfaction in the relationship between job demands and turnover intention

Table 3 shows the findings of the analysis conducted to investigate the mediating effect of job satisfaction in the relationship between job demands and turnover intention among SETs in Johor Bahru. The findings indicate that job satisfaction significantly mediates the relationship between job demands and turnover intention. The p-values for both Models 1 and 2 were less than 0.05, indicating statistical significance. Therefore, the alternative hypothesis (H3) was accepted. From Model 1, job demands were found to have a significant and positive influence on turnover intention ($\beta = 0.359$, $R^2 = 0.124$, $p < 0.05$). Meanwhile, in Model 2, the influence of job demands on turnover intention remained significant ($p < 0.05$), while job satisfaction had a significant negative influence on turnover intention ($\beta = -0.458$, $p < 0.05$). The influence of job demands decreased when job satisfaction was included ($\beta = 0.320$, $p < 0.05$). This indicates that job satisfaction serves as a significant partial mediator in the relationship between job demands and turnover intention among SETs in Johor Bahru.

Table 3: The Mediating Effect of Job Satisfaction in The Relationship Between Job Demands and Turnover Intention

Model	Variables	t		Sig.	R	R ²	Sig.
1	JD	4.858	0.359	< 0.001**	0.359	0.124	< 0.001**
2	JD	4.923	0.320	< 0.001**	0.581	0.329	< 0.001**
	JS	-7.050	-0.458	< 0.001**			

** Significant at $p < 0.05$

Qualitative Results

Theme 1: Challenges in managing special education students

Teachers reported that managing and supporting special education students is challenging, as each student has unique needs and behavioral patterns that require tailored approaches. They emphasized the need to think carefully and make wise decisions to ensure the learning process

matches each student's abilities and developmental level. For example, teachers often design individualized learning plans that consider the content, teaching methods, and appropriate duration of instruction. At the same time, they must maintain composure and patience while promoting inclusion and discipline in the classroom.

Theme 2: The impact of student diversity on workload and teaching approach

Teachers reported three main aspects of how student diversity affects their workload and teaching approach: behavior, cognition, and physical needs. First, students' disruptive behaviors increase teachers' workload, as they must manage classroom discipline while maintaining engagement, often requiring one-on-one attention. This also compels teachers to adopt creative strategies, such as using positive reinforcement and adjusting discipline methods as needed. Second, cognitive differences, such as variations in understanding and processing speed, require teachers to prepare multiple versions of lesson plans with diverse instructions, visual aids, and hands-on activities.. Finally, students with physical needs add to teachers' workload, as some require frequent breaks or mobility support. Consequently, teachers must adapt their approaches by incorporating strategies such as movement breaks or larger visual materials. Overall, these aspects significantly shape the teaching and learning process, requiring teachers to continually adjust their methods to create an inclusive and supportive learning environment.

Theme 3: Effects on teachers' well-being

Some teachers reported positive effects, while others reported negative effects. Physically, teachers experienced fatigue from constant classroom management, as they needed to give their fullest attention to students to prevent situations such as students suddenly leaving the classroom. In terms of emotional well-being, teachers experienced exhaustion from managing the diverse needs and challenging behaviors of their students. For mental well-being, they reported feelings of stress and anxiety, particularly the fear of not doing enough for their students or failing to meet learning goals. Nevertheless, despite these challenges, many teachers emphasized that their efforts felt worthwhile when they observed significant improvements and development among their students.

Theme 4: Professional commitment and retention

Most teachers reported that they had never considered leaving the profession and expressed genuine love for their work, often highlighting the fulfillment they gained from seeing their students' progress and development. Only a few teachers mentioned considering leaving, primarily due to dissatisfaction with the salary, which they perceived as incompatible with the heavy demands and responsibilities of their job.

DISCUSSIONS

Level of Job Demands

This research aims to identify the level of job demands among SETs in Johor Bahru. The findings demonstrated that the overall level of job demands among SETs was moderate. This indicates that SETs generally face a manageable workload in their roles. A study by Mustafa et al. (2020) found that SETs perceive their job demands as either heavy or manageable, depending on certain

conditions, particularly those related to working environment and time constraints. When the working environment is positive and conducive—where SETs feel valued, appreciated, and recognized—they perceive their job demands as more manageable. This is because they receive emotional support from peers, colleagues, or school administrators, which helps reduce burnout and enables them to handle their responsibilities effectively. Similarly, Sun et al. (2019) found that perceived social support is negatively associated with burnout.

Moreover, job demands become more manageable when SETs are given sufficient time to complete their tasks. Adequate time allows them to rest and recover, reducing the sense of being overwhelmed. This, in turn, enables them to resume their work with greater efficiency and focus. Gu et al. (2020) demonstrated that recovery experiences mitigate the detrimental effects of work stress on teachers' well-being. Likewise, Virtanen et al. (2020) found that recovery activities such as relaxation, detachment, and a sense of control were associated with greater vitality among teachers. Notably, older teachers benefited more from a sense of control, while younger teachers gained more from relaxation.

Level of Job Satisfaction

This research aims to identify the level of job satisfaction among SETs in Johor Bahru. The findings highlighted that the overall level of job satisfaction among SETs was high. This suggests that, in general, SETs are highly satisfied with various aspects of their work. One potential reason is the job embeddedness experienced by SETs. According to Peter Arockiam and Banerjee (2022), job embeddedness was found to be positively associated with job satisfaction. When SETs have high job embeddedness, they feel deeply connected to their roles, develop a strong sense of belonging to the profession, and have meaningful ties to the school and community. Job embeddedness can be divided into three dimensions, as investigated by Habib et al. (2024): community fit, organizational fit, and organizational and community sacrifice, with community fit scoring the highest among teachers.

Another factor that can contribute to this finding is the gender composition of the respondents, the majority of whom are female. A study by Shaukat et al. (2019) found that female SETs are more likely to feel satisfied with their jobs compared to their male counterparts. This could be because teaching, particularly special education, tends to have more female teachers than male teachers, making it a female-dominated field. In the United States, it was reported that 75.4% of SETs were female, while the remaining 24.6% were male (Zippia, 2025). In an environment with a majority of female teachers, SETs may feel more comfortable sharing their challenges and seeking support from one another when needed, which can contribute to higher job satisfaction.

Level of Turnover Intention

This research aims to identify the level of turnover intention among SETs in Johor Bahru. The findings revealed that the overall level of turnover intention among SETs was low. This indicates that, generally, SETs have a low intention to leave their profession. One potential reason for this is the alignment between their job and their personalities, skills, and passions—commonly referred to as person-job fit. Research has shown that person-job fit is strongly associated with job satisfaction (Peng & Mao, 2015). SETs who experience this fit are more likely to find their work fulfilling, leading to greater contentment and reduced inclination to leave, even when offered better-paying opportunities elsewhere. Additionally, person-job fit can predict job stress (Deniz et

al., 2015). SETs experiencing this fit are less likely to feel overwhelmed by their workload, even when it is substantial, as they derive a sense of purpose and satisfaction from their work.

Demographic factors may also contribute to the findings. Most respondents reported having more than 10 years of experience in the profession. Furthermore, the majority of them were female and married. These factors can contribute to enhanced psychological well-being, as suggested by Akram et al. (2024). High psychological well-being enables SETs to manage job-related challenges effectively, viewing them as opportunities for growth rather than setbacks. They can foster empathy and patience with their students, enabling them to embrace the nature of their work, which in turn reduces turnover intention. Supporting this notion, Lazarus (2019) found that female SETs often displayed more positive attitudes toward their jobs compared to their male counterparts. Similarly, Conley and You (2017) discovered that more experienced SETs typically exhibit lower turnover intention.

Despite the generally low turnover intention, some respondents demonstrated moderate to high levels of intention to leave. This may stem from the shortage of SETs, as noted by Hibrahim (2021). When there is an inadequate number of SETs, job demands cannot be distributed equitably, forcing existing SETs to take on workloads that exceed their capacities. Additionally, issues such as feeling underappreciated by school administrators could also contribute to turnover intention. This is supported by Hester et al. (2020), who highlighted similar challenges in their study conducted in the United States. This is particularly evident in schools that integrate general and special education, where SETs often receive insufficient support from administrators and colleagues (Amran et al., 2019; Ali et al., 2021). Such conditions pose a risk of increased turnover intention and actual turnover among SETs, which could further compromise the quality of special education in Malaysia.

Influence of Job Demands on Turnover Intention

This study aims to determine the influence of job demands on turnover intention among SETs in Johor Bahru. The findings revealed that job demands had a significant and positive influence on turnover intention among SETs in Johor Bahru. This suggests that as the job demands of SETs increase, their likelihood of developing intentions to leave their jobs increases. Conversely, a decrease in job demands reduces the likelihood of such intentions. This is consistent with the findings by Charzyńska et al. (2021), who reported that emotional and quantitative job demands have a significant positive effect on turnover intention among Polish school teachers. Similarly, Lei and Suntrayuth (2023) found that obstructive job demands significantly and positively impact turnover intention among secondary school teachers in China.

Job demands can place a substantial burden on SETs, particularly during staff shortages, as they must exert additional resources and effort to meet the needs of each special education student. These students possess unique characteristics and may experience challenges in emotional regulation, social skills, and adaptive behavior, which can sometimes manifest as externalized behaviors, including hyperactivity, impulsivity, and aggression (Davis et al., 2023). SETs require both mental and physical capabilities to design and implement individualized lesson plans effectively while managing classrooms where unexpected behaviors may arise. These responsibilities demand specialized skills unique to SETs—skills that may differ from those of general education teachers.

Moreover, numerous studies have demonstrated that job demands can lead to burnout. Tuxford and Bradley (2014) found that job demands contribute to emotional exhaustion, a core component of burnout. Curran (2017) reported a positive influence of career demands on burnout among SETs in Massachusetts, while Thakur (2018) identified a significant association between workload and burnout among SETs in Punjab. The emotional toll on SETs is substantial, as they must manage students with patience and care while suppressing their own emotions to maintain professionalism, in adherence to the principles of display rules. This prolonged emotional suppression can lead to stress, exhaustion, and emotional numbness. Over time, these factors may result in turnover intention (Delali et al., 2020).

Influence of Job Satisfaction on Turnover Intention

This study aims to determine the influence of job satisfaction on turnover intention among SETs in Johor Bahru. The findings revealed that job satisfaction had a significant negative influence on turnover intention among SETs in Johor Bahru. This indicates that as SETs' job satisfaction increases, their intention to leave the profession decreases. Conversely, when job satisfaction declines, their intention to leave the profession increases. This finding aligns with the study conducted by Iqbal et al. (2014), which found that turnover intention among educators in Bahawalpur was significantly and negatively influenced by their job satisfaction. Similarly, Salam (2017) reported that job satisfaction had a significant negative effect on turnover intention among lecturers in Bangkok.

SETs who are satisfied with their jobs are more likely to feel motivated and engaged in their work, fostering a strong connection to their roles. Job satisfaction allows them to feel happy and content in their current positions, as their expectations and needs are met, and their efforts are being appreciated. When they feel valued, SETs are motivated to give their best in teaching, viewing hardships as challenges rather than setbacks. They remain optimistic in the face of adversity, which helps them persevere in their roles. This, in turn, helps cultivate the best version of SETs, enhancing the quality of education provided to students and supporting their growth and development. Banerjee et al. (2017) also emphasized that teachers' job satisfaction significantly impacts students' achievement in reading and mathematics. Over time, SETs experience greater job satisfaction as they witness their students' progress and success. This sense of fulfillment further strengthens their commitment to the profession, ultimately reducing turnover intention.

On the other hand, low job satisfaction can lead to disengagement and a negative attitude toward work (Okeke & Mtyuda, 2017). When their expectations and needs are not met, SETs may feel unhappy with their current roles, perceiving that they are neither appreciated nor valued. SETs with low job satisfaction may view their work as meaningless, resulting in dissatisfaction and a lack of motivation. Even when they perform their best, they may feel that their efforts are undermined or disregarded, which can lead to a sense of unimportance. As a result, they may neglect their responsibilities toward students, negatively impacting the quality of education. These SETs may begin to develop an intention to leave the profession, seeing it as the best option for both themselves and their students. Rather than remaining in a cycle of negativity, they may consider exploring other opportunities, including leaving the profession, in search of a more fulfilling path.

Mediating Effect of Job Satisfaction in the Relationship Between Job Demands and Turnover Intention

This research aims to investigate the mediating effect of job satisfaction in the relationship between job demands and turnover intention among SETs in Johor Bahru. The findings revealed that job satisfaction partially mediates this relationship among SETs in Johor Bahru. Specifically, the presence of job satisfaction indirectly affects the relationship between job demands and turnover intention. Higher job demands can result in lower job satisfaction, which, in turn, predicts a higher intention to leave. Conversely, lower job demands can lead to higher job satisfaction, which, in turn, predicts a lower intention to leave. This result aligns with the study by Kuo et al. (2014), who found job satisfaction to be a partial mediator between work stress and turnover intention among nurses. Similarly, Purba et al. (2019) reported that job satisfaction partially mediates the relationship between job demands and turnover intention among saleswomen.

According to Adam's equity theory, proposed in 1963, workplace motivation is influenced by employees' (person) perceptions of equity—the balance between their inputs and outputs relative to others (referent)—which shapes their workplace behavior (Ryan, 2016). When there is a balance between inputs and outputs, equity exists; however, when this balance is disrupted, inequity arises. In response to inequity, employees may attempt to adjust certain aspects of their inputs, outputs, or even the referent itself, potentially leading to negative outcomes in workplace behavior (Ryan, 2016). Conversely, when equality exists, employees feel valued and supported for their contributions, making them more likely to exhibit positive workplace behaviors.

In the case of SETs, they face unique job demands, both mentally and physically, as they manage the diverse needs of students with disabilities such as autism, speech impairments, visual impairments, and others. These demands often exceed their capability, particularly in environments with staff shortages. As a result, SETs may experience low job satisfaction, feeling overburdened by the challenges they face. For example, SETs working in understaffed schools often deal with high job demands, having to manage students with limited resources and even take on responsibilities beyond the scope of special education due to the staff shortages. This low job satisfaction may lead SETs to seek alternative employment opportunities that offer better working conditions, support, and a more manageable workload, ultimately increasing turnover intention.

Qualitative Results

The qualitative findings provided deeper insight into the experiences of SETs and helped contextualize the quantitative results. Teachers consistently highlighted the challenges of managing students with diverse needs, noting that every student required individualized attention, tailored lesson plans, and creative teaching strategies. While these efforts were essential for fostering inclusion and ensuring student progress, they also contributed to a sense of fatigue and emotional strain. Teachers emphasized that managing disruptive behaviors, addressing cognitive differences, and accommodating physical needs not only increased their workload but also demanded significant patience and composure. This underscores the intensity of job demands in practice, complementing the quantitative finding that SETs generally perceived their job demands as moderate.

In addition to challenges, the qualitative findings revealed the profound emotional and professional commitment that many SETs hold toward their work. Despite acknowledging the physical, emotional, and mental toll of the profession, most teachers expressed fulfillment in witnessing students' growth and development. They described their efforts as worthwhile when students achieved progress, highlighting the intrinsic motivation and dedication that sustain their engagement in the profession. This helps explain the quantitative finding of high job satisfaction among SETs, suggesting that passion for teaching and student success can buffer the negative effects of heavy demands.

The qualitative findings also provided deeper insights into turnover intention. Although the quantitative results indicated that overall turnover intention was low, the open-ended responses revealed more nuanced perspectives. Most teachers affirmed that they had never considered leaving the profession and described their strong attachment to their roles. However, a minority expressed concerns about the incompatibility between their workload and salary, which they viewed as insufficient given the responsibilities involved. This finding adds depth to the quantitative results by suggesting that although SETs are committed to their profession, structural factors such as compensation and workload distribution could eventually influence retention.

LIMITATIONS AND RECOMMENDATIONS

Several limitations were identified in this study, and corresponding recommendations for future research are provided. The first limitation is that the sample in this study focused solely on SETs in Johor Bahru. As a result, the findings cannot be generalized to SETs in other states of Malaysia. Future research could expand the sample to include SETs from other states, such as Selangor and Sabah, where SETs shortages have also been reported, as well as from the entire state of Johor rather than just Johor Bahru. This would enhance the reliability and validity of the findings by ensuring a more representative sample of SETs, reflecting the diverse experiences and challenges faced by SETs across different regions. The second limitation is the use of a non-probability sampling technique, specifically purposive sampling, which limits the generalizability of the findings. Future research could consider using probability sampling techniques to improve the generalizability of the results. This would ensure the research more robust, credible, and applicable, and increasing its value in understanding the interplay between job demands, job satisfaction, and turnover intention among SETs nationwide. Additionally, this study only examines the mediator effect of job satisfaction, which limits the ability to assess the impact of other potential mediator variables. This may restrict the depth of understanding regarding the complex mechanisms that link job demands and turnover intention. Future researchers could explore additional mediators, such as burnout, work stress, and organizational commitment to gain a more comprehensive understanding of the relationship between job demands and turnover intention.

Based on the findings, it is recommended that the Ministry of Education strengthen its current procedures to promote and maintain the welfare of SETs, thereby sustaining the positive outcomes observed. One approach is to enhance the Special Education Integration Program's Handbook of Operations by developing policies that address career development opportunities, workload management, and well-being metrics for SETs. These improvements would safeguard SETs' welfare and help reduce turnover intention. Additionally, formal and open communication channels could be established, allowing SETs to express their concerns to school administrators

and the ministry without fear of negative repercussions. This would ensure timely and effective responses, fostering a supportive relationship between SETs, school administrators, and the ministry. By creating such channels, SETs would feel a greater sense of autonomy in the workplace, as their voices are heard and valued, which would further enhance their job satisfaction. Finally, it is advisable for school administrators to recognize and appreciate the contributions of SETs. Formal recognition evaluations should be established to identify SETs deserving of rewards, which could be either monetary (e.g., bonuses) or non-monetary (e.g., praise). Recognizing and rewarding SETs' efforts would help reduce turnover intention by increasing their job satisfaction.

CONCLUSION

This study aims to explore the relationships between job demands, job satisfaction, and turnover intention among special education teachers (SETs) in Johor Bahru. A purposive sampling method was employed, with 161 local SETs from Johor Bahru selected as respondents for the quantitative part and 10 SETs for the qualitative part. The findings revealed a moderate level of job demands, a high level of job satisfaction, and a low level of turnover intention. Job demands were found to positively influence turnover intention, while job satisfaction negatively influenced turnover intention and partially mediated the relationship between job demands and turnover intention. Qualitative insights supported these findings, highlighting teachers' challenges in managing diverse student needs, the impact on their well-being, and their strong professional commitment despite concerns over salary. These findings enhance the scientific understanding of factors influencing turnover intention among SETs in Malaysia and serve as a proactive call for the Ministry of Education Malaysia and school administrators to maintain the welfare of SETs through interventions designed to address their specific needs.

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037-033

LOGISTICAL SUPPORT AND THE AGEING COMMUNITY: SILVER ECONOMY OPPORTUNITIES

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ABSTRACT

The ageing global population presents mounting challenges to mobility, autonomy, and quality of life. Traditional transportation systems often fail to meet the specific needs of older adults, resulting in isolation and reduced access to essential services. This paper examines the importance of logistical supports, such as infrastructure and facilities, in enhancing mobility outcomes for ageing populations. Through a quantitative approach using a survey method, we found the importance of logistical support. Results suggest that tailored technological integration significantly enhances transport accessibility, safety, and user satisfaction among older adults. Policy implications and implementation pathways are discussed.

Keywords: Logistics, Accessibility and Availability, Silver Economy, Elderly.

036-034

EXPLORING EMPLOYERS' PERCEPTIONS ON HIRING PERSONS WITH DISABILITIES (PWD) IN THE CONTEXT OF LABOUR MARKET INCLUSION AND SOCIAL POLICY: A QUALITATIVE STUDY

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ABSTRACT

Malaysia's Social Security Organization (SOCSO) introduced the Return to Work (RTW) Program in 2007, modeled after successful systems in Germany and Canada, to support insured persons (IPs) in rejoining the workforce following injury or disability. Despite commendable reintegration numbers—with 66% (51,986 out of 78,121) of IPs placed in employment by December 2022—employing persons with disabilities (PWD) remains a challenge in terms of employer readiness and systemic barriers. This study investigates employer perceptions on hiring PWD within the broader framework of labour market inclusion and social welfare policy, with the goal of informing more inclusive employment practices and public policy strategies in Sabah.

The study employed a qualitative design using semi-structured interviews with 15 professionals, including employers, rehabilitation physicians, occupational therapists, and case managers, all of whom held managerial positions. Interview transcripts were thematically analyzed, leading to the identification of three major influencing domains: individual (client) factors, employer factors, and regulatory (policy/authority) factors. These domains were then translated into questionnaire items.

An initial pool of 109 items was generated—40 related to individual factors, 25 to employer factors, and 44 to regulatory factors. After refinement, the final version comprised 53 items across the three domains (17 individual, 16 employer, 20 regulatory). Items are rated on a 5-point Likert scale. The questionnaire is intended to undergo validation and psychometric analysis in future studies.

Understanding employers' perspectives on PWD hiring is crucial for shaping inclusive labor market practices and effective policy interventions. This study lays the groundwork for data-driven social policy that promotes equal employment opportunities and supports national goals for workforce participation and social equity.

Keywords: Return To Work (RTW), Persons with Disabilities (PWD), Employer Perception, Qualitative Research, Questionnaire Development.

039-036

GERONTOLOGY INTERFERENCE OF MOBILE HEALTH APPLICATION CONTINUANCE INTENTION: A CONCEPTUAL FRAMEWORK

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ABSTRACT

Mobile health (mHealth) applications have the potential to revolutionize healthcare delivery and management, particularly among the elderly population. These applications have the potential to significantly improve the well-being and quality of life of the elderly. Like many other countries, Malaysia is experiencing a demographic shift towards an ageing population. With advancements in technology and increasing smartphone penetration rates, leveraging mHealth applications can address several healthcare challenges the elderly face. The COVID-19 pandemic has accelerated the widespread acceptance and utilisation of mHealth solutions across various age groups, including the elderly. However, several obstacles must be overcome before mHealth applications may be successfully and consistently used by the elderly. These obstacles include a lack of technological literacy, infrastructure limitations, and discrepancies in access to healthcare services, which result from social or individual factors. By understanding the factors that influence the intention to continue using mHealth applications and tailoring such solutions to meet the unique needs of the elderly, governing bodies can promote the sustained adoption of mHealth technologies, ultimately leading to improved healthcare delivery and management. Hence, this research aims to investigate the factors influencing the elderly's intention to continue using mHealth applications from a gerontological perspective based on the socioenvironmental theory of ageing. Grounded in UTAUT-2, the research combines gerontology factors to create an integrated framework for investigating the continuance intention of mHealth applications among the elderly in Malaysia. The data on the elderly population will be collected using a quantitative research design and analysed using statistical methods, such as correlation analysis, regression analysis, and moderation analysis. The findings of this research are expected to provide valuable insights into the gerontological factors that influence the intention to continue using mobile health (mHealth) applications. The integrated framework of UTAUT-2 and gerontology factors will enhance the understanding of the complexities involved in designing and promoting mHealth applications for the elderly. The results will inform healthcare professionals, policymakers and developers about the strategies to address these gerontological factors and improve the sustained use of mHealth applications among the elderly.

Keywords: Continuous Intention, Gerontology, Mhealth. Elderly.

INTRODUCTION

Technology-supported healthcare is growing rapidly and providing new ways for individuals to manage their health. Even though the elderly may not be as quick to adopt new technology, studies have shown that internet usage among this population continues to increase yearly (Ahmad et al., 2022a; Hunsaker & Hargittai, 2018). For instance, internet usage among UK adults aged 65-74 has risen steadily over the last eight years, from 52% in 2011 to 83% in 2019 (Ahmad et al., 2022a; National Statistics, 2019; Taylor & Silver, 2019). In Malaysia, the internet usage rate among the elderly increased to approximately 1.8% in 2022 (83.7% in 2021 to 85.5% in 2022) (Maizuraa, 2023). The consistent rise can be linked to the continuous movement towards digital inclusion and the positive outcomes of several digital literacy programs. The growing use of mHealth applications for managing health during the pandemic has undoubtedly contributed to this upward trend. Although there is no universally accepted definition for mHealth, the World Health Organization (WHO) describes it as a practice that integrates medical and public health services using mobile devices, personal digital assistants and other wireless devices (Ahmad et al., 2022b; Ryu, 2012). Research indicates that incorporating mHealth technology alongside advice from healthcare professionals can support older adults in cultivating healthier lifestyles by enhancing daily food intake, improving sleep quality, and increasing physical activity (Ahmad et al., 2022a; Changizi & Kaveh, 2017; Heart & Kalderon, 2013; Hunsaker & Hargittai, 2018). Various technologies have been developed to assist the elderly in their daily activities. These include computers, the Internet, digital healthcare technology and others. Therefore, technology is believed to bridge the gap between the elderly's desires and needs. It has great potential to support and prolong independent living for the elderly, improve their mental and physical health and enhance their overall well-being.

As mobile health applications become more popular among the elderly, certain obstacles hinder their full embrace of this technology. Usability issues, like difficulty navigating apps and interfaces, are common concerns. Additionally, age-related sensory declines, such as poor eyesight or hearing, can make it hard for the elderly to use these tools effectively. The lower adoption and usage rates of digital health technologies among the elderly, as expected, present a challenge (Wildenbos et al., 2017). This poses a significant challenge because the elderly often require regular health consultations more than younger people (Liu et al., 2019). A certain level of resistance to embracing new technology has been observed (M.H. Azman Ong et al, 2003). Additionally, in response to the COVID-19 outbreak in Malaysia in 2020, the government introduced a mandatory application tracking system known as MySejahtera. According to (Keertan, 2021) the pandemic may have put the elderly at a disadvantage. It raises important issues about how the elderly may struggle to access or understand technology, which could make it more challenging for them to adapt to using technology from home and accessing digital healthcare services. Hence, the current situation is raising significant concerns, as the Ministry of Health Malaysia is actively working to expand the capabilities of MySejahtera. This expansion aims to incorporate additional health management features to benefit the population.

It has been reported that the elderly population is underrepresented in the use of mHealth technology (Wemnel, 2020). For instance, although people over 60 constitute 25% of the population in Sweden, only 4% had utilised mHealth in 2018 (Duner et al., 2020). This lack of representation can lead to the marginalisation of older adults in advancing and implementing mHealth services. Additionally, it means that the potential of deploying digital technology to ease the burden on traditional healthcare systems available to all generations may not be fully realised

(Fox & Conolly, 2018). The underrepresentation of elderly patients in mHealth adoption and use is also significant to mHealth providers, as the elderly population is a vital part of the future digital health market. The number of people over 60 is projected to triple between 2010 and 2050, from 760 million to 2 billion (Garatchea & Lucia, 2013). In Malaysia, ensuring users' sustained intention to utilise mHealth applications (Mysejahtera) is paramount in promoting their widespread adoption. To achieve this, it is essential to develop strategies that facilitate continued engagement and effective use. Given the increasing importance of mHealth applications in the healthcare industry, it is crucial to prioritise developing and implementing such strategies to maximise the potential benefits of these technologies. Continuity of care in healthcare is essential for effective management, and mHealth applications play a crucial role in facilitating this (Wang et al., 2022). These apps enable continuous communication between healthcare providers and patients, leading to personalised interventions and support. They can also generate valuable health data, aiding trend analysis and personalised care. However, developing and maintaining mHealth applications requires significant resources. Continued usage maximises the return on investment and allows for iterative improvement, enhancing usability and functionality (Lu et al., 2022). Thus, the intention to continue using mHealth applications is vital for sustainable benefits, continuity of care, behaviour change, data generation, cost-effectiveness, and ongoing improvement in mHealth technologies. The primary objective of this study is to develop a conceptual framework based on social gerontological factors as the primary model for examining factors that influence the elderly's intention to continue using mobile health applications. The aim is to understand how social gerontological factors influence the elderly's ability and willingness to continue using these applications. By examining this relationship, the research aims to provide insights into the challenges older individuals face in adopting and maintaining mobile health devices.

LITERATURE REVIEW

Overview of mHealth Use Among the Elderly

The advent of mobile technology has impacted various service sectors, particularly the medical industry, which has benefited from this development. In addition to mobile phones, wirelessly equipped laptops and specialised health-related software applications are now being created, tested and marketed for usage in the field of mHealth. In recent years, there has been a substantial increase in the use of mHealth applications (Fu et al., 2021; Istepanian, 2022; Llorens-Vernet & Miró, 2020; Nunes et al., 2019; Peng et al., 2020). These applications have gained popularity worldwide because they are convenient, have the potential to enhance healthcare access and outcomes and are increasingly being utilised by both patients and healthcare professionals. Mobile health applications have the potential to revolutionise the healthcare industry by giving customers access to a wide variety of resources that can help them manage their health. During the pandemic, digital health technology, including mHealth applications and other digital health tools, offers a range of benefits. These technologies have become essential for effectively managing the growing healthcare demands and reducing the burden on conventional healthcare infrastructure. The COVID-19 pandemic has contributed to the popularity of mHealth applications in Malaysia (Jembai et al., 2022). In Malaysia, the mHealth application, known as MySejahtera, was introduced by the Malaysian government as a response to the COVID-19 pandemic to facilitate contact tracing and health screenings, providing users with relevant health information (Samsuri et al., 2022). During the initial phases of the epidemic, MySejahtera gained significant momentum among Malaysians. This was because it became mandatory for users to check in using the apps

before visiting places such as shopping malls, restaurants and businesses. My Sejahtera allowed users to track their potential exposure to COVID-19, record their personal health information and receive notifications and updates from appropriate health authorities. Future healthcare professionals are open to utilizing mobile technology for medical care, however, the study also highlighted a general lack of public understanding about its use in Malaysia. Enhancing public awareness of mobile technology in healthcare could promote active participation in health management, improve access to reliable information, and encourage preventive measures (Jembai et al., 2022). Efforts to raise awareness should include campaigns, educational programs, and collaboration among healthcare practitioners, lawmakers, and technology experts (Peng et al., 2020; Said, 2022). By bridging the knowledge gap and promoting mHealth applications, Malaysia can strengthen its healthcare industry and empower citizens to manage their health effectively.

Similarly, the expansion of mHealth applications in China has seen remarkable acceleration due to the COVID-19 pandemic, markedly increasing the demand for telemedicine and digital health technologies (Yang et al., 2023). Telemedicine became a vital resource, facilitating the delivery of medical services through electronic communication while minimizing direct patient contact and reducing the risk of disease transmission (Busso et al., 2022; Monaghesh & Hajizadeh, 2020). Consequently, there has been a swift rise in the adoption and utilization of mHealth applications, enabling patients to consult with specialists via video calls and messaging platforms. This surge in the development of mHealth solutions has not only improved access to healthcare services but has also expedited the digital transformation of the healthcare industry in China (Monaghesh & Hajizadeh, 2020). Research by Yang et al. (2023) highlighted the scarcity of comprehensive studies on mobile health (mHealth) applications in China, particularly regarding their quality, effectiveness, and safety. In contrast, a survey in Iran found that 47.9% of participants reported using mHealth applications, with a strong preference for those related to health and fitness (Amer et al., 2022). Additionally, a study conducted by Essén et al. (2022) indicated that countries differ significantly in their development and centralization of health app evaluations. Meanwhile, research by Sujarwoto et al. (2022) in Indonesia revealed that most mHealth apps are utilized for self-assessment, contact tracing, and information dissemination, highlighting notable variations in usage and regulation across Asian nations.

Gerontology

In 1903, Ilya Ilyich Metchnikoff, a Russian Zoologist, coined the term gerontology. It is derived from the Greek words "geron" and "logia", which mean "old man" and "the study of" respectively. Nowadays, gerontology is defined as a multidisciplinary field that extensively studies ageing and older adults, drawing on the expertise of various disciplines such as sociology, biology, and psychology. Gerontology encompasses various fields, including public health, law, nursing, economics, and geography (Bass & Ferraro, 2000; Ayalon et al., 2020). The status of gerontology as a discipline has been a topic of ongoing debate. Some argue that it should not exist as a separate discipline but rather be incorporated into established fields such as psychology or sociology. On the other hand, gerontology should be recognised as a distinct field of study. Some view gerontology as a multidisciplinary field in which researchers from various disciplines employ their methods to explore ageing, old age, and the elderly (Alkema & Alley, 2006). Meanwhile, others support gerontology as an interdisciplinary field, where researchers from different disciplines collaborate to produce research methods and questions that transcend disciplinary boundaries, resulting in a unique and distinct discipline (Alkema & Alley, 2006; Ansello, 2011; Ferraro, 2006;

Ayalon et al., 2020). Gerontology theory has evolved from focusing on extending the quantity of life to improving the quality of life. This shift in focus has led gerontologists to emphasise "adding life to years" rather than "adding years to life." Gerontology theory has primarily developed in Western nations/cultures, with a notable focus in the United States (Ed Rosenberg, 2022).

Social Gerontology

Social gerontology poses unique challenges compared to the biological and behavioural sciences due to the intricate and constantly evolving nature of social phenomena across the lifespan. Ageing is a transformative process in the human body that occurs after physical maturity is reached, often resulting in changes to one's appearance, behaviour, knowledge, social status, and roles. As individuals age, their conduct changes, and social connections and activities become noticeable. The overarching emphasis of sociological theories pertains to the transformations in roles and relationships and their influence on the older adult's ability to adapt. Social gerontology emerged as an attempt to address the social policy implications of demographic changes. Recent schools of thought within social gerontology include critical gerontology and postmodern gerontology (Vincent, 1996). An integrative theory of social gerontology can blend a macro-perspective, examining the social, economic, environmental, cultural, and political contexts that influence human behaviour and health, with the micro-individual and family perspectives (Bengtson et al., 2009). Social gerontology is a field of study that examines how ageing affects people's social lives. It covers a wide range of topics related to health and care services for older adults, social differences that accompany ageing, and factors that impact the lives of ageing people, such as their social class, gender, and ethnicity. Additionally, this field examines how ageing affects society. Researchers in this field aim to understand how to improve the quality of life of older adults (Higgs & Gilleard, 2015). A central aim of social gerontology since its inception has been to improve the lives of older persons (Achenbaum, 1995; Putney, Alley, & Bengtson, 2005).

Socio-Environmental Theory of Ageing

Over the past twenty years, gerontology has identified two competing theories regarding the social interaction and morale of the elderly. These theories are referred to as "activity" and "disengagement." However, both theories have encountered significant explanatory problems as they have been unable to account for many documented instances of behaviour in older people that contradict their viewpoints (Gubrium, 1972). Studies have shown that instances exist where high morale or life satisfaction are linked to isolation and inactivity (Gubrium, 1970; Messer, 1967; Townsend, 1957; Tunstall, 1966). However, activity theory cannot explain these findings as it predicts that only moderate to high levels of interaction or activity lead to high morale.

On the other hand, disengagement theory struggles to explain the despair or dissatisfaction expressed by some individuals who are involuntarily disengaged or socially isolated (Blau, 1956; Lowenthal & Boler, 1965; Tallmer & Kutner, 1970). Disengagement theory would suggest that withdrawal and morale are positively linked, but this is not always the case. Researchers have yet to reach a consensus on the relationship between interaction and morale, as both theories have limitations in explaining this connection. While some have criticised these existing theories, a comprehensive effort to identify alternative factors that could better account for the variability in data has yet to be undertaken. By adopting a socio-environmental perspective, we can gain insight

into the abnormal occurrences mentioned earlier. This approach recognises that the elderly's sphere of activity is complex, with two interrelated contextual dimensions at play. Socio-environmental theory posits that the age-old theories of withdrawal and activity are inadequate. To address this, the socio-environmental approach builds upon these theories by examining the relationship between older individuals and their environment. This approach emphasises the activities that older adults can engage in, considering their social behaviour and the significance of the environment. It is thought that the greater the variety of activities in which older adults can participate, the greater their sense of well-being will be (Gubrium, 1973; AKYILDIZ, 2023). The first aspect is social, focusing on the expected results of having a socially homogeneous community, living close to one another and having a sense of local protection. The second aspect is termed the 'individual context', which encompasses the resources available to a person, such as health, financial stability, and social support, that affect their ability to adapt their behaviour. This viewpoint on ageing emerges from two primary sources. First, there has been a continuous growth in gerontological research and thought, focusing on exploring the link between activity levels and morale through the integration of both environmental and individual factors (Blau, 1956, 1961; Bultena & Marshall, 1969; Carp, 1967; Messer, 1967; Rose, 1965; Rosow, 1967; Townsend, 1957). Studies have shown that in settings where individuals of varying ages interact, older members often hold a higher social standing and experience increased levels of joy, enthusiasm, and engagement with life, compared to situations confined to a particular age demographic. The socio-environmental method incorporates three key elements, as delineated by Gubrium (1973) and Canatan (2008), which are the Normative part: as in the theory of withdrawal from life, norms are descriptions of behaviour known to individuals in social situations and include expectations of behaviour., Individual part: individual behaviours that are visible, as in activity theory, and the degree of effectiveness of these behaviours varies. The personal aspect involves the individual considering the meaning of their own activities and norms, as well as their impact on the environment. If these three elements can be achieved in harmony, society can achieve successful ageing and well-being. Previous social theories have posited various assumptions and conflicting ideas about the specific social circumstances that lead to greater happiness in elderly individuals. However, these theories provide only incomplete insights into the complexities of social behaviour and life satisfaction in later years. At the time, theories that endorsed successful ageing through disengagement, activity or role continuity went largely unchallenged during the 1950s, 1960s, and 1970s. There has been a recent surge in discussions surrounding life satisfaction among older individuals. These debates have explored the nuances of social theories and their competing approaches, revealing incomplete understandings of the subject. The conversations have moved beyond the simplistic notions of disengagement versus engagement or activity versus inactivity.

The individual context includes an ageing person's personal resources, such as health, finances, intelligence, and social support, which can impact their decisions to engage in various activities or maintain their roles (Gubrium, 1972; Krampen, 1988). The social context, on the other hand, refers to the social norms of a society, including the resources and support available to its members, residential proximity, and the level of safety provided by the environment (Fitch & Slivinske, 1989; Gubrium, 1972). The socioenvironmental theory of ageing examines how older individuals engage with their personal resources, social resources, and environment to impact their overall life satisfaction. This theory presents a more dynamic and comprehensive model of interaction, which considers all three factors simultaneously and challenges traditional social theories of ageing, such as abandonment, disengagement, and activity (Fry, 1992). According to this theory, ageing may limit one's ability to participate in activities and maintain roles influenced by personal and societal factors. The socioenvironmental framework of ageing and life satisfaction provides a

comprehensive perspective on how the interplay between individual and social resources influences the well-being and life satisfaction of older adults. This framework recognises the complex and dynamic nature of ageing, emphasising the importance of considering both personal capabilities and societal influences in understanding the experiences of older individuals.

Unified Theory of Acceptance and Use of Technology – 2 (UTAUT-2)

The UTAUT2 model is an extension of the UTAUT model, introduced by Venkatesh et al. in 2012. It replaces the Technology Acceptance Model (TAM) theory, developed by Davis in 1989. The UTAUT2 model aims to explain user intentions to use information systems (IS) and their associated behavior. The model is built on seven pillars: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit (Singh et al., 2022). The UTAUT2 model is grounded in several key principles. Recent studies have explored the impact of continuous intention (CI) on various IT-based products and applications. For instance, there have been studies on mobile payment applications (Al Amin et al., 2023; Elstouhy et al., 2023), food service apps (Cho & Jeon, 2023; Timur et al., 2023), e-commerce (Gabriel et al., 2023; Sihombing et al., 2023), mobile grocery shopping apps (Ligaraba et al., 2023), public bike-sharing apps (Pattnaik & Shukla, 2022), robotic process automation (Zhu & Kanjanamekanant, 2023), sport apps (Perez et al., 2023), health (Rasul et al., 2023; Kautish et al., 2023), and travel apps (Foroughi et al., 2023). Thus, the research aims to examine elderly continuous intention behavior, specifically for mobile applications in the healthcare context, based on the Unified Theory of Acceptance and Use of Technology 2 (UTAUT-2) by examining the effects of critical factors such as performance expectancy, effort expectancy, social influence, hedonic motivation, habit, and elderly continuous intention behavior. Price values were excluded from the study because the mHealth (MySejahtera) application was provided free of charge for all citizens who use government health facilities. In addition, since the government enforced the tracking application, hence, it is free to download the application on smartphones, where the monetary costs of the technology were not an issue, which aligned with the previous studies (Chayomchai, 2020; Chayomchai et al., & Suwanna-pusit, 2020; Walrave et al., 2020) that the price value variables were excluded. These factors enhance our understanding of their significance in the adoption of the mHealth concept in Malaysia. Furthermore, this study makes a significant theoretical contribution by exploring gerontological factors, with particular emphasis on the socioenvironmental theory of ageing as a moderating factor in influencing the relationship between the continuous intention of mHealth application.

Gerontology Perspective: Socioenvironmental Theory of Ageing and UTAUT-2

In recent years, there has been a considerable increase in research focused on ageing, highlighting the significance of these theories. They play a crucial role in enhancing our understanding of the ageing process, thereby helping to improve longevity and quality of life. Exploring ageing theories remains vital as we seek deeper insights into the intricate questions affecting personal identity and development (Powell, 2009). It is essential to acknowledge the valuable contributions of older individuals to society, foster intergenerational solidarity, and counteract negative attitudes and stereotypes. Through concerted efforts and a commitment to lifelong learning and adaptation, we can strive towards a more equitable and supportive environment for individuals of all ages (Paltasingh, 2005). During the 2000s, the field has seen the development of various frameworks

that link technological interventions to different aspects of later life, as highlighted in studies by Cutler (2006), Czaja, Sharit, Charness, Fisk and Rogers (2001), Dishman, Matthews, and Dunbar-Jacob (2004), Fozard & Wahl (2012), and Sixsmith (2013). Although there might be slight variations in the types of interventions and life domains discussed across these studies, they all share a common goal: to explore how technology could potentially influence key areas relevant to gerontology, such as health, mobility, and social connectivity (Schulz et al., 2015). In this advancement, the range of gerontological insights considered relevant to the intersection of ageing and technology has expanded. However, the status of gerontological knowledge remains unchanged: it assesses the effects of technologies (Graafmans, 2017) or identifies the prerequisites for their adoption (Peek et al., 2016). The relationship between ageing and technology has been evident for quite some time, as highlighted by Jones (2015) and Loe (2010). Nevertheless, existing ageing theories fall short of addressing the transformative impact of technology on the ageing process. This is particularly noticeable in how older adults utilize social media to sustain their social connections, a trend explored by Beneito-Montagut, Cassián, and Begueria (2018). Therefore, the integration of UTAUT-2 and gerontology is needed because ageing and technology are co-constituted. They cannot be seen as separate realms but must be studied together.

In addition, designers frequently, and mostly without realizing it, narrow down their concepts about ageing to focus on frailty and impairment when creating design elements (Peine & Neven, 2011; Vines et al., 2015). To effectively explore the intertwined relationship between ageing and technology, integrating STS theories with existing theories of ageing proves beneficial. Further advancing dialogues of concepts, theories, and methodologies from Science and Technology Studies and social gerontology are pertinent to theorizing about ageing–technology relations. The ageing and technology agenda is currently biased toward new technologies and innovation. However, older people already constantly use technology and have their own skill sets and technology literacy (Giaccardi, Kuijer, & Neven, 2016). Therefore, the study invited ageing and technology scholars to move beyond the interventionist logic and study how the contemporary experience of ageing is already co-constituted by Aerotechnology design, the socio-material practices it enacts, and policy discourses around innovation and ageing. Therefore, exploring gerontology perspectives in IT/technology adoption studies is crucial to strengthening the link between the two. A deeper understanding of the elderly is necessary to investigate the continuance intention of using mHealth. Thus, a comprehensive analysis of prior research on continuance intention will be conducted in this study, utilizing the gerontology concept specifically in the socioenvironmental theory of ageing, and Unified Theory of Acceptance and Use of Technology 2 (UTAUT-2) to establish the research framework. Furthermore, new interferences focusing on gerontology factors will be introduced to provide a more comprehensive rationale for the variance of continuance intention in the context of mHealth applications. The present study focuses on gerontology factors, specifically the socioenvironmental framework, including individual resources (skills, education, health condition, and solvency), as an influence on performance expectancy, effort expectancy, facilitating conditions, social influence, hedonic motivation, and habits from UTAUT-2, towards post-adoption behaviour. This research aims to better understand the critical factors driving continuous user behaviour towards technology in the older population.

Continuous intention on mHealth

Minimal research has been conducted on the users' continuous intention to use in the mHealth application context. In this regard, with most apps freely available (as high as 74.78%) (Xu & Liu,

2015) The forces that compel users to continue using mHealth are still unknown. In their research, Liu et al. (2022) investigate the factors that influence patients' willingness to use AI service robots in outpatient settings. They reveal that if patients find a service robot useful, easy to use, and enjoyable, they are eager to continue using it. Moreover, a study by Lu et al. (2023) investigated the impact of health-related stress on the perceived usefulness and satisfaction with mobile health (mHealth) applications. The study revealed a positive correlation between health stress and the perceived effectiveness and satisfaction of using mHealth apps. Consequently, the study implies that mHealth apps can effectively address and mitigate health-related stress. In addition, a study by Birkmeyer et al. (2021) investigated the factors influencing the success of mHealth services from the users' perspective. The study identified four key internal variables - user attitude, satisfaction, intention to continue using the service, and word of mouth - as crucial factors for the successful implementation and functioning of health applications. Understanding these factors can help companies allocate their resources effectively.

JUSTIFICATION OF THEORIES

Numerous reviews have examined the various theories that explain the determinants of continuance intention. Most prior studies that analysed the post-adoption behaviour of using various technologies, specifically the continuance intention, leveraged the UTAUT-2 theories as the underlying frameworks. The analysis of continuance intention (CI) in technological contexts is often approached through the application of established theories, such as the Expectancy Confirmation Theory (ECM) (e.g. Jangir et al., 2023; Kirmani et al., 2023; C. et al., 2022) and the Stimulus, Organism, Response (SOR) theory (Gabriel et al., 2023; Pattnaik & Shukla, 2022). These theories have proven effective in assessing and understanding consumer behaviour, particularly in the context of emerging technologies. Other theories used in continuance intention are Attitude-Behavior-Context (ABC) (David) (Liu et al., 2023), Innovation Resistance Theory (Kautish et al., 2023), the IS Continuance Model (eg Perez-Aranda et al., 2023), and the Job Demand-Resource Model (JD-R) (Zhu & Kanjanamekanant, 2023). The previous model utilised for predicting product usage continuation had limitations in accounting for the observed variance. Integrating new variables could prove effective in enhancing the model's accuracy. Previous models were inadequate, but including fresh variables can significantly improve their precision. For instance, models such as the Attitude-Behaviour-Context (ABC) model, the IS Continuance Model, and the Job Demand-Resource Model (JD-R) have failed to explain essential health aspects pertinent to health-related applications, as they have been previously tested in different contexts, including job demand, sports apps, and general apps. The original theories were not formulated within the context of public health, and their primary objective did not explicitly involve encouraging the uptake of innovative health technologies or solutions. The Attitude-Behaviour-Context (ABC) model often forecasts customer behaviour in various situations and settings. It shows how contextual factors affect users' attitudes toward participating in specific activities. However, some experts argue that the model does not provide sufficient evidence of how Post-Adoption Perceived Usefulness and Post-Adoption Perceived Risk evolve to sustain continued use. The model does not clarify how these post-adoption perceptions relate to ongoing intentions, especially in the elderly context, which is found to be insignificant (David) (Liu et al., 2023). While most studies provide insights into the determinants of mHealth continuance intention, they do not explore how the perception of elderly gerontology factors affects this intention. Most previous studies either use the original version of the model or modify it by including new factors such as satisfaction and self-efficacy (Lin et al., 2023), perceived risk and perceived trust (Zhu et

al., 2023), app quality (Singh et al. (2023), doctor's service, perceived reliability, return policy, and website information (Gani et al., 2022). Although UTAUT-2 is a widely recognised theory in information systems research, it falls short in one key area that has yet to be addressed. While the theory is comprehensive in many ways, very few studies include gerontology factors, such as individual resources, in their conceptual model development. This omission restricts the ability to expand upon the existing theory and impairs further theoretical advancement. Recently, some studies have employed a combination of several theoretical models as the basis for selecting individual factors for research. However, its use as a factor of influence remains minimal, resulting in a less comprehensive analysis of the factors that influence it. Therefore, modifying the model with relevant variables in practical applications can increase its explanatory power and improve its accuracy in specific technical procedures (Zhu et al., 2023).

Conceptual framework

Proposed Framework and Conceptual Overview.

Based on reviews from past literature, the study variables are determined by integrating one main theory and additional variables recommended by previous research. This study applies a model of UTAUT-2 and the gerontology framework as moderators to expand the research scope of examining the continuance intention for mHealth applications. This study is more novel than the previous studies because it integrates and analyzes individual attitudes and continuous intention towards post-adoptive behaviour, which most previous studies have overlooked. Moreover, it differs from previous studies on mHealth applications, which have mostly focused on observing the adoption level. The study would like to confirm that UTAUT-2 and gerontology perspectives are integrated in explaining the variance of continuance intention for mHealth app/ Mysejahtera. 42 constructs have been identified, and their relationships are detailed in the following subsections. This study develops a research model as shown in Figure 2.3. Based on this research model, all constructions are related positively. According to the available research, there appears to be a lack of thorough investigation into the effects of chronological age and the ageing process on technology acceptance. Furthermore, there is a possibility that the current body of research may be influenced by biases or misinterpretations, leading to incomplete or inaccurate conclusions (Sixsmith, 2013; Wanka & Gallistl, 2018; Manheim et al., 2023). Furthermore, most recent studies on health still exclude the elderly as a study population (Haikal et al. 2022). There is still a need for further research on technology acceptance among older people (Marangunic & Granic, 2015; Williams et al., 2015; Manheim et al., 2023).

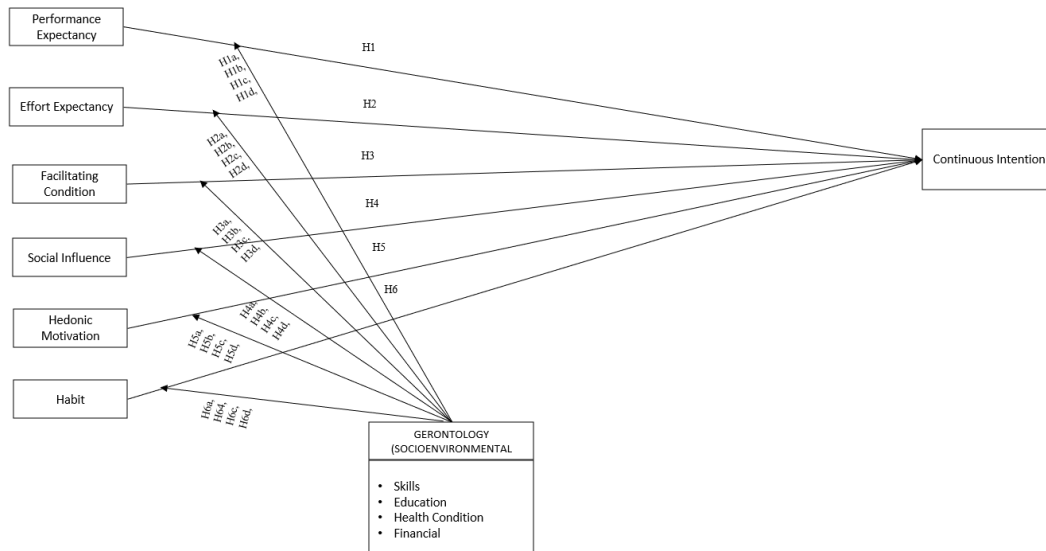


Figure 2.3: Research Model

Development of Hypotheses

Based on the conceptual overview discussed previously, 48 hypotheses were developed to describe the causal link designed in the theoretical framework. The following sub-section outlines the hypotheses developed in this study.

Effect of Performance Expectancy on Continuous Intention and Individual Resources Interference of Gerontology. Thus, this study theorizes that perceived expectancy is critical for mHealth continuance intention:

H1: A positive relationship exists between performance expectancy and continuance intention of the elderly on mHealth usage.

H1a: The relationship between performance expectancy and continuous intention of mHealth usage will be stronger for the elderly with high cognitive skills compared to the elderly with lower cognitive skills.

H1b: The relationship between performance expectancy and continuous intention of mHealth usage will be stronger for the elderly with good health conditions compared to the elderly with lower health conditions.

H1c: The relationship between performance expectancy and continuous intention of mHealth usage will be stronger for the elderly with a high education compared to the elderly with a lower education.

H1d: The relationship between performance expectancy and continuous intention of mHealth usage will be stronger for the elderly with good financial ability compared to the elderly with lower financial ability.

Effect of Effort Expectancy on Continuous Intention and Individual Resources Interference in Gerontology

H2: A positive relationship exists between effort expectancy and continuance intention of the elderly on mHealth usage.

H2a: The relationship between effort expectancy and continuous intention of mHealth usage will be stronger for individuals with high cognitive skills compared to individuals with lower cognitive skills.

H2b: The relationship between effort expectancy and continuous intention of mHealth usage will be stronger for individuals with good health conditions compared to individuals with lower health conditions.

H2c: The relationship between effort expectancy and continuous intention of mHealth usage will be stronger for individuals with a higher education compared to individuals with a lower education.

H2d: The relationship between effort expectancy and continuous intention of mHealth usage will be stronger for individuals with good financial ability compared to individuals with lower financial ability.

Effect of Social Influence on Continuous Intention and Individual Resources Interference in Gerontology

H3: A positive relationship exists between social influence and continuance intention regarding mHealth among the elderly.

H3a: The relationship between social influence and continuous intention of mHealth usage will be stronger for individuals with high cognitive skills compared to individuals with lower cognitive skills.

H3b: The relationship between social influence and continuous intention of mHealth usage will be stronger for individuals with good health conditions compared to individuals with lower health conditions.

H3c: The relationship between social influence and continuous intention of mHealth usage will be stronger for individuals with a higher education compared to individuals with a lower education.

H3d: The relationship between social influence and continuous intention of mHealth usage will be stronger for individuals with good financial ability compared to individuals with lower financial ability.

Effect of Hedonic Motivation on Continuous Intention and Individual Resources Interference of Gerontology

H4: A positive relationship exists between hedonic motivation and continuance intention regarding mHealth among the elderly.

H4a: The relationship between hedonic motivation and continuous intention of mHealth usage will be stronger for individuals with high cognitive skills compared to individuals with lower cognitive skills.

H4b: The relationship between hedonic motivation and continuous intention of mHealth usage will be stronger for individuals with good health conditions compared to individuals with lower health conditions.

H4c: The relationship between hedonic motivation and continuous intention of mHealth usage will be stronger for individuals with a high education compared to individuals with a lower education.

H4d: The relationship between hedonic motivation and continuous intention of mHealth usage will be stronger for individuals with good financial ability compared to individuals with lower financial ability.

Effect of Facilitating Condition on Continuous Intention and Individual Resources Interference in Gerontology

H5: A positive relationship exists between facilitating condition and continuance intention of the elderly on mHealth usage.

H5a: The relationship between facilitating condition and continuous intention of mHealth usage will be stronger for individuals with high cognitive skills compared to individuals with lower cognitive skills.

H5b: The relationship between facilitating condition and continuous intention of mHealth usage will be stronger for individuals with good health conditions compared to individuals with lower health conditions.

H5c: The relationship between facilitating condition and continuous intention of mHealth usage will be stronger for individuals with a high education compared to individuals with a lower education.

H5d: The relationship between facilitating condition and continuous intention of mHealth usage will be stronger for individuals with good financial ability compared to individuals with lower financial ability.

Effect of Habit on Continuous Intention and Individual Resources Interference of Gerontology

H6: A positive relationship exists between habit and continuance of the elderly on mHealth usage.

H6a: The relationship between habit and continuous intention of mHealth usage will be stronger for individuals with high cognitive skills compared to individuals with lower cognitive skills.

H6b: The relationship between habit and continuous intention of mHealth usage will be stronger for individuals with good health conditions compared to individuals with lower health conditions.

H6c: The relationship between habit and continuous intention of mHealth usage will be stronger for individuals with a high education compared to individuals with a lower education.

H6d: The relationship between habit and continuous intention of mHealth usage will be stronger for individuals with good financial ability compared to individuals with lower financial ability.

Theoretical Contributions

Studies on mHealth have emphasised the need to understand continuance intention, which refers to why individuals persist in using a particular technology. Although the Unified Theory of Acceptance and Use of Technology (UTAUT-2) has been applied to explore this concept, more comprehensive testing across various technologies is necessary. Understanding continuance intention is crucial because individuals often derive lasting benefits from sustained technology use, as seen with mHealth. Moreover, most research on technology adoption focuses on behavioural intention, usage behaviour and actual usage, often neglecting the long-term benefits and continuous intention. Further investigation is needed to explore the potential benefits of adopting technology, with a specific focus on its impact on overall well-being. Although UTAUT-2 has been utilised to evaluate mHealth behaviour, there are inconsistencies in its explanation of behaviour. Therefore, further investigation is necessary to gain a comprehensive understanding of the factors that impact mHealth usage.

Additionally, there is a notable gap in mHealth research on how ageing affects technology acceptance. An integrated, user-friendly framework should be developed to address this gap, incorporating gerontology concepts based on socioenvironmental theories of ageing. Despite numerous studies, the application of gerontology concepts in technology acceptance research remains limited, often treating the elderly as a context rather than exploring their characteristics in specific contexts, such as financial, leisure, and social activities. Nevertheless, addressing these gaps can help develop a comprehensive understanding of the factors influencing the elderly's

continued use of mHealth applications and enhance the design and implementation of these technologies to better serve their needs. Therefore, a deeper and more comprehensive understanding of the elderly is needed to identify factors influencing their continuous intention to use technology. Such knowledge would help researchers to develop effective strategies to enhance technology adoption among the elderly and improve their overall quality of life. The study will contribute to the existing body of knowledge by adding gerontology factors, particularly based on the socioenvironmental theory of ageing. It will provide a comprehensive framework for understanding the continuance intention of mHealth applications among the elderly. This integrated framework can enhance our understanding of the unique challenges and considerations in designing and promoting mHealth applications tailored to the elderly.

FUTURE RESEARCH DIRECTIONS

This conceptual framework provides a basis for understanding why elderly users in Malaysia continue to use mHealth applications. However, numerous opportunities for future research could enhance and validate this framework. Future investigations should focus on empirically testing the proposed framework. Researchers can gather data through surveys or experiments involving elderly users of mHealth apps to evaluate the connections between key factors, such as perceived usefulness, trust, and the intention to continue using the applications. Structural equation modelling (SEM) would be a suitable approach for confirming these connections and reinforcing the theoretical aspects of the framework. Moreover, conducting longitudinal studies would yield valuable insights into how satisfaction and health benefits change, affecting older users' choices to remain engaged with mHealth applications. Following users over an extended period also helps pinpoint significant moments influencing whether they continue or discontinue their app usage. A promising direction for future research is to expand the study by incorporating grounded theory and gerontological concepts as potential moderators within the framework. Gerontology, which examines ageing, provides important insights into the physical, psychological, and social transformations that older adults experience. By incorporating factors such as cognitive decline due to ageing, social isolation, and overall health, researchers can enhance their understanding of how these aspects affect the likelihood of elderly users continuing to engage with mobile health (mHealth) applications. These elements could influence the relationships among self-efficacy, trust, and the intention to continue using the apps, resulting in a more comprehensive view of elderly users' sustained involvement with mHealth solutions. Improving the user experience (UX) of mHealth apps is vital for encouraging older adults to use them consistently. Future research should focus on enhancing accessibility by incorporating features such as larger fonts, voice commands, and simplified designs. These adjustments will assist elderly users facing visual challenges, cognitive issues, or low digital literacy. By making these apps more straightforward, we can ensure that older adults start using mHealth applications and continue to benefit from them over the long term.

CONCLUSION

This conceptual framework provides valuable insights into the factors influencing the engagement of elderly users with mHealth applications in Malaysia. By examining critical gerontological aspects such as skills, education, health status, and financial resources, this study contributes to the expanding knowledge of digital health adoption, particularly among older adults, which is

often overlooked in mHealth research. The framework emphasises the importance of long-term engagement, which is crucial for developing mHealth applications that encourage initial use and ensure sustained participation and meaningful health benefits. It aims to fill existing gaps in the literature by offering a thorough approach to understanding how older users interact with mHealth applications over time. This framework focuses on the factors influencing continued intention, providing valuable insights into maintaining the engagement of elderly users with mHealth apps and ultimately enhancing their long-term health outcomes. This research also emphasises the significant impact of gerontological principles on understanding how elderly users engage with technology. Integrating these principles into future studies will contribute to a deeper comprehension of the specific needs and challenges faced by elderly users. Policymakers and healthcare professionals must collaborate to address these obstacles and create a supportive environment for elderly users in their digital health experiences. Ultimately, this framework provides a foundation for developing practical, accessible, and user-friendly mHealth applications that cater to the needs of older populations. By focusing on the factors that drive continued use, researchers, developers, and policymakers can collaborate to create solutions that not only engage elderly users but also keep them active with mHealth apps, resulting in sustained health benefits. Incorporating gerontological insights and enhancing digital literacy will be crucial for ensuring the success of these applications in improving the health outcomes of older individuals.

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INVISIBLE STRUGGLES: EXPLORING THE POSTPARTUM CARE BURDEN OF B40 WORKING MOTHERS IN KLANG VALLEY

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ABSTRACT

Postpartum care is a crucial phase in a mother's life, marked by profound physiological, psychological, and social changes. For working mothers from the low-income (B40) group in urban settings such as the Klang Valley, this period is often filled with unmet needs and overlooked challenges. Despite the critical nature of postpartum care in ensuring long-term maternal health, many of these women face barriers that restrict access to adequate support and services. This study aims to explore the challenges experienced by B40 working mothers during the postpartum period, with a particular focus on the social and economic dimensions that shape their recovery journey. A qualitative research design was employed, using in-depth interviews with selected B40 working mothers to capture their lived experiences. The findings revealed a complex interplay of physical, emotional, cultural, and economic factors that affect the quality of postpartum care received. Participants reported experiencing persistent physical discomfort and emotional exhaustion, compounded by limited financial resources, lack of workplace support, and the weight of cultural expectations. Many were expected to return to work prematurely, without adequate rest or recovery, often while managing childcare with minimal assistance. In cases where postpartum needs were left unaddressed, prolonged emotional fatigue and psychological distress were evident. These challenges, deeply rooted in gender roles and socio-economic inequalities, demonstrate that postpartum care must be viewed not only as a health concern but also as an issue of equity and social justice. Addressing these intersecting factors is essential to improving maternal well-being and promoting inclusive healthcare policies.

Keywords: B40 Mothers, Confinement, Maternal Health, Postpartum Care, Workplace Support.

INTRODUCTION

The postpartum period represents a vital stage in a woman's life, characterized by significant physical, emotional, and social transformations. The postpartum period refers to the time following childbirth, a phase marked by substantial physiological, psychological, and social

changes. Postpartum care encompasses a range of services and interventions provided to mothers and infants during the weeks or months after delivery, addressing these multidimensional aspects of recovery. Adopting specific physical practices during this stage can support maternal recovery, prevent potential health complications, and facilitate the transition into a maternal identity (Fadzil et al., 2016). In the Malaysian context, postpartum care has traditionally been provided by the mother or mother-in-law, with family members offering emotional support, practical assistance in infant care, and guidance on health practices (Qi et al., 2022). In contemporary settings, these traditional practices are often complemented by modern approaches, including clinical services such as professional confinement centers. The coexistence of both traditional and modern practices reflects their perceived benefits, particularly in promoting maternal recovery and overall well-being.

Adequate postpartum care is essential for maternal recovery and the prevention of long-term complications, yet its accessibility and effectiveness warrant further investigation. This is particularly critical for mothers in the B40 income group, who may face compounded challenges in obtaining adequate support during the postpartum period. Insufficient care has been linked to adverse outcomes, including physical complications such as infections and psychological conditions such as postpartum depression. Although postpartum services and facilities are increasingly available, especially in urban areas, evidence suggests that many working mothers from low-income households continue to experience barriers to accessing high-quality care. However, limited studies have examined the extent to which postpartum care in Malaysia addresses the specific needs of B40 mothers, highlighting a crucial gap for future research.

According to the Malaysia Progress 2014–2019, women in the B40 group face significant challenges, including high living costs, restrictive workplace policies, and limited social support. These factors hinder access to quality postpartum care, making it essential to investigate the experiences of working B40 mothers. This study examines the effectiveness of postpartum care centers and workplace support systems in meeting their needs, while also identifying solutions to improve service provision and accessibility. Research on postpartum care that considers sociodemographic and economic factors among lower-income groups in Malaysia remains limited. The National Health and Morbidity Survey (2022) further highlights the urgency of this issue, reporting that 10.4% of postpartum mothers experience depression, with higher prevalence among single mothers. Addressing these gaps is vital to improving maternal health equity and ensuring comprehensive support for vulnerable mothers in Malaysia. Therefore, this research aims to explore the challenges, motivations, and support systems influencing B40 working mothers' access to postpartum care.

UNDERSTANDING POSTPARTUM CARE

The structural shift in urban settings has led working mothers to increasingly rely on professional postpartum care services rather than traditional family support, which has become less accessible due to factors such as geographical distance and changing work patterns driven by economic and social forces (Foong, 2021). While the rapid growth of postpartum care services in urban areas like the Klang Valley suggests improved access, B40 working mothers continue to face persistent barriers, including high service costs, rising living expenses, and inflexible workplace policies. Research focusing on B40 working mothers in urban areas remains limited, despite the fact that they must navigate financial constraints, work–life balance, and postpartum recovery within

challenging urban contexts. Substandard living conditions, such as cramped housing, further hinder inclusive recovery.

Due to high living costs and low wages—often below RM4,500—B40 mothers experience heightened socioeconomic vulnerability. They shoulder dual roles as primary caregivers and income earners, creating significant strains on time and resources. Moreover, systemic neglect in maternal healthcare persists, as many rely on government facilities where guidance on physical and psychological recovery is limited. The National Health and Morbidity Survey (2022) reported that 10.4% of mothers experience postpartum depression, yet psycho-social support services remain inadequate. In the Klang Valley, the high cost of living often forces mothers to make difficult tradeoffs between basic needs and their own postpartum care, exacerbating health and well-being risks.

Socio-economic and Structural Challenges in Urban Environments

Working mothers often face challenges that extend beyond the initial three-month recovery period, with many experiencing prolonged exhaustion that negatively affects their well-being. This strain stems from the dual commitments of employment and motherhood, as highlighted in a study from Sarawak, which emphasizes the need to address both the emotional and physical burdens faced by new mothers (Ensayan et al., 2023). However, the underlying causes of these strains vary. Baliga (2017) points to the lack of social support from immediate family members—such as husbands or in-laws—as a key factor contributing to difficulties in adjusting to motherhood while maintaining employment. Insufficient family support has been associated with both emotional and physical challenges, including postpartum depression (Taylor, 2022). Conversely, mothers who receive adequate social support report reduced stress levels, as such support is shown to have a protective effect by lowering anxiety and depressive symptoms (Feinberg et al., 2022). In the absence of strong family support, some mothers turn to domestic helpers as an alternative source of assistance (Baliga, 2017). Yet, accessing adequate formal postpartum or confinement care often requires considerable financial resources (Khor et al., 2024). For B40 working mothers, limited financial means and workplace constraints create significant barriers to obtaining such care. Consequently, economic pressures intersect with an already fragmented maternal care landscape, leaving many mothers with insufficient support systems during a critical phase of recovery.

Gaps in Current Postpartum Care Systems

Despite the critical role of postpartum care in supporting maternal health and recovery, significant gaps persist in both healthcare provision and workplace policies in Malaysia. Within the healthcare system, access to adequate postpartum services remains uneven. High financial costs, coupled with the absence of government subsidies, make many therapies unaffordable for B40 mothers. Structural limitations such as shortages of trained therapists, particularly in rural areas, and high burnout rates further constrain service delivery (Yasin et al., 2024). Additionally, the lack of integration between postpartum services and mainstream healthcare, including pediatric care, leaves mothers navigating a fragmented system, often relying heavily on informal family

support. This cycle of limited access and financial stress not only compromises maternal well-being but also increases the risk of long-term health costs (Khor et al., 2024).

Parallel to these systemic healthcare gaps are shortcomings in workplace policies. Although the Malaysian government has introduced Family Friendly Working Conditions—including flexible hours, work-from-home arrangements, and statutory maternity leave (Omar et al., 2020)—the extent of their implementation and uptake remains unclear. Moreover, inconsistent enforcement, particularly within the informal sector and among private employers, reduces their effectiveness (Pozian et al., 2022). Socio-cultural barriers also continue to hinder women's ability to fully benefit from these measures. Taken together, these healthcare and policy gaps create compounded challenges for B40 working mothers, who face financial constraints, limited access to professional care, and insufficient workplace support. While existing studies acknowledge the importance of postpartum care, limited research has examined how these structural and socio-economic barriers intersect to affect working mothers in urban Malaysia. This study seeks to address these gaps by exploring the challenges, motivations, and support systems shaping B40 working mothers' access to postpartum care.

METHODOLOGY

This study adopts a qualitative research design due to its suitability for examining the sensitive challenges faced by low-income working mothers during the postpartum phase. Qualitative methods allow researchers to explore issues that are not easily categorized, such as the adversities experienced by B40 mothers (Tenny et al., 2022). Since behaviours, experiences, and attitudes are difficult to quantify, this approach enables participants to share their perspectives more openly, providing richer insights into the contexts shaping their experiences (Islam & Aldaihani, 2022). Furthermore, qualitative inquiry facilitates the identification of key themes and patterns, offering a nuanced understanding of societal gaps and supporting the development of recommendations tailored to the specific needs of affected mothers.

Study location and population

The target population of this study consists of five working mothers from the lower-income (B40) group residing in the Klang Valley, specifically in the Gombak and Kuala Lumpur areas. Participants are between 20 and 40 years old, reflecting the typical childbearing age range (Lazzari et al., 2024). To capture relevant experiences, the postpartum period considered is limited to within five years, as a longer timeframe may reduce participants' ability to accurately recall their challenges. The study focused on married women employed in either the formal or informal sector with a household income below RM5,000, ensuring alignment with the research objectives. Participants were drawn from the three main ethnic groups in the Klang Valley—Malay, Indian, and Chinese—to reflect diversity in perspectives. Purposive sampling was employed to ensure that respondents met the inclusion criteria and could provide rich, relevant data (Campbell et al., 2020). Recruitment was facilitated through the assistance of social workers and selected organizations in Kuala Lumpur, as well as outreach via social media platforms such as Facebook and WhatsApp.

Data collection methods

In-depth interviews were conducted with B40 working mothers to explore their personal experiences of postpartum care. This method enabled participants to describe their experiences in their own words, providing richer and more nuanced data (Knott et al., 2022). Open-ended questions were used to encourage open sharing, and each interview lasted approximately 45 minutes to one hour. The interviews were conducted in Malay, either face-to-face or via online platforms such as Google Meet and WhatsApp video calls. With participants' consent, all sessions were audio-recorded to ensure accuracy, as recorded data capture details more effectively than written notes (Rutakumwa et al., 2020). Thematic analysis was employed following Braun and Clarke's (2022) framework, offering flexibility in identifying themes and patterns, particularly in examining the individual challenges of postpartum among B40 mothers. Ethical considerations were prioritized throughout the study. Participants were fully informed about the purpose of the research and provided voluntary consent, with the freedom to withdraw at any stage (Arifin, 2018). To protect confidentiality, pseudonyms were assigned during reporting.

FINDINGS

The findings of this study reveal two critical insights: the intersectional challenges faced by working mothers in the postpartum period and the pressing need for holistic care that addresses their physical, emotional, and socioeconomic well-being.

A) INTERSECTIONAL CHALLENGES

This theme highlights the multilayered challenges B40 working mothers face during the postpartum period, focusing on the sub-themes of physical and emotional struggles as well as socio-economic burdens.

Physical challenges

All participants reported significant physical challenges, particularly persistent body pain and soreness that affected their daily activities. These difficulties often extended for weeks after childbirth. For instance, Rina, a respondent who had undergone three Caesarean deliveries, described experiencing prolonged and intense pain:

"Even after a month, I was still in pain. Yes, a whole month. I could walk already, but the pain was still there."

Moreover, the limited attention given by healthcare workers regarding postpartum body care—particularly after a first delivery—left many mothers struggling with ongoing physical difficulties, especially those who had undergone caesarean sections. Participants noted that such experiences were more common in government healthcare institutions, where guidance was often minimal or absent. As Zaleha reflected:

“My stitching sometimes has infection and when I referred to the nurse they said it's normal but I didn't know at first that I have to clean it so I was a bit clueless.”

Umie shared her experience of receiving little to no instruction or support from healthcare workers after childbirth. She recalled being left alone with her newborn without any guidance or demonstration, despite her inexperience with essential tasks such as holding the baby and changing diapers:

“After delivery, I really didn't know how to handle the baby. The nurse just left the baby there and didn't even guide me and at that time I didn't know how to do things like changing diapers.”

This highlights a critical gap in postpartum care where mothers, particularly first-time mothers, are expected to manage newborn care independently without adequate support, reflecting systemic shortcomings in healthcare practices.

In addition, respondents reported experiencing physical limitations after childbirth, particularly when returning to work. For some, these challenges persisted for months or even years, affecting their daily routines and job responsibilities. Zaleha, for example, described her inability to perform physically demanding tasks such as lifting stock or binding documents, which often triggered abdominal pain. She also noted that, for a period of time, she had to rely heavily on colleagues for support at work:

“I could not pick up heavy stocks when the boss came and also for binding documents. I could not do it for many months because I need to use stomach muscles, so my friend would do it for me.”

These accounts highlight how prolonged physical limitations not only affected mothers' productivity but also revealed the insufficient attention given to postpartum recovery and workplace accommodations. They further underscore the persistent vulnerability of women's bodies during the postpartum phase, where physical challenges were often understood through traditional knowledge systems rather than supported by biomedical perspectives on recovery.

Psychological challenges

Apart from physical recovery, respondents also reported facing a range of psychological and emotional challenges after childbirth, shaped by cultural expectations, family dynamics, and social judgment. Rina, for instance, described the mental strain of navigating conflicting parenting advice from older generations, which created emotional tension and confusion during her confinement period. These intergenerational differences in childcare practices often left mothers feeling torn between traditional norms and their own preferences:

“I wanted to breastfeed. But during my mother's time, breastfeeding wasn't fully encouraged and formula was more common. So there was a misunderstanding. It felt like no one understood. Back then, formula milk was famous and convenient. It was hard to switch back to breastfeeding.”

In addition, social judgments and unsolicited remarks further compounded this distress. Two mothers recounted feeling deeply hurt by comments that questioned her ability as a mother and criticized her physical appearance. Such remarks not only undermined their confidence but also had a lasting impact on their emotional well-being. Collectively, these experiences highlight how cultural pressures and social scrutiny intensify the psychological challenges of postpartum recovery, leaving mothers vulnerable to feelings of inadequacy, confusion, and emotional strain.

“People will ask why are you so skinny and do you not eat, and some ask why my baby is always crying and they ask whether I know or not how to take care of the baby. I feel like I'm a failed mother because of people's complaints.” – Laila

“My boss said if I could not come to work I have to find a replacement and if I don't work I could not get any money so whether I like it or not I have to work.” – Alya

These experiences illustrate the emotional strain postpartum mothers endure as they navigate conflicting expectations, particularly while balancing the added responsibilities of being a working mother.

Socio-economic Burdens

Socio-economic burdens emerged as a significant concern for B40 working mothers during the postpartum period. Respondents consistently reported that financial pressures extended from pregnancy into the months following childbirth, affecting both infant-related needs and maternal recovery. These burdens included costs associated with emergency medical procedures, maternity clothing, infant necessities, and health-related equipment. Such financial strain illustrates the compounded challenges faced by low-income mothers, who must balance economic vulnerability with the physical and emotional demands of postpartum recovery.

“For personal needs and baby delivery items, they are pricey. So, I started saving up early right from the beginning of my pregnancy, I began collecting pre-loved items, do what I could.”

Beyond infant-related necessities, mothers also reported the need to purchase recovery products essential for their own health, such as compression socks to improve blood circulation. Zaleha, for instance, shared that despite the high cost, she felt compelled to buy the socks to prevent potential blood clots. This example highlights how postpartum recovery for low-income mothers incurs additional, often overlooked expenses that can exacerbate financial strain and impact overall maternal well-being:

“I have to buy compression socks for RM100, very expensive but I had to so that the sock can make my blood flow easier and to avoid clotted blood.”

Mothers also experienced emotional stress while preparing to return to work, particularly as they helped their children adjust to their absence. For example, Zaleha described trying multiple bottle brands in the hope that her baby would accept at least one, a process that strained both her finances and emotional energy. Such experiences illustrate how the transition back to work imposes dual burdens on low-income mothers, affecting their well-being and household resources.

“A few days before returning to work, I feel really stressed when the baby does not want to bottle feed. I had to try many brands that are cheap or expensive.”

In some cases, financial strain was evident as respondents reported that their monthly salaries were largely consumed by baby-related expenses. Essential items such as diapers, milk, and clothing required regular monthly purchases. One participant noted that her entire salary was often exhausted shortly after payday, while another highlighted transportation costs, including rides to clinic appointments, as a significant contributor to overall expenses. These accounts underscore the persistent financial pressures faced by low-income mothers during the postpartum period.

“But when I received our salary, it was mostly gone after buying baby stuff.” – Umie

“So many of the expenses, most of it goes to the Grab so it's quite hard during those times.” – Laila

Moreover, some mothers experienced intense pressure to return to work before fully recovering. Alya, for instance, resumed work just 50 days after confinement due to the absence of alternative income to support her family. These economic pressures often intersected with emotional and physical recovery, amplifying the challenges of postpartum motherhood and placing additional strain on their well-being.

B) HOLISTIC POSTPARTUM RECOVERY

The findings highlight the urgent need for holistic postpartum care that encompasses physical recovery, emotional and psychological support, and socioeconomic assistance, emphasizing the role of healthcare systems and workplace policies in enabling working mothers to navigate the postpartum period effectively.

Physical Recovery Support

Most respondents emphasized the importance of physical recovery during the postpartum period, particularly following labor or surgery. They highlighted that recovery is crucial not only for immediate well-being but also for long-term health. Consequently, many mothers expressed a strong need for confinement care centers that provide services such as massages, hot compresses, and spacious resting environments. Massage and hot compresses were consistently cited as essential elements, as they help alleviate bodily discomfort and support the healing process.

“I need massages. Definitely massages. And hot compresses. Those are the most important. Because I only just gave birth. Massage is essential.” – Umie

“A massage. To help take care of the baby too. I don't move much, so I heal faster. If I move too much, it hurts below, my joints also would hurt.” – Alya

However, most mothers are aware of these confinement centers and recognized their high costs, leading many to feel that professional postpartum care was financially out of reach—particularly for those supporting multiple children and facing existing economic constraints.

“Very good actually. They specialize in caring for mothers and babies. It’s helpful but only for those who can afford it. Not everyone can, especially with many children. I have to prioritize.” – Rina

For some mothers, a key reason for seeking confinement care centers was the inadequacy of their home environment. Many reported that limited space, lack of privacy, and general household discomfort made it difficult to rest and recover effectively, potentially slowing the healing process after childbirth.

“Mostly because my house is quite small so I need a more spacious room. And I don’t really have a place that is good enough to rest. But because of financial problems, I don’t think it’s possible to go to these places” – Laila

Overall, the findings highlight that both the physical environment and affordability play critical roles in postpartum recovery, with many mothers relying on confinement care centers to access suitable facilities and support that may be unavailable at home.

Psychological Support

The psychological dimension of postpartum recovery was also highlighted by respondents, many of whom shared their emotional struggles and the need for mental health support from those around them. Mothers reported that during confinement, they often kept their feelings to themselves, fearing that sharing their challenges would burden others, which in turn contributed to emotional stress. Laila emphasized the importance of having someone to turn to during confinement, particularly to help navigate the transition into motherhood:

“I think emotional help because I as mothers mostly will just keep to ourselves as I don’t want to burden people. People like counselors are a must have because not all people are suitable for us to tell stories to. Aside from being emotional, I want a massage and a place that is comfortable to sleep because we are there to rest.”

Similarly, Zaleha expressed a desire to feel mentally rejuvenated during the confinement period:

“For the mother, I want to feel refreshed because in confinement, I feel stressed so I want a kind of spa.”

Feelings of being overwhelmed are common among mothers during this period, as their bodies adjust physically and emotionally to caring for a newborn. While confinement care is intended to support recovery, it can become a source of emotional stress when adequate rest or support is lacking. Access to healthcare professionals, including nurses and doctors, is crucial during this time, as their guidance and availability can help alleviate emotional pressure and provide reassurance throughout the confinement period.

DISCUSSION

The findings of this study affirm that postpartum experiences among B40 working mothers are shaped by the intersection of socioeconomic status, gender roles, and institutional shortcomings. As Taylor et al. (2021) argue, maternal care cannot be viewed in isolation from women's social positions and daily responsibilities. From an intersectional lens, these challenges are structural rather than purely personal. Low-income urban mothers face economic vulnerability and gendered caregiving expectations, consistent with Crenshaw's (1991) framework. Factors such as financial insecurity, unstable employment, and motherhood roles deepen exclusion from appropriate care. Participants described persistent physical pain, emotional strain, and financial stress, with caesarean mothers particularly disadvantaged. Despite visible distress, many received inadequate guidance from healthcare workers. This institutional neglect aligns with Molin et al. (2021), who highlight how long-term postpartum pain is often overlooked in low-income contexts. Symptoms frequently extended well beyond confinement, affecting mothers' physical, social, and psychological wellbeing.

The psychological effects were equally profound. Mothers reported depression, anxiety, and feelings of inadequacy, often intensified by cultural pressures to follow traditional practices. These expectations created confusion and distress, echoing Grattan et al. (2024), who note how cultural norms often override maternal autonomy. For Malay mothers, confinement practices remain central, yet rigid expectations—such as idealized notions of breastfeeding—restricted autonomy and negatively affected mental health. Mental health challenges have historically been under-recognized in Malaysia's healthcare context, despite WHO's (2015) call for psychosocial support in maternal care. The perception of childbirth as primarily physical labor has minimized attention to psychological recovery, particularly in public healthcare institutions. Employment emerged as another critical factor. Many mothers worked in informal or unstable jobs with limited maternity leave and no income protections, forcing them to return to work before fully recovering. One participant resumed work after only 50 days despite severe pain. Employment insecurity compounded health risks, as noted by Khor et al. (2024), who found that financial pressures push mothers to sacrifice recovery. Workplaces were often unsupportive, with respondents highlighting the absence of accommodations for physical limitations. These gaps reveal how labor policies neglect postpartum needs. Nevertheless, a few mothers reported supportive employers who allowed flexible hours or emergency leave, suggesting potential for workplace reform. As Karl et al. (2020) emphasize, institutional compassion and flexibility are vital in preventing maternal burnout. Financial burden further constrained recovery. Many low-income mothers could afford only basic care, unlike higher-income mothers who accessed better nutrition, massages, or confinement services (Franzoi et al., 2024). The cost of childcare essentials also caused stress, pushing some mothers to return to work prematurely (Khor et al., 2024). Financial strain thus significantly impeded recovery during and after the postpartum phase. Compounding this, institutional responsiveness was lacking. Respondents reported limited guidance from healthcare professionals, with care focused more on infant development than maternal recovery (WHO, 2013). Needs such as emotional reassurance, breastfeeding support, and wound care were inadequately addressed, leaving mothers to rely on family or informal knowledge (Nan et al., 2020).

CONCLUSION

This study highlights the challenges faced by B40 working mothers during the postpartum period, including physical and psychological strain, financial limitations, and institutional gaps. These struggles intersect with gender and socioeconomic inequalities, making them not only health issues but also matters of equity, consistent with Sustainable Development Goal 5. The findings emphasize the need to prioritize maternal well-being beyond childbirth to support recovery and long-term care for both mothers and infants. The study is limited by its small, urban-focused sample of five participants, which restricts generalizability. Nonetheless, the findings suggest that postpartum support should be strengthened through comprehensive education, affordable confinement services, and community-based centers offering physical and emotional care. Employers should also provide supportive policies, such as extended maternity leave and flexible work arrangements, to ease the transition back to work.

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LEGAL AND ECONOMIC PERSPECTIVES ON INTERNAL MIGRATION AND REGIONAL DEVELOPMENT IMBALANCE IN MALAYSIA

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ABSTRACT

Internal migration between rural and urban areas has acquired significant demographic importance in both developed and developing countries. The issue of migration can be studied from multiple perspectives: the factors that stimulate migration, the way in which migration affects population change, the compositional differences in migrant streams, the impact of migration on individuals and societies, and the way that areas, origins, and destinations change as a result of migration. Internal migration has long played a critical role in shaping Malaysia's demographic and socio-economic landscape. However, the pattern of rural-to-urban and interstate migration has also deepened regional development imbalances, particularly between Peninsular Malaysia and East Malaysia, and between major urban centers and rural peripheries. Internal migration, particularly from rural to urban areas, has intensified due to unequal economic opportunities, infrastructure disparities, and concentrated development in major cities such as Kuala Lumpur, Selangor, and Penang. This pattern has created significant socio-economic gaps between regions, with urban centres experiencing pressure on services and infrastructure, while rural areas face population decline and talent drain. This paper discusses the implications of internal migration on regional development imbalance in Malaysia. This paper explores the legal and policy frameworks that influence internal migration and assesses their impact on spatial inequality. Drawing from constitutional provisions, planning laws, local government acts, and regional development statutes, the paper critically examines how legal structures may contribute to or mitigate migration-induced disparities. Recommendations are made for a more equitable legal and institutional framework that supports balanced regional development and inclusive internal mobility. The paper proposes policy reforms, including the institutionalisation of a national internal migration framework, targeted investment incentives for less developed regions, and the empowerment of local governments. A balanced regional development strategy is essential to ensure inclusive and sustainable national progress.

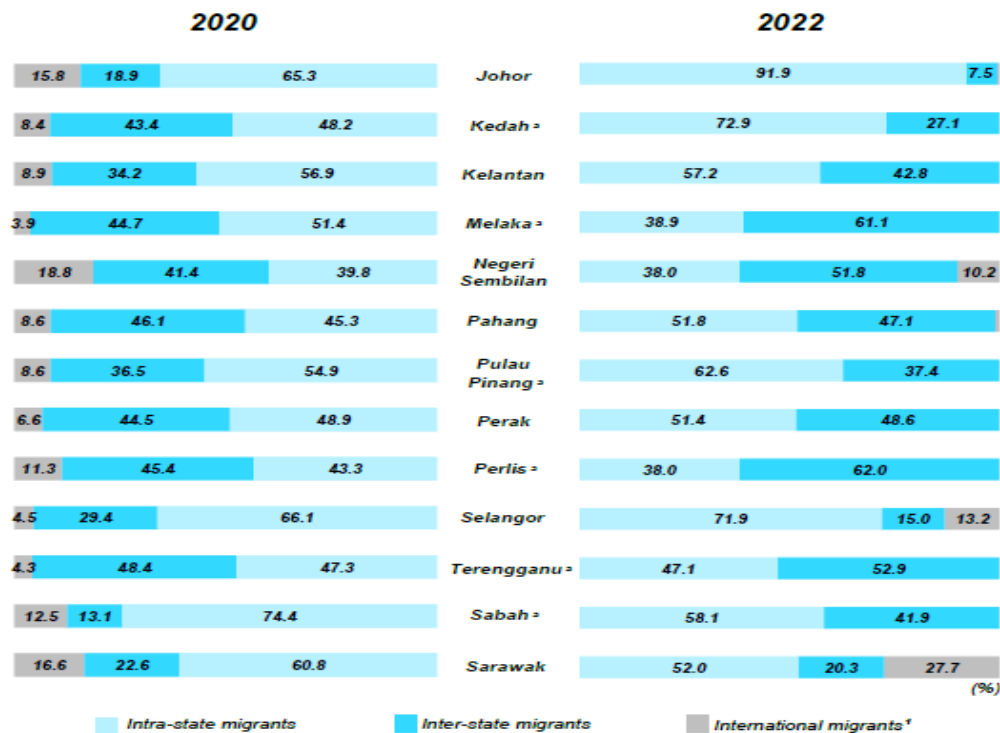
Keywords: Internal Migration, Rural, Urban, Legal, Economic, Imbalance.

INTRODUCTION

Malaysia, a multi-ethnic nation with a land area of 328,000.55 square kilometres (Data 360, 2022), with a population of 34.2 million in 2Q 2025 (OpenDOSM, 2025), has experienced a remarkable socio-economic transformation over the past few decades, largely influenced by rapid industrialisation, urbanisation and internal migration. Since independence, the shift from an agriculture-based economy to one driven by manufacturing and services has spurred large-scale population movements from rural to urban areas, reshaping both demographic and economic landscapes (Leete, 1996). Internal migration has emerged as a central driver of this transformation, particularly through the heavy concentration of migrants in rapidly developing urban centres such as the Klang Valley (Tey, 2012).

While internal migration has generated significant benefits—supporting industrial growth, enhancing human capital development, and accelerating urbanisation—it has also contributed to regional development imbalances. States such as Selangor and Kuala Lumpur continue to register net population gains, while less-developed states like Kelantan, Perlis and Perak experience persistent outflows and slower economic growth (DOSM, 2011a, 2011b & 2022a; Tey, 2012). This uneven redistribution of population intensifies the challenges of regional inequality, as prosperous regions benefit from economies of agglomeration, while lagging regions face rural depopulation, underutilisation of resources and weakened local economies (Voon, 2008).

Figure 1: Percentage of Migrants by State of Destination and Migration Status, Malaysia, 2020 and 2022



Notes:

¹ Exclude migrants from Malaysia to other countries

² Subject to a high RSE and should be used with caution

Data for W.P. Kuala Lumpur, W.P. Labuan and W.P. Putrajaya could not be released due to high RSE values

Source: DOSM (2023, August 17)

In 2022, overall inter-state migration comprised 30.3 per cent of all internal movement and intra-state migration accounted for 62.3 per cent. In 2022, the three states with the greatest intra-state migration percentages were Johor (91.9 per cent), Kedah (72.9 per cent), and Selangor (71.9 per cent). Meanwhile, Perlis and Negeri Sembilan had the lowest intra-state migration rates, at 38.0 per cent respectively. Urban to urban migration remained the largest within the state, accounting for 79.3 per cent of all migrations (2020: 73.0 per cent). This was followed by urban to rural migration (14.7 per cent), rural to urban migration (2.4 per cent) and rural to rural migration (3.6 per cent). The results showed that in 2022, there was an increase in mobility from urban to urban areas in every state (Figure 1).

The problem lies in the dual impact of internal migration: it strengthens national economic hubs but simultaneously exacerbates disparities between regions. Rural areas, particularly in the northern and eastern states of Peninsular Malaysia, suffer from brain drain and loss of productive youth, undermining local development potential (Tey & Lai, 2022). At the same time, rapid population concentration in metropolitan regions strains infrastructure, increases congestion, and widens socio-economic divides. Thus, internal migration in Malaysia is not merely a demographic phenomenon but also a structural issue with profound implications for balanced national development. Addressing these imbalances requires a deeper understanding of migration patterns, their socio-economic drivers, and their consequences for regional development trajectories, so this paper mainly identifies the legal and policy frameworks that influence internal migration on regional development imbalance in Malaysia and assesses their impact on spatial inequality.

INTERNAL MIGRATION TRENDS

In Malaysia, internal migration has a big impact on regional development and brings with it both opportunities and difficulties. Intending to achieve sustainable development through strategic initiatives, the Twelfth Malaysia Plan (RMK12) places a strong emphasis on urban and regional planning to eliminate inequities, especially between Peninsular Malaysia and regions like Sabah and Sarawak (Abdullah et al., 2022). Internal migration may have positive economic effects, but it can also result in sociopolitical disadvantages, including poverty and ethnic conflicts (Ascher & Barter, 2023). It is essential to integrate migrants into host communities since their contributions can boost local economies, yet they frequently experience violence and marginalisation, which makes development more difficult (Nabulsi, 2025; Ascher & Barter, 2023). Additionally, to promote inclusive growth, comprehensive policies that consider the dynamics of both internal and international migration are necessary, as highlighted by the analytical frameworks used to study migration, such as spatial econometrics (Kurekova, 2022; Internal and International Migration and Development: Research and Policy Perspectives, 2022).

Due to several legal and economic considerations, internal migration in Malaysia also has a major impact on regional development disparities. People often migrate to boost their income and improve their skills and education to enhance their human capital (Diana et al., 2020). With considerable concentration in major cities like Kuala Lumpur, where 41 per cent of the population lives in just 2.6 per cent of the land area, the urban population has increased from 28 per cent in 1970 to 75 per cent in 2020 (Peng & Li, 2022). Highly developed areas within the Klang Valley tend to draw skilled professionals into industries like manufacturing and services, whereas the less developed zones are dominated by agriculture, informal work, traditional practices, and low-tech sectors that mainly provide low-skilled employment (Diana et al., 2020). Employment prospects vary significantly across different regions of the country due to disparities in economic conditions, technological advancement, and socio-demographic factors. These differences have resulted in

uneven economic growth, with more developed areas attracting skilled labour from less developed ones.

Economic imbalances between regions drive migration toward the Klang Valley, where income levels tend to be higher. These movements are influenced by push factors like limited job prospects in underdeveloped areas, and pull factors, such as the abundance of opportunities in more prosperous regions like the Klang Valley (Rohana et al., 2020). The more dynamic states not only provide superior job opportunities but also have a greater capacity to absorb and utilise diverse skill sets within the workforce. This creates a cycle where talent is continually cultivated and retained in these regions, further accelerating their development and deepening the gap between them and less developed areas. Given that family, social and economic considerations frequently drive rural-to-urban migration, this urban concentration exacerbates socioeconomic gaps, underscoring the need for focused policies to control these dynamics (Mun et al., 2022). Additionally, regional development initiatives seek to modernise rural areas and lessen income disparities; nevertheless, obstacles still exist, such as the use of low-skilled labour and low female workforce participation, which impede economic progress (Paul, 2022; Cheok & Chen, 2022). Moreover, the migration picture is complicated by the surge of foreign labour, which, although helpful for economic demands, increases security and public health concerns (Anuar & Huda, 2022). In order to achieve balanced regional development in Malaysia, it is imperative that these complex concerns be addressed.

In addition, there are several causes including environmental conditions, social ties and economic opportunities, that have contributed to the considerable evolution of internal migration in Malaysia. Given the environmental effects of urban sprawl and rising consumption, this demographic change presents difficulties for sustainable development (Hossain, 2024). Furthermore, by implementing programs like digital hiring procedures and zero-cost migration agreements, the Malaysian government is moving toward a rights-based migration governance model with the goal of defending migrant rights (Low, 2024). But this situation is complicated by the role of migration intermediaries, who have the potential to both make it easier to find work and maintain socioeconomic disparities (Sha & Khor, 2024). The government has chosen to use a securitisation strategy to handle the security issues brought on by the surge of irregular migrants, especially with reference to refugees (Mahalingam, 2022).

METHODOLOGY

This research adopts a qualitative approach to collect and analyse descriptive data, exploring individuals' attitudes, beliefs, motivations and social realities, which is suitable to achieve the objective of this research (Asper & Cote, 2019). This research adopts a legal doctrinal methodology, which is primarily concerned with the analysis and interpretation of legal texts. It seeks to examine the existing legal framework governing internal migration protections, economic policies and regional development planning and policies in Malaysia. Legal doctrinal research is normative and analytical. It focuses on primary sources such as statutes, case law, constitutional provisions, regulations, and official legal documents, and secondary sources include legal commentaries, journal articles, textbooks, and policy papers that interpret or critique the law. This methodology is particularly suited for evaluating the coherence, consistency, and adequacy of legal rules and principles within a defined jurisdiction.

LEGAL PROTECTION GOVERNING INTERNAL MIGRATION AND REGIONAL DEVELOPMENT

Migration, driven by economic, environmental, and political elements, transforms societies and economies. It occurs on both national and international scales, and it significantly influences the development paths of regions. Migration provides citizens with growth opportunities; nevertheless, it also poses legal and governance challenges. Law significantly influences migration trends via constitutional rules, employment regulations, land planning and development, as well as social protection systems that affect demographic distribution, workforce allocation, and regional equity. Besides, the regional development is deeply intertwined with migration flows, yet legal protections for internal migration remain uneven. Malaysia's legal framework for internal migration is shaped by several legislations, such as the Federal Constitution 1957, Employment Act 1955, Industrial Relations Act 1967, Employees' Social Security Act 1969, Town and Country Planning Act 1976, etc.

CONSTITUTIONAL FOUNDATIONAL

The Federal Constitution of Malaysia, 1957, is the supreme law of the federation, serving as the fundamental legal document that defines the country's government structure. Article 4(1) of the Federal Constitution declares the Constitution to be the supreme law and states that any law passed after Merdeka Day that is "inconsistent with this Constitution" shall be void to the extent of the inconsistency. It establishes citizens' rights and responsibilities and sets principles for governance. Additionally, it outlines the powers and roles of the three branches of government: legislative, executive, and judicial, and protects individuals from abuse of power while promoting societal order based on principles of equality (Shuaib, 2010).

Part II of the Federal Constitution guarantees fundamental human rights because it ensures that all citizens enjoy their fundamental rights. Article 9 of the Federal Constitution protects citizens against banishment and secures freedom of movement within the Federation, subject to permissible restrictions for security, public order, public health, or punishment of offenders. Although Article 9 secures domestic movement for citizens, it does not constitutionalise an absolute right to exit or to a passport; outbound travel is regulated statutorily. With that, citizens can freely move in and out of the country as well as move between states. The right of people to live, to work and to pursue their dreams in the land of their birth is one of the most precious of all rights.

Article 8(1) of the Federal Constitution guarantees equality before the law for "all persons," a formulation that encompasses both citizens and non-citizens. In contrast, Article 8(2) outlines enumerated grounds of non-discrimination against citizens on the grounds only of religion, race, descent, place of birth or gender in any law or in the appointment to any office or employment under public authority or in the administration of any law. The rule of law means that everyone is equally under the law. In practice, the equality clause forms a constitutional backstop for administrative migration measures and labour protections affecting migrants. In the case of *PP v Khong Teng Khen* [1976] 2 MLJ 166, the Court said that a law must operate alike on all persons under like circumstances. Thus, a law is not required to operate on all people in any circumstances, and a law is also not required to be general in character and universal in application (Amin & Afandi, 2023).

Despite the basic human rights, the Federal Constitution has provided for separate executive, legislative, and judicial branches at both the federal and state levels. It is known as federalism, a

method of dividing power between two or more levels of government: the federal, state, and local governments. Burris (2015) defines federalism as a system of organisation and power distribution between a central government and a smaller regional government. Article 76 (4) of the federal government may enact a general law to standardise implementation at the state level, such as land matters and land planning, which are subject to the discretion of the state government through the National Land Code 1965. Some general issues are regulated at the federal level, such as the maximum tenure of land leases and the types of titles issued for land registration (Wan Yusof et al., 2022).

The federal parliament may make laws to promote uniformity of the laws of two or more states, and it may legislate on any subject at the request of a state legislative assembly. The Federal Constitution provides for a strong federal government with substantial control over economic planning, taxation, and internal security, whereas states have limited autonomy, especially in fiscal matters (Md Khalid & Jalil, 2018). The financial provisions, however, remain centralised, with the majority of the income going to the federal fund (Md Khalid & Jalil, 2018). The federal government also has more legislative power over States and may legislate on state matters under several circumstances (Md Khalid & Jalil, 2018). Urbanisation is largely a federal concern; land use and housing remain under state jurisdiction, and this disjuncture leads to fragmented responses to internal migration and hampers balanced regional development (Md Khalid & Jalil, 2018; Wan Yusof et al., 2022).

The Federal-State division of powers (Ninth Schedule) significantly affects regional development planning and resource allocation. Article 75 stated that if any state law is inconsistent with a federal law, the federal law shall prevail and the State law shall, to the extent of the inconsistency, be void. Article 76A (1) declared that the power of Parliament to make laws with respect to a matter enumerated in the Federal List, while Article 76A (2) stated a state law made under authority conferred by an Act of Parliament as mentioned in Clause (1). Besides, Article 76A (3) stated that any matter with respect to which the Legislature of a State is authorised by an Act of Parliament to make laws for the matters enumerated in the Concurrent List. This division often creates challenges in coordinating migration-related policies with regional development strategies. However, the practical realisation of this right is mediated by state-level laws, development policies, and administrative capacities.

EMPLOYMENT PROTECTIONS FOR INTERNAL MIGRATION

Every morning, thousands of workers cross district lines in Malaysia, leaving behind rural homes for urban construction sites, factories, and service counters. Their journeys are not marked by passports or border checks, yet they navigate a complex terrain of opportunity and vulnerability. Internal migration, often overshadowed by international flows, is quietly reshaping Malaysia's cities, labour markets, and regional development. One of the most critical yet underexplored dimensions of this phenomenon is the role of labour law in mediating the experiences of internal migrants. Legal frameworks governing employment, housing, and workplace safety not only shape the conditions under which migrants work and live but also influence broader patterns of regional inequality and development.

The main legislation of labour is the Employment Act 1955 and the Industrial Relations Act 1967, the subsidiary legislation such as the Occupational Safety and Health Act 1994, Employment Provident Fund Act 1991, Employees' Social Security Act 1969, Employment Insurance System Act 1991 and Employees' Minimum Standards of Housing, Accommodations and Amenities Act 1990. These labour regulations promote worker mobility by standardising employment conditions

across the country. However, the absence of regional wage differentiation or housing support policies fails to account for cost-of-living differences, inadvertently promoting centralisation.

The Employment Act 1955 primarily addresses the minimum terms and conditions of employment for a certain category of workers, and it includes provisions for working hours, overtime, leave entitlements, public holidays, termination, and maternity benefits. A contract governing the relationship between an employer and an employee can be divided into two categories, namely: contract of service and contract for service. Section 2 of the Employment Act 1955 stated that “any agreement, whether oral or in writing and whether express or implied, whereby one person agrees to employ another as an employee and that other agrees to serve his employer as an employee and includes an apprenticeship contract”. A service contract, also known as a contract for independent work, is an arrangement in which one party engages the services of the other as an independent contractor rather than a permanent employee (Abd Razak & Abdul Shukor, 2025). Thus, the employment contract is a foundation for industrial relations as it grants fundamental rights to both employer and employee. The contract between an employer and an employee is according to the terms and conditions stipulated by law, where the employee performs the action as agreed (Hamid et al., 2018; Abdul Shukor & Ghazali, 2025). The Malaysian government has just announced that the minimum wage of a worker will be increased to RM1,700 per month from 1 February 2025 been announced by the government (Bernama, 2024a). The purpose of the increment in wages is to raise the living standards of low-income workers in Malaysia and create a fairer labour market (Bernama, 2024a). With the higher wages, the workers' purchasing power also increases, and possibly higher domestic consumption, which promotes economic growth (Bernama, 2024b).

The Industrial Relations Act 1967 governs the resolution of employment disputes and the regulation of trade unions. This Act plays a pivotal role in maintaining harmonious industrial relations, providing mechanisms for conciliation and arbitration of labour disputes. It also maintains a good relationship and fair dealings between employers, workers, and their trade union, as well as providing for specific remedies that are not available in common law or the Employment Act 1955. The Employees' Minimum Standards of Housing, Accommodations and Amenities Act 1990 mandates employers to provide adequate housing and amenities for workers, including internal migrants in sectors like construction and plantations. The amendments aimed to ensure compliance with international standards for developing countries, while promoting sustainable economic growth and attracting foreign investment (Low, 2021). With that, the worker accommodations had to fulfil basic aspects: a minimum space requirement, basic facilities, safety, comfort, and cleanliness standards (Low, 2021). It has significantly reshaped municipal coordination, licensing, and inspection of development with direct implications for local governments in growth corridors and industrial estates.

According to Abdul Rashid & Mokhtar's (2023) study, migrants from less developed states go to more developed states in pursuit of economic possibilities. Due to the increased demand for urban spaces and services brought on by Malaysia's fast urbanisation, internal migration patterns are impacted, and more people are moving into urban regions. With that, low-income interstate migrants are largely concentrated in the unorganised sector, which comprises the overwhelming majority of the workforce. The recent amendments in 2022 to the Employment (Amendments) Act 2022 expanded protections to contract workers and increased penalties for non-compliance with housing standards. It also introduces flexible work arrangements and anti-discrimination clauses aimed at improving inclusivity and labour mobility.

The Occupational Safety and Health Act 1994 mainly emphasises the employee's well-being and ensures that employers take precautionary steps to protect employees. It focuses on ensuring safe working conditions, better protection for employees from danger and prevents any fear of

repercussion for employees to exercise such rights (Abdul Shukor & Ghazali, 2025). Section 15 of the OSHA 1994 requires employers to guarantee their employees' health, safety, and well-being at work. The Occupational Safety and Health Act 1994 also mandates employers to ensure that their employees' job activities are free of hazards and risks and to provide corrective actions (Abdul Shukor & Ghazali, 2025). It aims to promote safety and health awareness and establish effective safety organisation and performance through self-regulation schemes designed to suit the particular industry or organisation.

Social security is a fundamental human right under the Universal Declaration of Human Rights 1948 and the International Covenant on Economic, Social and Cultural Rights 1966. In Malaysia, the Employment Social Security Act 1969 is the main legislation that gives social security protection to workers, which comprises a comprehensive framework for social security protection for employees in various contingencies such as sickness, maternity, disability, and death. Social security helps reduce poverty and inequality by giving financial support to vulnerable populations, including the elderly, disabled, and low-income families (Abd Razak & Abdul Shukor, 2025). Benefits such as maternity leave and child allowances enhance a person's overall well-being and ensuring workers have affordable access to medical care is vital for sustaining their health (Abd Razak & Abdul Shukor, 2025). The protection covers all types of workers under a contract of service. It also aims to ensure equality between local and foreign workers in terms of living conditions and employment injury coverage (Low, 2021). The rapid execution of the modified regulations has focused employers' accountability in ensuring the welfare of migrant workers.

LAND PLANNING FOR REGIONAL DEVELOPMENT

Land planning is a foundational tool for shaping regional development, balancing economic growth with environmental sustainability and social equity. Regional development is increasingly recognised as a spatially driven process, where land use decisions determine the trajectory of economic, social, and environmental outcomes (Sarkawi & Abdullah, 2014; Maidin & Sulaiman, 2017; Maidin & Ali, 2009). In Malaysia, land planning serves as a critical mechanism for coordinating infrastructure, housing, industry, and conservation efforts across diverse territories. Land planning refers to the strategic allocation and regulation of land resources to achieve desired development outcomes. It encompasses zoning, land use regulation, environmental assessment, and spatial design (Sarkawi & Abdullah, 2014; Maidin & Sulaiman, 2017; Maidin & Ali, 2009).

The Town and Country Planning Act 1976 was enacted for the purpose of planning and controlling current and future development and granting substantial planning authority to local governments. The Act confers on the local authority the powers to control land use planning, control, and conservation of all lands and buildings within their local authority area (Sarkawi & Abdullah, 2014; Maidin & Sulaiman, 2017; Maidin & Ali, 2009). The local planning authority can perform all other functions that are supplemental, incidental, or consequential to any of its specified functions and do all such things as may be necessary or expedient for carrying out its planning functions under the Town and Country Planning Act 1974. Land matters fall under state jurisdiction (Federal Constitution, Ninth Schedule), but federal development projects often override state planning concerns. This results in uneven infrastructure investment, particularly in Peninsular vs. East Malaysia. However, the unequal capacity of local authorities and centralised federal control over development grants limit effective decentralisation. Consequently, urban centres receive disproportionate attention and investment, reinforcing migratory pull factors (Sarkawi & Abdullah, 2014; Maidin & Sulaiman, 2017; Maidin & Ali, 2009). The legislation allows the local authorities to assume developmental functions in the field of urban management

and play a more dynamic role in national development. The major functions of local authorities can be summarised as environmental, public, social and developmental.

There are regional disparities in labour law enforcement, especially between urban centres and rural areas. The internal migrants have limited awareness of the protection and rights. The informal employment remains widespread, with many workers excluded from formal protections and social security schemes. The strong employment protections can enhance productivity, reduce exploitation, and promote social stability. The weak enforcement undermines trust in institutions and perpetuates regional inequality. It is important to have legal harmonisation across states, as it is essential to ensure consistent standards and equitable development outcomes.

ECONOMIC POLICIES AND REGIONAL DISPARITIES

Malaysia's experience with internal migration and regional development imbalance offers a compelling case study of how economic policies, historical legacies and spatial inequalities interact within a rapidly developing multi-ethnic nation. Since independence, the Malaysian government has pursued various regional development strategies to address persistent disparities between the more developed western states and the lagging northern, eastern and Bornean regions. Initial post-colonial policies under the First and Second Malaysia Plans (1956–1970) were largely *a-spatial*, focusing on rural development and infrastructure without explicit regional targeting, though budgetary allocations subtly favoured agricultural and utility investments that indirectly supported urban centres (Hutchinson, 2015).

The introduction of the New Economic Policy (NEP) in 1971 marked a significant shift towards explicit regional intervention, aiming to eradicate poverty and restructure society ethnically and spatially. This period saw the adoption of the *Donor-Recipient Model*, characterised by top-down investments in land development schemes (e.g., FELDA, FELCRA), industrial dispersal and the establishment of Regional Development Authorities (RDAs) to promote growth poles in less developed regions (Ngah, 2012; Mohamed Aslam & Hassan, 2000). However, these efforts yielded mixed results: while poverty rates declined nationally, regional income disparities persisted and industrial dispersal policies often failed to generate meaningful local linkages or sustainable urbanisation (Ngah, 2012; Hutchinson, 2015).

The former prime minister, Tun Mahathir's era (1981–2005) further centralised development planning, prioritising mega-projects in the Klang Valley and enhancing urban infrastructure, which accelerated rural-urban migration and exacerbated spatial concentration (Tey et al., 2019). By the post-Tun Mahathir period, policy evolved towards the *Growth-Oriented Model*, emphasising economic corridors (e.g., Iskandar Malaysia, ECER, NCER) and urban agglomerations to harness agglomeration economies and private investment (Hutchinson, 2015; Government of Malaysia, 2008). Despite these initiatives, regional inequalities endure, with GDP per capita disparities between states like Selangor and Kelantan widening over time, and urban primacy intensifying—Greater Kuala Lumpur now hosts over 25 per cent of the national population (Tey et al., 2019; DOSM, 2020). The persistence of these imbalances underscores the tension between market-led growth strategies and the need for equitable regional development, particularly in a governance context marked by fiscal centralisation and limited subnational autonomy. Future policies must therefore balance efficiency gains from urban concentration with inclusive rural development and enhanced inter-regional connectivity to mitigate the adverse effects of internal migration and promote sustainable regional equilibrium.

CONCLUSION

Malaysia is currently positioned at a critical juncture in its development trajectory. While the prevailing centralised, policy-oriented governance model has facilitated rapid urbanisation and economic expansion, it has simultaneously exacerbated spatial inequalities across regions. In the absence of substantive legal reform, there is a significant risk that existing disparities will become entrenched, placing unsustainable pressure on urban centres and marginalising peripheral areas from mainstream economic activity.

To foster long-term national cohesion, a transition towards a statutory and constitutional framework is imperative—one that prioritises equalisation, decentralisation, the integration of migration with development planning, and institutional transparency. International comparative evidence underscores that enduring solutions to regional imbalances are most effectively achieved through binding legal mandates rather than through discretionary policy instruments.

Malaysia's continued prosperity will depend on its capacity to restructure its migration and regional development governance from a fragmented, policy-driven approach into a legally codified, integrated, and equitable system. The reform agenda proposed herein offers a strategic pathway for such a transformation. If implemented, it holds the potential to advance not only economic growth but also a more balanced, inclusive, and sustainable model of national development.

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**CORAK KEHIDUPAN DAN TAHAP KECENDERUNGAN DEMENSIA DALAM
KALANGAN WARGA EMAS: PERSEDIAAN MENGHADAPI NEGARA TUA 2030**

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ABSTRAK

Demensia bukanlah sebahagian daripada proses penuaan normal, sebaliknya berpunca daripada kerosakan otak yang disebabkan oleh pelbagai penyakit atau kecederaan. Tanpa pengurusan yang berkesan, demensia berpotensi memberi kesan serius kepada negara dari segi ekonomi, sosial, kesihatan awam, dan kesejahteraan masyarakat. Sehubungan itu, kajian ini dijalankan untuk memahami corak kehidupan warga emas dengan dan tanpa demensia, serta menilai tahap kecenderungan mereka terhadap penyakit ini menggunakan skor *Clinical Dementia Rating* (CDR) sebagai persediaan menghadapi status Negara Tua 2030. Kajian dilaksanakan di zon utara Malaysia, meliputi negeri Perlis, Kedah, Pulau Pinang dan Perak Utara, melibatkan pengumpulan

data daripada 400 responden melalui edaran borang soal selidik melibatkan pengajaan warga emas di pusat jagaan dan penjagaan rumah. Dapatan kajian diharapkan dapat memberikan gambaran jelas tentang faktor-faktor yang mempengaruhi kemunculan demensia, perbezaan gaya hidup antara kumpulan, dan tahap risiko yang dihadapi. Hasil kajian ini juga dijangka menjadi asas kepada perancangan intervensi awal, pembangunan strategi pencegahan, serta penyediaan polisi kesihatan awam yang lebih bersasar bagi menghadapi cabaran Negara Tua 2030.

Kata Kunci: Demensia, Penuaan, Warga Emas, Negara Tua, Gaya Hidup.

PENGENALAN

Malaysia dijangka menjadi negara tua pada tahun 2030 (Amri, 2023) dan dalam masa yang sama dunia dijangka mencapai peningkatan warga emas dengan demensia melebihi 312% menjelang tahun 2050 (Arumugam, 2022). Berdasarkan definisi yang dikeluarkan oleh *United Nations World Assembly on Ageing*, warga emas merujuk kepada individu yang berumur 60 tahun ke atas (Persatuan Bangsa-Bangsa Bersatu, 1982; Kementerian Pembangunan Wanita, Keluarga dan Masyarakat, 2011; Alavi & Mahbob, 2017) dan selaras dengan matlamat Dasar Warga Emas Negara (DWEN) 2011 dengan memberi perhatian khusus kepada warga emas dari segi kesejahteraan, kesihatan dan sokongan sosial (Kementerian Pembangunan Wanita, Keluarga dan Masyarakat, 2011). Justeru itu, sejauh manakah tahap kesiapsiagaan Malaysia dalam menghadapi masalah ini? Adakah negara sudah bersedia? Menurut Pakar Perubatan Geriatrik, Dr. Siti Nurbaya Mohd Nawawi, demensia ini bukan saja disebabkan oleh faktor genetik, namun ia turut didorong oleh penyakit seperti darah tinggi, diabetes dan kolesterol yang tinggi (Azmi, 2024; Mirza, 2022). Selain itu, merokok dan trauma otak kesan daripada kemalangan dan bersukan juga boleh menjadi penyebab kepada demensia (Mirza, 2022).

Masalah demensia ini bukanlah suatu perkara yang baru, namun sekiranya ia tidak dikawal, sedikit sebanyak ianya akan menjejaskan tahap kesihatan penduduk dan seterusnya memberi kesan kepada peningkatan kos rawatan demensia. Menurut Pertubuhan Kesihatan Sedunia (WHO), pada tahun 2017, kos anggaran keseluruhan kos rawatan penyakit demensia diseluruh dunia adalah \$818 bilion dolar dan dijangka meningkat dua kali ganda, menjadi \$2 trilion dolar menjelang tahun 2030 (The Malaysian Insight, 2017). Walaupun demensia ini kerap berlaku, namun ianya bukanlah satu proses normal kepada golongan warga emas (Mirza, 2022). Justeru itu, masalah demensia ini perlu diberi perhatian yang serius bagi memastikan tahap kesihatan warga emas negara berada dalam keadaan yang baik.

Demensia ditakrifkan sebagai satu sindrom yang melibatkan penurunan progresif dalam fungsi kognitif seseorang termasuk daya ingatan, pemikiran, orientasi, kefahaman, pengiraan, keupayaan belajar dan pertimbangan (Pertubuhan Kesihatan Sedunia, WHO (2025)). Ianya bukanlah sebahagian daripada proses penuaan yang normal, tetapi lebih kepada akibat kerosakan otak yang berpunca daripada pelbagai penyakit atau kecederaan. Jika masalah demensia ini tidak dikawal, ia boleh mendatangkan kesan serius kepada negara dari segi ekonomi, sosial, kesihatan awam dan kesejahteraan masyarakat. Walaupun demensia ini tiada penawar, namun rawatan awal boleh membantu memperlambatkan perkembangan simptom ini.

Sehubungan dengan itu, kajian ini amat penting untuk dijalankan kerana masalah demensia ini bukan sahaja mendatangkan keimbangan kepada negara, malah ia secara tidak langsung akan memberi keimbangan kepada ahli keluarga serta tekanan kepada penjaga. Objektif utama kajian ini adalah untuk memahami corak kehidupan warga emas dengan dan tanpa demensia, serta

menilai tahap kecenderungan mereka terhadap penyakit ini menggunakan skor *Clinical Dementia Rating* (CDR) sebagai persediaan menghadapi status Negara Tua 2030. Kajian CDR ini penting kerana ianya dapat membantu dalam pengesanan awal pesakit demensia. Kajian ini juga adalah selaras dengan objektif dasar Dasar Warga Emas Negara (DWEN) iaitu membangunkan masyarakat prihatin terhadap fenomena penuaan dan mendayaupayakan masyarakat bagi menghadapi hari tua, memudahkan akses pembelajaran sepanjang hayat dalam kalangan warga emas, keluarga dan masyarakat serta menjamin warga emas hidup selamat dan dilindungi (Kementerian Pembangunan Wanita, Keluarga dan Masyarakat, 2011).

KAJIAN LITERATUR

Terdapat beberapa kajian lepas yang telah dijalankan di Malaysia berkaitan dengan demensia (Mukahar et al., 2017; Sharif et al., 2023; Suluraju dan Sazlina, 2023; Rashid et al., 2024). Berdasarkan dapatan kajian Sharif et al. (2023), terdapat hubungan negatif antara tahap kebimbangan dan kemurungan dengan kualiti hidup dalam kalangan warga emas yang menghidap demensia. Ini menunjukkan bahawa warga emas yang menghidap demensia berada dalam keadaan yang tidak stabil sehingga menyebabkan mereka tidak lagi berada dalam keadaan bimbang dan kemurungan. Sementara itu, kajian yang dijalankan oleh Rashid et al. (2024) mendapati bahawa penjaga perlu mempunyai pengetahuan tentang demensia serta mampu memberi sokongan dan perkhidmatan kepada pesakit dibawah jagaan mereka. Ini kerana pesakit demensia memerlukan penjagaan yang rapi agar keselamatan, kesihatan, pemakanan, emosi dan perilaku mereka terjaga.

Kajian yang dijalankan oleh Mukahar et al. (2017) pula mendapati bukan sahaja pesakit demensia, malah penjaga juga turut memerlukan sokongan keluarga dan sokongan masyarakat bagi membolehkan mereka mengurangkan tekanan dalam penjagaan. Dari aspek pengesanan demensia di peringkat awal, kajian yang dijalankan oleh Suluraju dan Sazlina (2023) mendapati hanya 11% ujian pengesanan awal yang dilakukan oleh doktor perubatan (primer). Antara faktor yang mengekang ujian pengesanan awal ini dijalankan adalah disebabkan oleh masalah kekurangan masa dan kurang pengetahuan. Disebabkan kekangan ini, kebanyakan warga emas yang menghidap masalah demensia tidak dapat dikesan dari peringkat awal.

Menurut Salleh et al. (2022), warga emas lazimnya mengalami kemerosotan dari segi keupayaan fizikal yang menyebabkan mereka menghadapi pelbagai kesukaran dalam menjalani kehidupan seharian. Antara cabaran utama termasuklah kesukaran untuk menjaga kebersihan diri, menyediakan makanan, bergerak secara bebas, serta mengurus keperluan perubatan mereka sendiri. Keterbatasan fizikal ini bukan sahaja menjejaskan kualiti hidup, malah turut memberi kesan kepada kesejahteraan emosi dan psikologi warga emas. Dalam hal ini, Jing dan Noor (2022) menekankan bahawa bagi memastikan warga emas tidak terjerumus dalam masalah kemurungan atau mengalami tekanan emosi yang berpunca daripada keuzuran dan kesunyian, mereka perlu kekal aktif dalam kehidupan seharian. Aktiviti fizikal yang ringan serta penglibatan dalam program sosial atau komuniti mampu memberikan kesan positif terhadap kesihatan mental dan emosi warga emas, sekaligus membantu mengekalkan tahap fungsi kognitif dan fizikal mereka.

Sementara itu, Jaafar et al. (2021) pula menyatakan bahawa sokongan berterusan daripada ahli keluarga dan masyarakat secara menyeluruh amat penting dalam memastikan warga emas tidak berasa terpinggir, walaupun mereka telah ditempatkan di pusat jagaan khas. Hubungan yang rapat dan interaksi sosial yang konsisten antara warga emas dengan orang tersayang dapat mengurangkan perasaan kesepian dan meningkatkan rasa dihargai, sekali gus memperkukuh kesejahteraan emosi mereka. Sokongan emosi daripada keluarga serta penglibatan aktif dalam

aktiviti sosial pula dikaitkan dengan kesihatan mental yang lebih baik, persepsi diri yang lebih positif, dan keupayaan menghadapi tekanan dengan lebih berkesan (Wu et al., 2025; Patterson & Margolis, 2023; Abaei & Martin, 2024).

Dalam konteks ini, Mustaffa et al. (2024) menambah bahawa amalan kerohanian serta penglibatan dalam aktiviti keagamaan dan interaksi sosial merupakan elemen penting yang menyumbang secara signifikan terhadap kesejahteraan holistik warga emas. Amalan seperti solat berjemaah, bacaan doa, serta perbincangan spiritual bukan sahaja memberi ketenangan jiwa, malah turut meningkatkan semangat dan motivasi untuk terus menjalani kehidupan dengan lebih bermakna (Coelho-Júnior et al., 2022).

METODOLOGI

Kajian ini dijalankan di zon utara semenanjung Malaysia, merangkumi negeri Perlis, Kedah, Pulau Pinang dan Perak utara. Borang soal selidik telah diedarkan kepada 400 orang warga emas dan persampelan yang digunakan dalam kajian ini adalah persampelan bertujuan, iaitu melibatkan penjagaan di pusat jagaan dan jagaan dirumah. Anggaran jumlah keseluruhan warga emas tahun 2024 yang berumur 60 tahun ke atas di zon utara mengikut Laporan *Myageing Dashboard* (2025) adalah sebanyak 578,400 orang (Perak utara, 97,700 orang; Pulau Pinang, 228,700 orang; Kedah, 215,700 orang; Perlis, 36,500 orang). Justeru itu, sasaran bilangan responden bagi kajian ini adalah seramai 400 orang warga emas.

Penentuan bilangan saiz sampel dibuat dengan mengambil kira pandangan pakar seperti Krejcie dan Morgan (1970) dan Cohen et al. (2001) serta menggunakan kalkulator *Raosoftware* (2023). Menurut Krejcie dan Morgan (1970), jumlah populasi yang paling sesuai dilaksanakan bagi populasi melebihi 100,000 adalah sebanyak 384. Bagi Cohen et al. (2001) pula, saiz persampelan dengan nilai ralat persampelan 1% yang sesuai bagi saiz populasi melebihi 1,000,000 adalah sebanyak 9,760 orang. Namun, dengan mengambil kira kajian ini dijalankan dalam tempoh yang pendek, maka penyelidik mengambil kira nilai ralat persampelan 5% dengan kebolehpercayaan sebanyak 95% dan saiz sampel yang disarankan oleh Cohen et al. (2001) adalah sebanyak 384. Manakala berdasarkan kalkulator *Raosoftware* (2023), saiz sampel yang dicadangkan dengan ralat persampelan 5% adalah sebanyak 385 orang. Justeru itu, dengan mengambil kira kekangan masa kajian dan ralat persampelan yang sesuai, maka jumlah responden yang dipilih dalam kajian ini adalah sebanyak 400 orang.

Jadual 1: Responden Persampelan Kajian

No.	Negeri	Jumlah Populasi warga emas tahun 2024 (orang)	Cadangan Bilangan Responden (orang)
1	Perlis	36,500	100
2	Kedah	215,700	100
3	Pulau Pinang	228,500	100
4	Perak Utara	97,700	100
	Jumlah	578,400	400

Kaedah analisis kajian ini adalah berbentuk deskriptif dan bagi mengenalpasti tahap demensia yang dihadapi oleh pesakit, maka soalan Penilaian Demensia Klinikal (CDR) diberikan. Soalan CDR yang dibentuk merangkumi 6 domain utama iaitu ingatan, orientasi, penghakiman dan penyelesaian, aktiviti komuniti, rumah tangga dan hobi serta penjagaan diri. Sekiranya skor CDR adalah 0, maka responden tiada demensia. Sekiranya skor CDR=0.5, ianya sangat ringan (boleh

menjadi tanda-tanda awal demensia), CDR=1, demensia ringan, CDR=2, demensia sederhana dan CDR=3 dikategorikan sebagai demensia teruk. Pembentukan soalan borang soal selidik berkaitan dengan CDR ini diperoleh daripada Adnand et al. (2021), Clarke et al. (2020) dan Kaiser Permanente (2025). Berikut merupakan pola skor bagi menentukan level pesakit demensia ini.

Jadual 2: Skor Penilaian Demensia Klinikal (CDR)

Skala	≥ 3 domain sama atau lebih	Makna	Skor CDR
1 Tidak Pernah	Semua soalan skor 1	Tiada simptom	0
2 Jarang	≥ 3 domain mempunyai skor 2	Sangat ringan	0.5
3 Sekali Sekala	≥ 3 domain mempunyai skor 3	Ringan	1
4 Kerap	≥ 3 mempunyai skor 4	Sederhana	2
5 Sangat Kerap	≥ 3 mempunyai skor 5	Teruk	3

Ujian kebolehppercayaan menggunakan pekali *Cronbach Alpha* telah dijalankan bagi menentukan tahap konsistensi dalaman bagi setiap pemboleh ubah dalam kajian ini. Secara keseluruhannya, nilai Cronbach Alpha bagi domain CDR yang diperoleh berada dalam julat 0.595 hingga 0.887, yang menunjukkan tahap kebolehppercayaan yang berbeza mengikut konstruk yang dinilai. Bagi pemboleh ubah domain ingatan, nilai Cronbach Alpha yang diperoleh ialah 0.738, manakala bagi domain-domain lain, nilai yang dicatatkan ialah 0.740 (orientasi), 0.595 (penghakiman dan penyelesaian), 0.887 (aktiviti komuniti), 0.780 (rumah tangga dan hobi), dan 0.811 (penjagaan diri). Nilai ini menunjukkan bahawa sebahagian konstruk berada pada tahap kebolehppercayaan sederhana, namun masih boleh diterima untuk kajian eksploratori kerana melebihi nilai minimum 0.5 yang sering digunakan dalam penyelidikan sosial.

DAPATAN KAJIAN DAN PERBINCANGAN

Sebanyak 328 responden telah menjawab borang soal selidik yang telah diedarkan. Jadual 3 menunjukkan ringkasan deskriptif bagi ciri-ciri demografi responden yang terlibat dalam kajian ini. Berdasarkan dapatan, purata umur responden ialah 63.15 tahun dengan sisihan piawai 4.997, menunjukkan bahawa majoriti responden berada dalam lingkungan umur awal 60-an. Dari segi jantina, nilai min 1.67 menunjukkan bahawa sebahagian besar responden ialah perempuan, selaras dengan trend populasi warga emas di Malaysia yang menunjukkan jangka hayat wanita lebih panjang berbanding lelaki. Bagi status perkahwinan, nilai min 2.36 menunjukkan bahawa kebanyakan responden terdiri daripada duda atau balu, manakala sebahagian kecil masih berkahwin atau bercerai. Dapatan ini mencerminkan realiti sosial warga emas yang cenderung tinggal bersendirian atau kehilangan pasangan hidup pada usia lanjut.

Sementara itu, nilai min 1.79 bagi tempat tinggal menunjukkan bahawa majoriti responden tinggal bersama keluarga, manakala sebahagian kecil tinggal sendirian atau di pusat jagaan warga emas. Ini menggambarkan masih wujud sokongan kekeluargaan yang kukuh terhadap warga emas dalam komuniti setempat. Bagi lokasi tempat tinggal, nilai min 1.21 menunjukkan bahawa kebanyakan responden tinggal di kawasan bandar, manakala selebihnya di kawasan luar bandar. Dapatan ini penting untuk memahami akses kepada kemudahan kesihatan dan perkhidmatan sokongan yang mungkin berbeza antara kawasan bandar dan luar bandar. Secara keseluruhannya, profil demografi responden dalam kajian ini menunjukkan bahawa kumpulan warga emas yang dikaji terdiri daripada individu berumur awal 60-an, majoritinya wanita, tinggal bersama keluarga, serta menetap di kawasan bandar.

Jadual 3: Demografi Responden

Perkara	Minimum	Maksimum	Mean	Sisihan Piawai
Jantina	1.00	2.00	1.6701	0.47067
Umur	50	71	63.15	4.997
Status Perkahwinan	2.00	5.00	2.3598	0.68525
Tempat tinggal	1.00	3.00	1.7896	0.58127
Lokasi	1.00	2.00	1.2102	0.40809

Nota: Jantina 1 = Lelaki, 2 = Perempuan; Status perkahwinan 1 = Berkahwin, 2 = Duda/Balu, 3 = Berceraai; Tempat Tinggal 1 = Sendirian, 2 = Bersama keluarga, 3 = Pusat jagaan warga emas; Lokasi 1 = Bandar, 2 = Luar Bandar.

Seterusnya, Jadual 4 menunjukkan taburan responden berdasarkan sejarah perubatan dan gaya hidup. Dapatan menunjukkan bahawa hanya 17 orang responden (5.2%) dikenal pasti sebagai pesakit demensia yang telah disahkan oleh pakar, manakala majoriti 311 orang (94.8%) tidak mempunyai diagnosis demensia secara rasmi. Ini menunjukkan bahawa kebanyakan responden masih berada pada peringkat pra-klinikal atau berisiko awal terhadap gangguan kognitif. Dari segi tabiat merokok, hanya 8 orang responden (2.4%) dilaporkan merokok, manakala 320 orang (97.6%) tidak merokok. Keputusan ini menunjukkan bahawa merokok bukan merupakan faktor dominan dalam kalangan warga emas yang terlibat dalam kajian ini, walaupun ia masih dianggap sebagai faktor risiko terhadap kesihatan kardiovaskular dan fungsi kognitif.

Bagi sejarah perubatan lepas, keputusan menunjukkan peratusan yang agak tinggi bagi beberapa penyakit kronik utama. Seramai 156 orang responden (47.6%) dilaporkan mempunyai darah tinggi, manakala 172 orang (52.4%) tidak. Selain itu, 103 orang (31.4%) mempunyai penyakit kencing manis, dan 169 orang (51.5%) mempunyai paras kolesterol tinggi. Keadaan ini menunjukkan bahawa hampir separuh daripada warga emas yang dikaji menghadapi faktor risiko metabolik yang boleh menyumbang kepada kemerosotan fungsi kognitif dan risiko demensia. Sementara itu, 25 orang responden (7.6%) dilaporkan mempunyai hipotiroid, manakala 13 orang (4.0%) pernah mengalami strok, dan 24 orang (7.3%) menghidap penyakit jantung. Walaupun peratusan bagi ketiga-tiga penyakit ini adalah lebih rendah, kesemuanya merupakan faktor klinikal penting yang berkait rapat dengan risiko demensia vaskular dan penurunan fungsi kognitif. Secara keseluruhannya, dapatan dalam jadual ini menunjukkan bahawa sebahagian besar responden mempunyai sejarah penyakit kronik yang berkait dengan risiko demensia, terutama darah tinggi, kolesterol tinggi, dan kencing manis. Oleh itu, penemuan ini menekankan kepentingan pengurusan penyakit kronik dan gaya hidup sihat dalam kalangan warga emas bagi mengurangkan potensi perkembangan gejala demensia pada peringkat usia lanjut.

Jadual 4: Sejarah Perubatan dan Gaya Hidup

Perkara		Frekuensi	Peratus (%)
Pesakit Demensia	Ya	17	5.2
	Tidak	311	94.8
Adakah anda merokok	Ya	8	2.4
	Tidak	320	97.6
Sejarah perubatan lepas	Darah tinggi	Ya	47.6
		Tidak	52.4
	Kencing manis	Ya	31.4
		Tidak	68.6
	Hipotiroid	Ya	7.6
		Tidak	92.4

	Kolestrol	Ya	169	51.5
		Tidak	159	48.5
	Strok	Ya	13	4.0
		Tidak	315	96
	Sakit jantung	Ya	24	7.3
		Tidak	304	92.7

Jadual 5 pula menunjukkan dapatan bagi CDR yang menilai enam domain utama fungsi kognitif dan keupayaan harian responden, iaitu ingatan, orientasi, penghakiman dan penyelesaian masalah, aktiviti komuniti, rumah tangga dan hobi, serta penjagaan diri. Berdasarkan jadual, domain ingatan menunjukkan majoriti responden berada pada tahap tidak pernah (112 orang) dan jarang (98 orang) mengalami gangguan, diikuti oleh sekali-sekala (89 orang). Hanya sebilangan kecil responden melaporkan gangguan yang berlaku kerap (13 orang) dan sangat kerap (16 orang). Ini menunjukkan bahawa sebahagian besar warga emas dalam kajian masih memiliki fungsi ingatan yang baik, walaupun terdapat tanda-tanda awal kemerosotan dalam kalangan kecil responden.

Dalam domain orientasi, didapati 161 responden menilai diri mereka berada pada tahap jarang mengalami kekeliruan orientasi, manakala 61 orang tidak pernah dan 64 orang sekali-sekala mengalaminya. Namun, 42 responden (kerap dan sangat kerap) menunjukkan gangguan orientasi yang lebih ketara, yang berpotensi mengganggu keupayaan mereka menyesuaikan diri dengan masa, tempat, dan individu di sekeliling. Bagi domain penghakiman dan penyelesaian masalah, dapatan menunjukkan corak yang lebih seimbang, di mana 114 responden (34.8%) berada pada tahap kerap, 86 orang (26.2%) jarang, dan 66 orang (20.1%) sangat kerap mengalami kesukaran membuat keputusan atau menilai situasi dengan tepat. Keputusan ini memberi gambaran bahawa aspek fungsi eksekutif merupakan salah satu domain yang paling mudah terjejas dalam kalangan warga emas berisiko demensia.

Seterusnya, dalam domain aktiviti komuniti, majoriti responden (138 orang) melaporkan gangguan kerap, diikuti oleh 90 orang (sangat kerap). Ini menunjukkan bahawa keupayaan untuk terlibat dalam aktiviti sosial dan masyarakat semakin menurun, kemungkinan disebabkan oleh kemerosotan kognitif, kehilangan motivasi, atau kekangan fizikal. Bagi domain rumah tangga dan hobi, dapatan menunjukkan bahawa 160 orang (48.8%) responden tidak pernah mengalami kesukaran, manakala 114 orang (34.8%) melaporkan kesukaran jarang berlaku. Hanya sebahagian kecil (54 orang) mengalami kesukaran kerap atau sangat kerap. Ini menunjukkan bahawa aktiviti domestik dan hobi masih dapat dijalankan oleh kebanyakan responden, walaupun dengan tahap keupayaan yang berbeza-beza.

Akhir sekali, dalam domain penjagaan diri, majoriti responden (99 orang tidak pernah, 126 orang jarang, dan 75 orang sekali-sekala) masih mampu menguruskan keperluan asas diri tanpa bantuan luar. Namun, 28 responden (8.5%) menunjukkan keperluan bantuan yang tinggi, menggambarkan kemerosotan fungsi diri yang lebih serius. Secara keseluruhannya, analisis terhadap enam domain CDR menunjukkan bahawa gangguan kognitif yang paling ketara berlaku dalam domain aktiviti komuniti dan penghakiman/pembuatan keputusan, manakala fungsi penjagaan diri dan aktiviti rumah tangga masih terpelihara bagi kebanyakan responden. Dapatan ini menyokong penemuan bahawa sebahagian besar warga emas dalam kajian berada pada tahap awal simptom demensia (CDR = 0.5 dan 1), yang menekankan kepentingan pengesanan awal, intervensi kognitif, dan sokongan sosial berstruktur bagi mengekalkan kualiti hidup mereka.

Jadual 5: Penilaian Demensia Klinikal (CDR)

Domain	Tidak Pernah	Jarang	Sekali sekali	Kerap	Sangat kerap	Jumlah
Ingatan	112	98	89	13	16	328
Orientasi	61	161	64	13	29	328
Penghakiman dan penyelesaian	-	86	62	114	66	328
Aktiviti komuniti	12	25	63	138	90	328
Rumah tangga dan hobi	160	114	12	26	16	328
Penjagaan diri	99	126	75	-	28	328

Jadual 6 menunjukkan taburan responden berdasarkan Skor CDR yang digunakan untuk mengukur tahap keterukan simptom demensia. Dapatan kajian memperlihatkan variasi tahap kognitif dalam kalangan responden. Secara keseluruhan, seramai 12 orang responden (3.66%) berada pada skor CDR = 0, iaitu tiada simptom demensia yang dapat dikesan. Walau bagaimanapun, majoriti responden, iaitu 161 orang (49.09%), berada pada tahap CDR = 0.5 yang dikategorikan sebagai sangat ringan. Hal ini menunjukkan terdapat tanda awal kemerosotan kognitif, namun responden masih mampu mengekalkan kebanyakan fungsi kehidupan harian. Bagi tahap CDR = 1 (Ringan), sebanyak 113 orang responden (34.45%) dikenal pasti. Mereka menunjukkan kemerosotan memori dan fungsi kognitif yang lebih ketara, dan mula memerlukan bantuan dalam beberapa aktiviti harian.

Sementara itu, hanya 13 orang responden (3.96%) berada pada tahap CDR = 2 (Sederhana) yang menandakan gangguan kognitif yang lebih serius serta memerlukan sokongan lebih besar dalam melaksanakan aktiviti harian yang kompleks dan penjagaan diri. Menariknya, dapatan turut menunjukkan bahawa 29 orang responden (8.84%) berada pada tahap CDR = 3 (Teruk), iaitu tahap di mana memori dan fungsi harian sangat terjejas sehingga mereka memerlukan bantuan sepenuhnya daripada penjaga atau ahli keluarga dalam hamper semua aspek kehidupan seharian. Secara keseluruhan, hasil kajian ini menunjukkan bahawa sebahagian besar responden berada pada tahap awal simptom demensia (CDR = 0.5 dan 1), yang menandakan keperluan kepada intervensi awal dan pemantauan berkala bagi mengelakkan kemerosotan fungsi kognitif yang lebih serius.

Berdasarkan dapatan bagi CDR 3, 17 responden merupakan pesakit demensia yang telah mendapat rawatan daripada pakar perubatan, manakala baki 12 orang lagi menerima penjagaan di rumah tanpa rawatan khusus dari pakar. Keadaan ini menunjukkan masih terdapat sebahagian pesakit yang belum mendapat akses kepada rawatan professional, sama ada disebabkan kekangan kewangan, kurang kesedaran mengenai kepentingan diagnosis awal atau kekurangan kemudahan Kesihatan khusus di Kawasan tempat tinggal mereka. Bagi responden lain yang berisiko demensia (iaitu mereka yang menunjukkan simptom awal demensia), usaha pencegahan dan pengesanan awal amat penting. Langkah seperti pemeriksaan kognitif berkala, intervensi gaya hidup sihat, serta program kesedaran Masyarakat perlu diperluas bagi memastikan mereka dapat menerima rawatan dan sokongan yang sesuai sebelum keadaan menjadi lebih serius.

Jadual 6: Dapatan Skor Penilaian Demensia Klinikal (CDR)

Skor CDR		Makna	Bilangan Responden (orang)
1	0	Tiada simptom	12
2	0.5	Sangat ringan	161
3	1	Ringan	113
4	2	Sederhana	13
5	3	Teruk	29

KESIMPULAN

Secara keseluruhannya, hasil kajian menunjukkan bahawa majoriti responden berada pada tahap awal simptom demensia ($CDR = 0.5$ dan 1), yang menandakan kemerosotan kognitif ringan dan masih boleh dikawal melalui intervensi awal serta pemantauan berterusan. Antara enam domain CDR yang dinilai, aktiviti komuniti serta penghakiman dan penyelesaian masalah dikenal pasti sebagai domain yang paling terjejas, manakala fungsi penjagaan diri dan aktiviti rumah tangga masih berada pada tahap yang baik. Dapatan ini menggambarkan corak biasa dalam kalangan warga emas, di mana kemerosotan kognitif lazimnya bermula dengan penurunan keupayaan sosial dan fungsi eksekutif sebelum menjejaskan keupayaan asas harian. Apabila diteliti bersama dapatan daripada sejarah perubatan dan gaya hidup, didapati bahawa penyakit kronik seperti darah tinggi, kolesterol tinggi, dan kencing manis memainkan peranan penting sebagai faktor risiko kepada penurunan fungsi kognitif. Hal ini menunjukkan bahawa pengurusan demensia tidak boleh dilihat secara terasing daripada aspek kesihatan fizikal, sebaliknya memerlukan pendekatan holistik yang menekankan pencegahan, rawatan bersepadu, dan sokongan sosial berterusan.

Berdasarkan penemuan ini, beberapa cadangan penambahbaikan dikemukakan bagi memperkukuh usaha pencegahan dan pengurusan demensia dalam kalangan warga emas di Malaysia. Pertama, program saringan awal demensia perlu diperkukuh di peringkat komuniti melalui pelaksanaan pemeriksaan berkala di klinik kesihatan, pusat komuniti, serta rumah jagaan warga emas. Petugas kesihatan dan sukarelawan komuniti wajar dilatih untuk mengenal pasti tanda-tanda awal demensia menggunakan alat penilaian yang standard seperti *Mini-Mental State Examination (MMSE)* dan *CDR Scale*. Kedua, perlu ada peningkatan akses kepada rawatan dan sokongan pakar, termasuk penyediaan laluan rujukan yang lebih mudah kepada pakar neurologi atau psikiatri geriatrik. Kerjasama antara hospital, universiti, dan pusat komuniti boleh diperluas bagi menjalankan terapi kognitif ringan, kaunseling, serta program intervensi awal untuk individu yang berisiko.

Ketiga, kesedaran awam mengenai demensia harus dipertingkatkan melalui kempen pendidikan berterusan bagi menanam kefahaman masyarakat tentang kepentingan pengesanan awal dan pengurusan pesakit. Bengkel dan program latihan kepada ahli keluarga penjaga juga perlu diperluas bagi memperkukuh aspek sokongan psikososial di rumah. Keempat, penekanan terhadap gaya hidup sihat perlu dijadikan strategi utama pencegahan. Pengawalan penyakit kronik seperti hipertensi, kolesterol tinggi dan diabetes melalui pemakanan seimbang, senaman berkala, serta pengurusan tekanan perlu dipromosikan secara meluas. Aktiviti yang merangsang minda seperti membaca, permainan kognitif dan penglibatan sosial aktif juga penting untuk mengekalkan kesihatan otak warga emas.

Akhir sekali, bagi tujuan penyelidikan masa hadapan, disarankan agar kajian lanjutan dijalankan menggunakan reka bentuk longitudinal bagi menilai perubahan tahap CDR dari semasa ke semasa

serta mengenal pasti faktor ramalan utama yang mempengaruhi kemerosotan kognitif. Kajian lanjutan juga boleh melibatkan analisis korelasi atau regresi antara pemboleh ubah kesihatan, gaya hidup, dan skor CDR bagi memperkukuh bukti empirikal tentang faktor penyumbang kepada demensia. Secara keseluruhan, hasil kajian ini menegaskan bahawa intervensi awal, pendidikan kesihatan, dan sokongan berasaskan komuniti memainkan peranan penting dalam mengekang peningkatan kes demensia di Malaysia serta membantu warga emas mengekalkan kualiti hidup dan kesejahteraan mental mereka pada usia lanjut.

PENGHARGAAN

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101-084

THE DYNAMIC IMPACT OF DEMOGRAPHICS ON NATIONAL TAX POLICY AND FISCAL PLANNING: A REVIEW TOWARDS FAMILY WELL-BEING AND POPULATION AGEING

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ABSTRACT

The demographic structural changes in Malaysia, particularly the declining fertility rate, increased life expectancy, and rapid growth of the elderly population have significant implications for the nation's tax system and fiscal planning. This concept paper aims to analyse the relationship between demographic dynamics and tax policies, as well as their implications towards family well-being and long-term fiscal sustainability. Through a conceptual approach, this article discusses the theoretical framework that links demographic transition with the tax policies and examines how the fiscal burden can be balanced between the productive younger generation and the elderly who are depending on social support. The literature review highlights international experiences and best practices that can serve as references in the Malaysian context. The discussion proposes a conceptual framework to understand the interaction between demographic factors, taxation, and family well-being, emphasising intergenerational equity and fiscal sustainability. It is hoped that this concept paper will contribute to academic discourse and provide useful input to policymakers in formulating tax strategies and fiscal planning that are responsive to the country's demographic changes.

Keywords: Demographics, Taxation, Fiscal Planning, Family Well-being, Population Ageing.

INTRODUCTION

Malaysia is undergoing rapid demographic transition characterised by a declining fertility rate, an increase in life expectancy, and the accelerated growth of the elderly population. According to the Department of Statistics Malaysia (DOSM 2024), the proportion of citizens aged 65 and above is projected to reach 14.5 per cent by 2040, classifying Malaysia as an aged nation. Meanwhile, the total fertility rate has dropped to 1.6 children per woman in 2023, far below the replacement level of 2.1. These demographic shifts not only alter the population structure but also exert significant pressure on national fiscal sustainability, particularly the tax system which heavily relies on the active labour force.

The fiscal implications of demographic change are well documented in international literature. Bloom et al. (2010) emphasise that an ageing population reduces the relative size of the working-age group, thereby constraining tax revenues while increasing the fiscal burden of social expenditure. Similarly, Lee and Mason (2011) argue that demographic transition transforms the intergenerational transfer system, as governments face growing obligations to finance pensions, healthcare, and long-term care for older citizens. For Malaysia, these concerns are particularly urgent because tax revenues remain modest compared to OECD averages, with a relatively narrow base that is vulnerable to labour force contraction (OECD 2022).

While younger generations continue to drive tax revenues, the growing elderly population increases demand for public resources, particularly in pensions, healthcare subsidies, and social welfare. This creates a fiscal imbalance that risks widening budget deficits and constraining development expenditure if no policy reforms are undertaken (World Bank 2020; IMF 2021). Moreover, the demographic shift coincides with structural economic changes such as the expansion of the gig economy and the digitalisation of work, which further complicate tax collection and compliance (Nik Puteri Nur Anis et al. 2020; Schneider & Williams 2016).

Despite these pressing concerns, scholarly attention in Malaysia remains limited. Much of the existing demographic research has focused on ageing, health, and social protection (Abdullah et al. 2024; Azhar & Omar 2024; Samad et al. 2024) with fewer conceptual or empirical studies explicitly examining the nexus between demographic dynamics, taxation, and fiscal planning. This gap in the literature highlights the need for a more integrated framework that situates demographic transitions within the broader discourse of fiscal sustainability and intergenerational equity. Addressing this gap is critical, not only for anticipating the fiscal challenges of an ageing society but also for guiding policy reforms that ensure long-term economic resilience and social well-being.

LITERATURE REVIEW

The relationship between demographic transitions and fiscal sustainability has been widely documented in international scholarship. Mason and Lee (2022), through the National Transfer Accounts (NTA) framework, emphasised that ageing societies experience a dual fiscal burden which are a shrinking labour force reduces income tax contributions, while the increasing number of elderly escalates public expenditure on pensions, healthcare, and long-term care. Tamai and Wang (2025) further argue that unless governments adjust their tax and fiscal structures, demographic ageing can undermine economic growth and widen intergenerational inequities.

Empirical evidence from developed economies demonstrates a variety of fiscal responses. In Japan, one of the most rapidly ageing nations, reforms included raising the consumption tax (VAT) and restructuring pension contributions to stabilise revenue streams (Jones, 2022). Similarly, South Korea introduced family-friendly tax credits and subsidies to encourage higher fertility rates while simultaneously revising social insurance contributions to support an ageing population (Kim et al. 2024; Kim & Kwon, 2021). These experiences suggest that demographic transitions necessitate a comprehensive recalibration of tax policy to ensure long-term fiscal sustainability.

In the Malaysian context, research linking demographics directly to taxation remains limited. Existing studies often focus on tax compliance (Kamarudin et al. 2024), digital economy taxation (Raja Wahab & Abu Bakar, 2021) or retirement and savings adequacy (Zainal Alam et al. 2022). While these studies provide important insights into taxpayer behaviour and retirement

preparedness, they seldom integrate population dynamics into fiscal policy debates. Cerruti et al. (2023) and Novoa Hoyos et al. (2022) highlighted low levels of awareness among households regarding family-related tax incentives, weakening the intended impact of such measures. This indicates that even where fiscal tools exist, their effectiveness is undermined by gaps in awareness and accessibility.

A further strand of literature explores the socio-economic impact of ageing in Malaysia. Jaafar et al. (2019) asserted that the country is moving towards aged nation status by 2030, which will heighten fiscal pressures due to increasing healthcare and social protection expenditures. Yet, little has been written on how the tax system can be strategically reformed to mitigate these pressures while simultaneously supporting family well-being. Unlike OECD countries, Malaysia's tax-to-GDP ratio remains relatively low, specifically 11.8 per cent in 2022 (World Bank, 2022). Thus, the low ratio demonstrates the constraints of government's ability to expand welfare spending without substantial tax reform.

In 2022–2023, Malaysia's total fertility rate was approximately 1.6 children per woman. While in 2024, the statistic from DOSM indicated growth rate of 1.6 per cent for the elderly, primarily attributed to a decline in birth rates. The elderly population, defined as individuals aged 65 and older, constituted 7.7 per cent of the total population, whereas the working-age demographic represented the majority at 70.2 per cent. Currently, Japan is undergoing a significant advanced demographic transition where the total fertility rate is projected to be 1.15 in 2024, with nearly 30 per cent of the population aged 65 or older, representing the highest percentage globally (United Nations 2024). This comparison indicates that Malaysia is in an initial phase of demographic ageing, characterized by a decline in fertility rates while the responsibility of elder care remains manageable. Japan exemplifies the long-term consequences of sustained low fertility rates and accelerated aging. This phenomenon indicates the social and financial challenges Malaysia is expected to encounter if prevailing trends persist.

Taken together, the literature underscores two key gaps. First, there is a lack of integrated conceptual frameworks in Malaysia that explicitly link demographic dynamics with tax policy and fiscal planning. Second, limited attention has been given to the role of taxation in promoting intergenerational equity and family resilience amidst demographic shifts. Addressing these gaps, this paper proposes a conceptual framework that situates taxation as both a fiscal instrument and a social policy tool responsive to demographic change.

RESEARCH METHODOLOGY

This study adopts a conceptual research design, focusing on the synthesis of existing knowledge rather than empirical data collection. Conceptual studies are valuable for addressing emerging policy issues where empirical evidence is still scarce, as they allow the integration of theory, demographic statistics, and comparative practices into a coherent analytical framework (Jaakkola, 2020). In the context of demographic change and fiscal sustainability in Malaysia, such an approach enables the construction of a model that links ageing trends with tax policy and long-term family well-being. The methodology involves three interrelated steps.

The first stage involves library research, with a comprehensive review of demographic and fiscal data from authoritative institutions, including the Department of Statistics Malaysia (DOSM), the World Bank, and the United Nations Department of Economic and Social Affairs (UNDESA). These datasets provide the empirical backdrop against which demographic transitions including

declining fertility, rising longevity and shifts in labour force participation, are assessed in relation to fiscal vulnerabilities.

The second stage centres on integrative literature analysis, whereby prior studies on taxation, population ageing, and intergenerational equity are systematically synthesised. Contributions from the fields of demographic economics, fiscal sustainability, and social policy, alongside Malaysia-specific ageing research, are critically appraised to clarify theoretical linkages and identify empirical gaps. This step ensures that the proposed framework is informed by established knowledge while addressing deficiencies in the current literature, particularly the lack of integration between demographic change and fiscal planning in the Malaysian context.

The concluding phase involves the development of a framework that utilizes demographic projections and insights from existing literature to create a conceptual model. This framework highlights the significance of national tax policy in mitigating fiscal pressures resulting from demographic changes, while also fostering family well-being in an ageing population. It demonstrates the impact of a declining workforce and an aging population on revenue mobilization and expenditure commitments, with a particular emphasis on pensions, healthcare, and social protection. The framework emphasizes the central role of families in fiscal sustainability, highlighting that tax reforms such as expanding the revenue base, reinforcing progressive measures, and promoting caregiving support, can reduce intergenerational inequities and improve household resilience. The framework aligns with recent calls for integrated fiscal planning in Malaysia, positioning taxation as a means for fiscal stability and a mechanism to promote redistribution, intergenerational solidarity, and long-term family well-being.

By combining demographic evidence, theoretical insights, and comparative international experiences, this methodology allows the study to advance a structured framework for analysing the fiscal consequences of demographic transition in Malaysia.

CONCLUSION

Demographic changes in Malaysia present considerable challenges for taxation and fiscal planning. Current policies insufficiently align with the changing demographics. This conceptual paper emphasizes the significance of incorporating demographic analysis into fiscal policymaking. The findings are intended to inform future empirical research and assist policymakers in developing tax strategies that promote family well-being and national fiscal sustainability.

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POST-PANDEMIC DISTRIBUTION OF OUT-OF-POCKET HEALTH EXPENDITURE IN HOUSEHOLDS WITH ELDERLY IN NEGERI SEMBILAN, MALAYSIA

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ABSTRACT

The COVID-19 pandemic had significant financial implications for Malaysian households, particularly in terms of healthcare-related expenses such as out-of-pocket health expenditure (OOPHE). OOPHE can lead to financial catastrophe, especially among households with elderly members who face a higher risk of incurring substantial healthcare costs. This study aimed to examine the distribution of post-pandemic OOPHE among elderly households in Negeri Sembilan, Malaysia. A cross-sectional survey was conducted from February to August 2024, involving 168 households with elderly members, selected via proportionate stratified sampling. Face-to-face interviews were conducted using a modified version of the National Health and Morbidity Survey (2020) questionnaire. Descriptive analysis was used to determine the mean and median monthly OOPHE (in MYR) across household sociodemographic characteristics and healthcare service types. The mean (SD) and median (IQR) monthly OOPHE were MYR197.95 (466.44) and MYR64.70 (159.39), respectively. Higher OOPHE was reported among households with younger respondents (aged 18–39), male, Malay ethnicity, located in Tampin district and rural areas, with unmarried status, higher education, government employment, and higher income levels. By healthcare service type, the highest expenditure was on pharmaceuticals (MYR105.52), followed by hospital-based services (MYR40.61), outpatient clinics (MYR21.01), medical products

(MYR18.06), dental services (MYR8.34), and other outpatient services (MYR4.41). OOPHE levels among elderly households were considerably higher than pre-pandemic national figures. These findings reflect increased healthcare demands among the elderly, including a greater burden of chronic diseases, frequent service use, and costlier specialized care. The study highlights the urgent need for continuous monitoring and targeted financial protection strategies for ageing populations, aligned with Malaysia's transition toward an ageing society.

Keywords: Out-Of-Pocket Health Expenditure (OOPHE), Elderly Households, Post-Pandemic, Financial Protection, Malaysia.

INTRODUCTION

Population ageing has emerged as pivotal demographic trends of the 21st century, marked by an increasing proportion of individuals aged 60 years old and above (World Health Organization, 2025b). According to previous reports, the global population ageing is expected to witness an increase from 1 billion in 2020 to 1.4 billion by 2030, and by 2050, this figure is projected to double to 2.1 billion, marking an unprecedented demographic transition (World Health Organization, 2024). Malaysia is no exception in experiencing this demographic shift. Malaysia is projected to reach ageing nation by 2030, with 15% of Malaysian defined as elderly (Abdullah et al., 2024). This demographic transition carries significant implications for healthcare and exacerbated financial strain.

The emergence of COVID-19 has further exacerbated the healthcare strain globally with more than 770 million confirmed cases recorded (World Health Organization, 2025a). Elderly population was disproportionately affected and contributed to higher rates of mortality due to COVID-19 infection. Previous report highlighted, that over 80% of the global COVID-19-related deaths between 2020 and 2021 occurred among elderly population (Wong et al., 2023). Generally, elderly tend to visit healthcare facilities more frequently due to deteriorating health conditions. The escalated healthcare demand among elderly positively contributes to the higher healthcare expenditure, particularly out-of-pocket health expenditure (OOPHE). OOPHE can be defined as direct payments made by households including gratuities and in-kind payments, to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or enhancement of the health status of individuals or population groups (Data Bank, 2025). OOPHE as a share of current health expenditure slightly increased from 16.33% in 2020 to 17.23% in 2022 (World Bank, 2025), indicates the continuous reliance on OOPHE during the pandemic. High reliance on OOPHE placed households at risk of financial hardship included sold assets, debts or foregone the needed healthcare (Ergo et al., 2019).

Elderly households are particularly at risk of financial consequences of healthcare utilization, especially those with weak financial protection. This resulted in greater responsibility and burden on family members, as they are required to bear the healthcare expenditure. Elderly population in high-income countries usually spend a small amount of OOPHE due to strong financial protection compared to middle and low-income countries. To illustrate, a study conducted in United States reported that OOPHE among elderly approximately 20% of total healthcare expenditures, meanwhile Vietnam revealed that healthcare for elderly members made up 86.3% of total household OOPHE (De Nardi et al., 2016; Giang et al., 2022). Both studies consistently showed that elderly households in lower-income countries were disproportionately impacted by OOPHE and encountered a notably greater financial burden.

In Malaysia, ageing population is closely linked to the presence of non-communicable diseases (NCD), which further strengthening the healthcare and financial burden. Although Malaysia has implemented several policies in promoting healthy ageing and better access to healthcare such as National Health Policy for Older Persons, PEKA B40 and MySalam, the financial burden among the households remains substantial. Malaysia's limited investment in healthcare is one of the factors to the lack of successful in reducing the OOPHE among elderly, even though several initiatives has been implemented. To illustrate, Malaysia allocated only 3.91% of its GDP to healthcare compared to other countries such as United States (16.50%), France (11.88%), and Thailand (5.35%) (World Bank, 2025a).

In the context of Malaysia's demographic shift towards an ageing nation, understanding the financial burden among households with elderly represented a pressing and highly significant research priority. While previous literature on OOPHE has been conducted during the pre-pandemic and pandemic phase, studies specifically focusing on OOPHE among households with elderly in the post -pandemic remains scarce. Although universal health coverage (UHC) is in place, financial protection remains incomplete, especially in covering the expenditure of elderly care. The added strain of the COVID-19 pandemic on household finances highlights the urgency of examining post-pandemic OOPHE patterns to inform targeted policy responses. Therefore, this study aims to aimed to assess the distribution of OOPHE post-pandemic among households with elderly members in Negeri Sembilan, Malaysia.

METHODOLOGY

STUDY DESIGN AND SAMPLE POPULATION

This cross-sectional study was conducted among households across the seven districts in Negeri Sembilan, Malaysia using a proportionate stratified sampling method. According to the previous report, Negeri Sembilan had an estimated population of approximately 1.24 million in 2023, from which a calculated sample size of 168 respondents was determined (Department of Statistics Malaysia, 2024) . The proportionate percentage of sample size required from each district was as follows; Seremban (51.2%) Port Dickson (15.5%), Jempol (7.1%), Tampin (6.5%), Kuala Pilah (7.7%), Jelebu (6.0%), and Rembau (6.0%). Convenience sampling was employed to collect samples from each stratum from February to August 2024.

The inclusion criteria in this study encompassed Malaysian head of household who are 18 years and above, possess at least one elderly member, able to understand, read, and write in Malay or English. Those who reside in non-permanent living quarters such as old folk's homes, hostels, rehabilitation centers, etc., were excluded.

STUDY TOOLS

The questionnaire employed in this study was adapted from National Health and Morbidity Survey (Institute for Health Systems Research, 2020), with some modification to align with the objective. This questionnaire consists of three sections: (a) sociodemographic profile, (b) monthly household expenditure, and (c) details of monthly OOPHE. Sociodemographic profile consisted of district, residence area, age, gender, ethnic group, marital status, education level, types of occupation, and household income classification (monthly, in MYR).

Household OOPHE were categorized into six main groups;(1) pharmaceuticals product, (medicines with prescription, medicines without prescription, health supplements, traditional & complementary medicines (T&CM)), (2) hospital-based services (government hospital, semi-government hospital, private hospital), (3) outpatient-based (clinic) (government clinic, semi-government clinic, private clinic), (4) medical products and appliances (durable medical products & appliances, other medical products & appliances), (5) outpatient-based dental (government dental clinic, semi-government dental clinic, private dental clinic), (6) outpatients-based services (others) (T&CM treatment/services, laboratory services, radiological/imaging services, physiotherapy/chiropractor/homecare services). The content of questionnaire was further validated by three experts in the related field and was piloted with 50 respondents. Data collection was carried out through face-to-face interviews.

DATA ANALYSIS

Data obtained was analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 24.0. Descriptive statistics were used to summarize the sociodemographic characteristic of households and distribution of monthly household OOPHE for different healthcare services and items. OOPHE (MYR) was described in mean (SD) and median (IQR).

ETHICAL CONSIDERATIONS

The ethical approval was obtained from the Human Research and Ethics Committee of Universiti Sains Islam Malaysia. Written informed consent was obtained from all participants, who were assured of the anonymity and confidentiality of their personal information.

RESULT

The overall mean (SD) out-of-pocket health expenditure (OOPHE) among households with elderly in Negeri Sembilan (n=168) was MYR197.96 (466.44) and median (IQR) MYR64.70 (159.39). The distribution of OOPHE for sociodemographic was reported as median (IQR) since the distribution data was not normally distributed. The distribution of OOPHE was varied across different sociodemographic characteristics as shown in **Table 1**. The highest median OOPHE was reported among household's head in Tampin district, rural areas, younger age group, male, Malay, not married, tertiary educational level, those who work in government sector, and higher income groups.

Table 1: Sociodemographic characteristics and distribution of monthly households' out-of-pocket health expenditure (OOPHE) with elderly in Negeri Sembilan (n=168)

Variables	n (%)	OOPHE (MYR) Mean (SD)	OOPHE (MYR) Median (IQR)
Negeri Sembilan	168 (100.0)	197.95 (466.44)	64.70 (159.39)
District			
Seremban	86 (51.2)	210.91 (497.80)	68.79 (162.50)
Port Dickson	26 (15.5)	77.45 (95.18)	22.50 (158.75)

Jempol	12 (7.1)	364.37 (970.62)	55.00 (185.04)
Tampin	11 (6.5)	154.37 (118.57)	130.00 (113.92)
Kuala Pilah	13 (7.7)	309.35 (481.08)	60.00 (433.29)
Jelevu	10 (6.0)	157.66 (255.27)	70.42 (180.43)
Rembau	10 (6.0)	143.50 (157.81)	112.50 (156.50)
Residence			
Urban	121 (72.0)	154.78 (336.11)	60.00 (159.82)
Rural	47 (28.0)	309.09 (691.11)	177.87 (190.00)
Age Group of Household Head			
18-39	10 (6.0)	262.34 (445.09)	131.46 (194.76)
40-64	75 (44.6)	197.86 (520.53)	65.08 (181.40)
≥65	83 (49.4)	190.28 (419.85)	55.83 (130.00)
Gender			
Male	141 (83.9)	194.95 (445.14)	65.08 (158.95)
Female	27 (16.1)	213.65 (574.62)	51.15 (162.00)
Ethnicity			
Malay	85 (50.6)	185.92 (390.56)	81.00 (147.46)
Chinese	53 (31.5)	206.70 (519.64)	46.66 (147.84)
Indian	30 (17.9)	216.57 (570.92)	62.16 (213.75)
Marital status			
Married	137 (81.5)	171.92 (422.30)	61.00 (148.33)
Divorced/Widowed	23 (13.7)	245.89 (621.20)	86.66 (184.73)
Not married	8 (4.8)	505.87 (619.42)	287.50 (1164.58)
Educational level			
No formal education/Primary	15 (8.9)	95.52 (210.73)	24.80 (66.00)
Secondary	108 (64.3)	138.16 (365.11)	50.00 (119.21)
Tertiary	45 (26.8)	375.60 (665.46)	170.00 (265.41)
Occupation of Household Head			
Government sector	11 (6.5)	277.08 (420.85)	183.00 (235.83)
Private sector	24 (14.3)	315.48 (653.35)	97.21 (236.75)
Others	106 (63.1)	62.00 (70.00)	30.00 (59.00)
Household Income Classifications			
Top 20%	8 (4.8)	681.67 (1010.63)	283.33 (803.13)
Middle 40%	23 (13.7)	485.09 (942.01)	180.00 (243.49)
Bottom 40%	137 (81.5)	121.50 (193.51)	51.15 (120.22)

(Conversion rate as of 31 August 2024: MYR1=USD0.22)

In terms of OOPHE distribution according to different healthcare services and items, the highest means OOPHE was made for pharmaceuticals, hospital-based services, outpatient-based services (clinic), medical products and appliances, outpatient-based services (dental) and outpatient-based services (others) respectively (**Table 2**). Among pharmaceuticals, OOPHE was highest for purchased health supplements and lowest for medicine without prescription. For hospital-based services, OOPHE was highest for government hospitals and lowest for semi-government hospitals. For outpatient-based services (clinic), OOPHE was highest for private clinics and lowest for semi-government clinics. Medical and appliances, OOPHE was highest for other medical products and appliances and lowest for durable medical products and appliances. In outpatient-based services

(dental), OOPHE was highest among private dental clinics and lowest at semi-government dental clinic. In the category of other outpatient-based services, OOPHE was highest for T&CM treatment/services and lowest for physiotherapy/chiropractor/homecare services.

Table 2: Distribution of monthly households' out-of-pocket health expenditure (OOPHE) with elderly and for different group of healthcare services or items in Negeri Sembilan (n=168).

Group of Healthcare items or services	OOPHE (MYR) Mean (SD)
Pharmaceuticals	105.52 (312.04)
Medicines with prescription	28.70 (139.47)
Medicines without prescription	10.71 (22.20)
Health supplements	33.65 (63.73)
Traditional & Complementary medicines (T&CM)	32.46 (261.51)
Hospital-based services	40.61 (265.27)
Government hospital	24.53 (235.78)
Semi-government hospital	0.15 (1.93)
Private hospital	15.93 (124.75)
Outpatient-based services (Clinic)	21.01 (101.62)
Government Clinic	0.63 (2.62)
Semi-government clinic	0.00 (0.00)
Private clinic	20.39 (101.70)
Medical products and appliances	18.06 (72.04)
Durable medical products & appliances	6.07 (24.70)
Other medical products & appliances	11.99 (67.78)
Outpatient-based services (Dental)	8.34 (43.12)
Government dental clinic	0.11 (0.62)
Semi-government dental clinic	0.00 (0.00)
Private dental clinic	8.23 (43.14)
Outpatient-based services (Others)	4.41 (19.17)
Traditional & Complementary (T&CM) treatment/services	3.19 (16.84)
Laboratory services	0.82 (5.20)
Radiological/Imaging services	0.39 (4.65)
Physiotherapy/chiropractor/homecare services	0.00 (0.00)
Ambulatory services	0.00 (0.00)

(Conversion rate as of 31 August 2024: MYR1=USD0.22)

DISCUSSION

The findings from this study revealed that the mean (SD) monthly OOPHE among households with elderly members in Negeri Sembilan was MYR 197.95 (64.70), approximately double the national average of MYR 91.66 (174.19) reported among elderly in 2016 (Sayuti & Sukeri, 2022). This notable disparity indicates a considerable increase in healthcare expenditures for elderly people in the state over the past decade. The COVID-19 pandemic further accelerated the increased

of OOPHE to MYR187.77 on preventive measures, indicates greater health awareness (Jaafar et al., 2021). At the macro level, OOPHE from 1997 to 2019 has increased from RM3,166 million to RM22,492 million which constitute 1.5% of GDP (Malaysia National Health Accounts, 2021). During the pandemic, a notable shift among population from public to private healthcare services led to an increase in OOPHE, which rose from 73.56% in 2019 to 77.96% in 2022 (Malaysia National Health Accounts, 2024). Malaysia's healthcare system is still developing its geriatric care infrastructure, facing a shortage of specialized healthcare professionals trained in geriatric medicine, which results in a lack of tailored care for older adults might causing a shift in the population toward private healthcare services (Abdullah et al., 2024).

As far as we are aware, there have been no published studies to date that address post-pandemic OOPHE among households with elderly members in Malaysia. Notably, our findings recorded a sharp increase of OOPHE among households with elderly members during the post-pandemic period compared to the pre-pandemic levels. The high OOPHE significantly grown can be partly attributed to current medical cost inflation reaching 15% in 2024 higher than Asia Pacific average of 10% (Bank Negara Malaysia, 2024). This inflation caused financial hardship in seeking healthcare, especially those in lower-income households. This study found that higher-income households incurred greater amounts of OOPHE compared to lower-income households, aligning with findings from previous research (Baharin et al., 2022). This reflected their greater propensity to utilize private healthcare facilities and purchased private health insurance. Despite their higher OOPHE, they were likely less to experience financial hardship due to secure financial that prevents them from falling into poverty. Additionally, higher income status frequently correlates with higher level of education and has been protective towards financial burden. This correlation led to greater awareness of health and more likely to allocate more resources to health. The findings of this study regarding the influence of both higher income and higher educational levels are consistent with previous research conducted in Malaysia in pre-pandemic level (Khalim & Sukeri, 2023; Sayuti & Sukeri, 2022).

Geographical areas also contribute to higher amounts of OOPHE. Outcomes from this study demonstrate that those that reside in rural areas tend to spend more on OOPHE compared to those in urban areas, where contradict with previous study in Malaysia (Anis-Syakira et al., 2022; Sayuti & Sukeri, 2022). This may result from elevated utilization of public health services in rural areas or inequalities in income and expenditure capacity between urban and rural populations. Nonetheless, a study in Myanmar aligns with the finding. Its recorded that population that reside in rural areas associates with lower-income households often utilized traditional healers, informal drug sellers, unlicensed medical providers and free clinics run by non-governmental organizations made them incurred more OOPHE (Ergo et al., 2019). This study also indicated that male head of households incurred higher OOPHE than female head households. This finding contrast which previous study, where most of the literature highlighted that female primarily affected by chronic illness, led them to utilize healthcare services more frequent than male and incurred more OOPHE (Bodhisane & Pongpanich, 2023; Giang et al., 2022; Mohd Ismail et al., 2020). Nonetheless, female income average comparatively lower than males, which may lead to higher healthcare expenditure among male-headed households due to their greater financial capacity (Mohd Ismail et al., 2020; Said et al., 2020). This enables male-head of households to afford healthcare without experiencing financial burden, even with high OOPHE. Plus, findings from this study reveal that unmarried heads of households spend more money on health as they lack shared financial resources that result in greater healthcare burden. This findings equivalent to previous study (Roshanim et al., 2019; Sayuti & Sukeri, 2022).

Furthermore, in aspect of healthcare groups, pharmaceutical represented the largest average of monthly OOPHE at MYR105.52, correspond with the previous findings in Malaysia (Baharin et

al., 2022). This expenditure is approximately two times higher than hospital-based services, demonstrates the predominant influence of pharmaceuticals on household healthcare expenditures. This included substantial expenditure on health supplements (MYR33.65), followed by traditional and complementary medicines (MYR32.46), prescription medicine (MYR28.70) and non-prescription medicine (MYR10.71). These distributions indicate that pharmaceutical expenditures encompass not only professionally prescribed treatments but also self-medication that culturally ingrained in health-seeking habits. Global evidence substantiates this findings with a study in Portugal identified medicines expenditure was the most regressive compared to other healthcare categories (Quintal, 2019). Comparatively, during the pandemic, where mean OOPHE for supplements and traditional medicine reached MYR55.97 and MYR75.00 respectively, the current study shows lower levels, possibly reflecting a shift in health priorities or reduced purchasing power in the post-pandemic period (Jaafar et al., 2021).

Hospital-based services were the second largest expenditure at MYR40.61 with higher expenditure observed in government hospitals (MYR24.53) compared to private hospitals (MYR15.93). This finding contradicts with previous research, which generally reported that use of private facilities tends to incur higher OOPHE, as they are not subsidized and operate on a fee-for-service basis (Anis-Syakira et al., 2022; Baharin et al., 2022; Giang et al., 2022). A prior study indicated that Malaysia should improve health insurance provisions for the elderly, whether via public healthcare initiatives or private insurance options, to guarantee thorough coverage for medical costs, encompassing hospitalization, specialist consultations, diagnostic assessments, and long-term care services (Abdullah et al., 2024). These initiatives aim to reduce the financial burden resulting from OOPHE, particularly for the elderly population. On the other hand, private outpatient services such as clinic, dental and others indicate higher average of OOPHE compared to the public facilities (Baharin et al., 2022). This illustrates, the way Malaysia's subsidized public healthcare system alleviates the financial strain on the elderly by providing exemptions that provide numerous services nearly cost-free. Nevertheless, private healthcare facilities are often preferred options by many Malaysians due to faster access, higher quality, immediate service delivery, and accessible, which adds significantly to their OOPHE (Anis-Syakira et al., 2022). Surprisingly the majority of outpatient visits were in line with findings from Pakistan, where 82.5% of healthcare interactions among older adults took place in the private sector, with 85% of these encounters being outpatient care (Khalid et al., 2021). Similarly in Malaysia, 8.3% of elderly utilized for outpatient care, with 33.9% of them seek treatment from private healthcare facilities (Anis-Syakira et al., 2022). The expenditure on outpatient services across various categories, along with expenditures on dental care, played a negligible role in the total OOPHE. The observed trend can be attributed to the tendency of older adults to refrain from pursuing non-urgent or elective medical interventions, especially when they encounter conflicting healthcare priorities and financial limitations.

STUDY LIMITATIONS

While this study provides valuable insights. Its findings are constrained by certain factors. Firstly, this study employed a convenience sampling which might affect the generalizability of the result and might lead to selection bias. Therefore, the sampling procedure was proportionally guided by the population composition of each district. Secondly, this study might lead to recall bias as respondents were required to recall household expenditure from the previous month. Moreover, the potential for disclosure bias remains, as respondents may have deliberately misrepresented or concealed financial information due to privacy apprehensions or unease in revealing sensitive household financial issues.

CONCLUSION

The post-pandemic OOPHE among household with elderly in Negeri Sembilan, Malaysia is high compared to the pre-pandemic figure, particularly on the expenditure on pharmaceutical and hospital services. The study highlights the urgent need for continuous monitoring and targeted financial protection strategies for health among ageing populations, aligned with Malaysia's transition toward an ageing society. Therefore, a well-structured healthcare financing system, especially among households with elderly, is essential to achieving sustainable development goals by ensuring access to healthcare without financial burden.

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195-137

AN ANALYSIS OF RETIREMENT TRENDS AMONG PERKESO CONTRIBUTORS: IMPLICATIONS FOR MALAYSIA'S AGING POPULATION

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ABSTRACT

Malaysia is increasingly confronting what demographers term a silver wave with a rapid and constant rise in the proportion of older persons within its population, driven by sustained fertility decline, rising life expectancy, and shifts in age-structure. In 2024, the Department of Statistics Malaysia (DOSM) estimated the population aged 60 years and over at 11.6 per cent of the total Malaysian population of approximately 34.1 million, representing about 3.9 million individuals. Simultaneously, the total fertility rate (TFR) dropped to 1.7 children per woman in 2023 which is the lowest level in half a century and well below the replacement threshold of 2.1. This coming together of low fertility and increasing longevity brings Malaysia to the brink of becoming an aged nation by 2040.

This paper provides a comprehensive analysis of Malaysia's ageing population, examining the economic and social impacts, with a specific focus on retirement trends based on PERKESO's contribution data. The study emphasizes that while ageing poses significant risks, it also opens avenues for innovation and inclusive growth provided Malaysia shifts from reactive welfare to proactive, age-integrated frameworks. andion data from PERKESO highlights the growing number of older adults remaining active in the workforce and contributing to the social security system, which further underscores the potential for older individuals to be seen as assets rather than solely dependents. PERKESO's employment services officers will bridge the gap in fulfilling niche demands for skilled and experienced workers by matching recent retirees with the right employers. The conclusion underscores the urgency of repositioning the older adult cohort not simply as dependent but as an asset, and aligning labour markets, health systems, and urban infrastructure accordingly.

Keywords: Ageing Population, Retirement, Social Security, Labour Shortages.

Kaedah pengumpulan, Analisis dan Penyebaran Data Untuk Penyelidikan dan Dasar Kependudukan

040-049

**PROPOSED VALUES AND DATA COLLECTION METHODS TOWARDS
CONDUCTING QUALITATIVE RESEARCH WITH DIVORCING COUPLES BASED
ON THE RESEARCH EXPERIENCE IN MARRIAGE TRIBUNAL IN URBAN
MALAYSIA**

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ABSTRACT

The discussion focusing on how to approach divorcing couples in qualitative research is rare. Based on our research experience in marriage tribunal, we argued that sensitivity towards divorcing couples' mental states while engaging them to participate in research is paramount. Thus, the aim of this paper is to discuss why it is crucial to heighten the sensitivity of the researchers and how researchers can enhance sensitivity in data collection. Why it is crucial to heighten researchers' sensitivity - firstly, in the context where helicopter research is prevailing, which is heavily influenced by the history of colonialism. This implies that research is researcher centric, and cultural sensitivity is not prioritised. Collaboration is not needed, as researchers are assumed to be more powerful than the research participants. This research approach is problematic as it perpetuates the colonial dynamics in knowledge creation. The findings are often contextually irrelevant. Secondly, experiencing divorce is a distressing life event. One's identity can be impacted and even changed. How to engage the divorcing individuals in research requires sensitivity towards the participants as well as the researcher's own biases. With regards to how researchers can do to enhance sensitivity, we propose methods for data collection that entail internal and external cross-checking mechanisms. Internal cross-checking involves core values that guide researchers in self-examination, such as cultural humility and co-learning, particularly when engaging research participants. That means researchers do not posit themselves as know-it-all. On the one hand, concerning external cross-checking, researchers are mindful of their assumptions and prior knowledge. Reality check was conducted to unfold the blind spots or even biases of the researchers. With that, interview questions were validated by people who have prior divorce experience. We hope our discussion will heighten sensitivity of qualitative researchers and invite further discussion in approaching research participants who have special needs or have experienced significant life events, in the context of Malaysia.

Keywords: Discussion On Data Collection, Qualitative Study, Cultural Humility, Co-Learning, Divorce.

067-062

COCONUT WATER: A NATURAL REMEDY UNLOCKING NEW HOPE FOR MALE FERTILITY

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ABSTRACT

Coconut (*Cocos nucifera* L.) water (CW) has been extensively studied for its therapeutic and antioxidant properties. The aim of the study is to evaluate the potential of CW to support reproductive health of male. This study was conducted in two phases, investigate the healing and enhancing effects of CW. In the protecting phase, Sprague Dawley rats were administered with bisphenol A (BPA) and coconut water at a dosage of 50 mg/kg/day and 10 mL/kg/day, respectively. For the enhancing phase, goats received CW at a dosage of 5 mL/kg/day. The animals were treated for 30 and 60 days for rats and goat, respectively. At the end of the treatment period, sperm quality, testicular sperm count, histomorphometry and sexual behaviour were observed. In rats, the administration of CW had increased sperm motility and testicular cell count, and enhanced histomorphometry measurements. Additionally, in goat, coconut water (CW) supplementation led to an increase in sperm quality and a significant improvement in various aspects of sexual behaviour. These findings highlight the potential benefits of CW as a dietary intervention for enhancing reproductive parameters. The evidence supports the potential of CW in improving fertility. Collectively, these results suggest that CW may serve as a promising natural therapeutic agent for supporting and enhancing male reproductive health.

Keywords: Coconut Water, Bisphenol A, Testis, Sperm, Rat, Goat.

104-087

**MENTAL HEALTH IN NURSING WORKFORCE: CROSS-SECTIONAL JOB
FRUSTRATION STUDY WITH DATA-DRIVEN INSIGHTS FOR POLICY**

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ABSTRACT

Mental health nurses work in highly demanding settings, placing them at elevated risk for frustration and burnout. This study aimed to explore the psychosocial and organizational factors associated with job frustration among mental health nurses in Oman. A cross-sectional quantitative design was employed, with 201 participants (general nurses and nursing leaders) completing five validated instruments: the Copenhagen Burnout Inventory (CBI), General and Social Self-Efficacy Scales, Work Engagement Scale, Leadership Perception Scale, and Coping Scale. Group comparisons were conducted using t-tests, and correlation analyses examined relationships between variables. Participants demonstrated moderate levels of self-efficacy, leadership support,

and coping, but burnout scores were notably high in work-related and client-related domains. Burnout was positively correlated with general self-efficacy ($r = .326, p < .01$), leadership perception ($r = .218, p < .01$), and coping strategies ($r = .232, p < .01$), while work engagement was not significantly associated. Nursing leaders exhibited significantly higher personal and work-related burnout than general nurses ($p = .002$ and $p = .018$, respectively), despite higher engagement in decision-making and policy development. These findings underscore the need for targeted, role-specific interventions to mitigate occupational frustration and burnout and enhance well-being, supporting sustainable organizational outcomes and evidence-informed policy in mental health nursing.

Keywords: Job Frustration, Burnout, Mental Health Nursing, Self-Efficacy, Leadership, Coping Strategies, Work Engagement, Policy-Oriented Insights.

INTRODUCTION

Nursing staff are the majority workforce who acts in the first line with patients as well as with other multidisciplinary teams. Therefore, they are under higher risk of job frustration than other team members. Job frustration (JF) is defined as a mental state that emerges when a worker encounters obstacle that impede the achievement of their professional objectives (Andalib & Halim, 2020). Job frustration in a form of burnout was first presented by Freudenberg in 1974 when an employee was observed to have lack of commitment at work due to lack of motivation (Dall'Ora et al., 2020). To manage job frustration strategically, it is required first to identify the associated factors with this phenomenon. It is indicated that set of strategies needs to be developed to manage employee moral distress supporting harmonious work environment.

In terms of work-related frustration among healthcare workers (HCW), WHO (2016) had set one of its principles for the workforce in 2030 to hold them the right to practice in a "safe and decent working environments and freedom from all kinds of discrimination, coercion and violence" (WHO, 2016, p.8). Nurses' frustration and stress at work is a common observable fact that affects negatively their emotional well-being, power, motivation and occupation efficiency (Henrich et al., 2017; Mudallal et al., 2017). There were various elements found to affect mental health nurses' job dissatisfaction such as workload and staffing, interactions with patients and emotional demands, issues with organization and support systems, workplace resources and environment, social and cultural factors (Hamaideh, 2011; Al-Khanjari & Al-Abri, 2020; Al-Balushi, 2021).

Healthcare Services in Oman

There is gradual expansion of healthcare services in Oman including mental health with fall down of staffing levels (Al-Khanjari & Al-Abri, 2020). This estimated to result in longer shifts, more patient care responsibilities and emotional exhaustion. Additionally, according to research by Hamaideh (2011), mental health nurses (MHNs) may experience severe job dissatisfaction as a result of the emotional demands imposed on them. Cultural considerations might make this problem more severe in Oman, where social stigma may prevent many individuals from seeking mental health treatment or from openly expressing their feelings (Qutishat, 2025). Furthermore, job satisfaction in healthcare organizations were significantly influenced by the organizational structure and support networks in place. Feelings of annoyance and discontent could be exacerbated by inadequate training, a lack of supervisory support, and poor communication (Al Sabei et al., 2020). From observation, inadequate professional development programs and a dearth

of comprehensive mental health policies had been identified as contributing causes to the stress that MHNs in Oman endure. Another influence may be the actual setting in which nurses operate including inadequate resources, overcrowded mental health facilities, and patient privacy violations (Al Sabei et al., 2020). Research had shown that inadequate funding and infrastructure in certain Omani healthcare settings added to nurses' discontent (Al Sabei et al., 2020).

In Oman, nurses' experiences are greatly influenced by cultural perspectives on mental health. In certain Omani communities, the stigma associated with mental illness might make it more difficult for nurses to deliver care since patients may feel ashamed or reluctant to ask for assistance. Due to the historical stigma associated with mental health, MHNs in Oman might also experience emotions of alienation and frustration at work (Al-Khanjari & Al-Abri, 2020).

Problem Statements

Because of the special nature of MHNs' practice, they are the focus of this study specially when studies conducted in Oman on this groups of HCWs are scarce. In contrast to nurses in other disciplines, MHNs must navigate complicated emotional and societal challenges while attending to patients' psychological needs (Al-Adawi et al., 2002). To illustrate, the emotional strain of caring for patients with mental diseases can be unbearable, and MHNs frequently encounter people in crisis. This is in contrast to other nursing disciplines where the main emphasis may be on physical care. For instance, MHNs deal with psychological trauma, such as self-harm and aggressive attacks, which are less common in other nursing areas, but nurses in general medical wards may encounter stress due to physical sickness and medical procedures (Sahraian et al., 2013). Another element that sets the experiences of MHNs apart from those of other nurses was the stigma associated with mental illness (Al Sabei et al., 2020). Both patients and nurses might feel alienated as a result of this stigma (Al Sabei et al., 2020). The cultural stigma associated with mental illness in Oman might make MHNs feel alone in the healthcare system, which could lower their job satisfaction (Al Sabei et al., 2020). Additionally, specialized abilities such as therapeutic communication, crisis response, and a thorough comprehension of psychiatric diseases are necessary for mental health nursing (Al Sabei et al., 2020). It can be distressing to feel pressured to keep up these specific abilities, especially if nurses believe they lack the tools or support they need.

The specific mix of difficulties faced by MHNs, especially in Oman, adds to their job dissatisfaction. High workloads, emotional pressures from patient encounters, organizational shortcomings, and the stigma associated with mental health in society were some of these difficulties (Al-Lawati & Al-Maskari, 2017). These nurses' coping mechanisms, which range from professional support networks to personal resilience, were essential for reducing stress and averting job frustration. Because MHNs' work is specialized and emotionally strenuous, their experiences differ greatly from those of other nurses, which is why they are the focus of this study. Improving these nurses' well-being, job satisfaction, and retention rates requires data-driven insights for supportive relevant policies.

To effectively manage job frustration among nurses, it is required to first identify the underlying factors associated to this phenomenon obtaining data from both general nurses and nursing leaders in Oman mental health setting. In this study, factors such as role clarity, emotional response, self-efficacy, work engagement, management and leadership approach and coping measures were acknowledged as key aspects influencing nurses experience towards occupational frustration. Applying the MARS model, which stands for Motivation, Ability, Role perception, and Situational

factors, provides a robust framework for this analysis (McShane & Von Glinow, 2009) which aids in explaining the multidimensional nature of occupational frustration among nurses in mental health setting.

The evidences indicated that there is reasonable level of anxiety in Oman which is identified as different than other Gulf Corporate Countries (GCC) (Sadriwala & Malik, 2021). Although, there is quick educational and economic development in Oman, but it still reserves its cultural and societal values (Sadriwala & Malik, 2021).

In Oman's mental health hospital, 18% out of 600 total nursing workforces were identified to have mental and physical health problems in year 2018. In addition to this, the process of turnover was very fast especially among senior nursing staff who completed 15 years and above in mental health setting. It was hard to find a nurse more than 15 years' experience in the hospital working in the clinical field. For instance, currently in the mental health hospital there is 11% of the total nurses are senior experienced nurses including non-Omani nationalities. Seniority is defined as those completed 15 years in the field of practice and trained as team leaders. As a result of this fact, the proficiency level was affected in terms of having less expertise staff holding middle- and first-line management positions. This high level of turnover due to job frustration was expected to be present due to lower satisfaction level and stressful work environment. However, this fact was just an estimation requires to be proved with evidences. Therefore, this study was intended to find out the severity of job frustration among general nurses and nursing leaders in mental health setting in Oman. It as well examined the factors related to nursing JF. JF of general nurses and nursing leaders in mental health setting was further explored and highlighted. Data were collected in consideration of the factors associated with the job distress.

Therefore, the main objective of this study is to examin the prevalance, allied factors, implication related to policies of job frustration among mental health nurses in Oman and to develop data-driven perceptions for workplace wellbeing and enhanced mental health of nursing workforce. The sub objectives are as follows:

Examin and compare the level of job frustration among nursing workforce (general nurses and nursig leaders) using Copenhagen Burnout Inventory.

Explore the association between job frustration and demographic factors (age, gender, location or work, years of experience, qualification)

Identify the relationship between job frustration and psychosocial/institutional factors (self-efficacy, work engagement, leadership and coping)

The above sub objectives considered the following hypothesis:

H1: Nuring leaders have higher levels of burnout than general nurses

H2: Higher job frustration among nurses is associated with sociodemographic variables (e.g. younger age, female, dual work responsibilities, limited years of experience and higher qualifications)

H3: Higher job frustration among nurses is associated with psychosocial/institutional vaiables (low self-efficacy, low work engagement, poor leadership support and poor coping skills)

METHOD

It is known that statistics are providing measurable directions towards the current study outcomes. Hence, allowing better support to generalizability of the findings (Creswell et al., 2011). A

descriptive survey approach was done on a wider target population to find out the severity of job frustration among nurses in mental health setting using Copenhagen Burnout Inventory (CBI). In addition to this, other set of scales and questionnaires used to determine the internal and external factors affecting job frustration which were Self-efficacy Scale (SES), Utrecht Work Engagement scale (UWES), Coping Scale (CS) and Conger-Kanungo Questionnaire (CKQ). In addition to this, an additional questionnaire was prepared by the principle investigator which was 6-items demographic data (age, gender, marital status, years of experience, position and qualification). The questionnaire was distributed to the target population available who were all nurses in mental health setting. It was aimed to determine the relationship between the study variables which are job frustration (dependent variable) and factors of the MARS model.

Copenhagen Burnout Inventory

Copenhagen Burnout Inventory (CBI) was considered to measure the burnout level among nurses in mental health setting. It was developed by Kristensen et al. (2005) consisting of 19-items covering three domains which were personal burnout (PB) (6-items), work-related burnout (WB) (7-items) and client-related burnout (CB) (6-items). These domains were focusing on physical and emotional exhaustion of the employee at work setting and while interacting with patients. It was rated on 5-point Likert-scale from 0 'never' to 4 'always'. The scores were rated for all domains as <33 (low), 33-50 (moderate) and >50 (high). The scale was reliable in the current study with the internal consistency of 0.83.

Self-efficacy Scale

Self-Efficacy Scale (SES) was considered to assess the level of belief on oneself and ability to respond to various situations which was developed by Ralf Schwarzer and team (Schwarzer et al, 1994). It was 30-item scale translated from the original German version. Each of these items had four options to respond as rating from 1 'Not at All' to 4 'Exactly true'. Later, the overall scores of all 30-items summed to present total score. The higher the score, the higher self-efficacy was represented. The reliability of the scale was well established with Cronbach alpha score 0.86 in the current study.

Utrecht Work Engagement Scale

Utrecht Work Engagement Scale (UWES) was designed by Schaufeli et al. (2009). It aimed to assess employee engagement. This scale was 17-items categorized under 3 domains (vigour, dedication and absorption) rated from 0 to 6. If the participant had never had the specified feeling it will be rated 0 and if they had the specified feeling from the 17-items it was rated as how often from 1-6 representing the frequency of describing the feeling. This scale focused on three main factors which were employee energy, involvement and efficacy. This questionnaire was opposing the CBI in sense that it focused on the positive aspects of the same items. In the current study, the Cronbach alpha score of 0.96 as overall with sub scores of 0.94, 0.84 and 0.94 for Dedication, Absorption and Vigour dimensions of the scale is reliable.

Conger-Kanungo-Questionnaire

Conger-Kanungo Questionnaire (CKQ) was developed by Jay A. Conger and Rabindra N. Kanungo (Conger et al., 1997). It was 25-items scale focusing on strategic vision, sensitivity to environment, sensitivity to member needs, personal risk, unconventional behaviour and self-centred restricted attitude. The rating of each item had 6 possible ratings which started from 6 indicating 'very characteristic for you' to 1 indicating 'very uncharacteristic for you'. The total selected score was summed and the higher the score indicated the higher charismatic leadership style. The reliability of the scale was tested in the current study with a Cronbach alpha score of 0.76.

Coping Scale

This scale was developed by Hamby et al. (2015) consisted of 13-items questionnaire representing appraisal and behavioural measures of adaptation. The tool was reliable in the current study where coefficient alphas was 0.77. The items were measured on 4 score values where started from 4 indicating 'mostly true about me' to 1 indicating 'not true about me'. The higher the summed score of all items indicated higher adaptation abilities.

Participants and Sample Size

Mental Hospital's nursing administration department were accessed to get data of all nursing staff so as to conduct sampling for the data collection. The information was provided to collect data for the purpose of this study which were total of 350 nurses among which approximately 40 nurses were in management and supervision positions to determine the relationship among variables.

They total nursing workforce (N: 350 nurses) were all selected to be included in the quantitative data collection phase for responding to questionnaire consisted of demographic data and set of validated scales: CBI, GSES, UWES, CKQ and CS. The purpose of including all nurses was to compare the level of job frustration between leaders and non-leaders as well as differences in the factors leading to job frustration between both groups.

Inclusion criteria: All the participants who are available at workplace for a period of 3-4 months and agree to participate.

Exclusion criteria: Participants who were on all kinds of regular leaves such as annual leave, study leave, unpaid leave and maternity leave were excluded from the study.

Data Collection and Procedure

All the participants were selected from the mental health setting in Oman and the study was carried out in their workplace. For the questionnaires, the participation was voluntary where the nurses' readiness to answer the questionnaire set in Microsoft Forms (as online version) was considered as consent to participate. They were explained about having full right to withdraw at any time during data collection phase.

For descriptive survey, set of five questionnaires including 6 items-demographic data: CBI, SES, UWES, CKQ and CS were distributed to the total eligible participants (N: 330 among which are 40 nursing leaders) to determine the severity of burnout as well as to determine the relationship among variables. The response rate was 60.9% where only 201 participants responded out of 330 nurses met the inclusion criteria. The researchers personally worked and supervised data collection process.

Data Analysis

A statistical descriptive analysis of the five scales CBI, GSES, UWES, CKQ and CS including demographic data were done to determine the severity of burnout as well as determined the relationship among dependent variable (JF) in consideration of other co-variables (leadership, self-efficacy, work engagement and coping).

The analysis of the data will highlight testing the hypothesis of this study through multiple linear regression analysis with burnout in form of job frustration (dependent variable) with leadership, self-efficacy, work engagement and coping (independent variables). As well as, correlation analysis was performed to find out bivariate association between the variables. Additionally, ANOVA was performed to find out the significant of the regression model.

Ethical Consideration

Prior ethical approval was obtained from the University Malaysia Sarawak (UNIMAS) Medical Research Ethics Committee (No.: FME/22/65) and the Research Approval Committee at MOH in Oman (No. Moh/CSR/22/25809). Informed consent was considered while the participants agreed to answer the online (Microsoft forms) based questionnaire for the purpose of this study. This study was funded by the Fundamental Research Grant Scheme, Ministry of Higher Education-Malaysia.

RESULTS

Demographic Characteristics

The general demographic characteristics of the participants presented in Table 1. Out of 201 participants, 39% were male and 61% were female with mean age of 33.18. The response rate was 60.9%.

Table 1
General Demographic Characteristics of The Participants at Quantitative Data Collection Phase (N:201)

Characteristics	Staff (N= 201)
Gender	
Male	78 (39%)
Female	122 (61%)
Marital Status	
Married	157 (78.5%)
Divorced	3 (1.5%)
Single	39 (19.5%)
Widowed	1 (0.5%)
Number of Children's	
None	35 (17.5%)
One	48 (24%)
Two	46 (23%)
Three	25 (12.5%)
Four	11 (5.5%)
Five	8 (4%)
Six	5 (2.5%)
Missing data	22 (11%)
Age	
20 - 30 years.	183 (35.7%)
31 - 41 years.	243 (47.4%)
42 - 52 years.	87 (17%)
Years of experience	
Less than 5 years.	43 (21.5%)
6 -15 years.	108 (54%)
Above 15 years.	47 (23.5%)
Qualifications	
MSCs	8 (4%)
BSc	85 (42.5%)
Diploma	66 (33%)
Post Basic Diploma	39 (19.5%)
Position	
Nursing leaders	37 (18.5%)
General nurse	163 (81.5%)
Any Chronic illness?	
Yes	15 (7.5%)
No	185 (92.5%)
Allocation	
Admin	27 (13.5%)
Clinical	173 (86.5%)

Additionally, the sociodemographic characteristics presented in Table 2 comparing the association between the categorical variables (age, gender, marital status, qualification, workplace allocation and years of experience) with the groups of nurses (general nurses and nursing leaders). The findings show that all the variables are statistically significant with the groups of nurses except the marital status supporting hypothesis 1 (H1).

Chi-square result of independence showed significant associations between **age group** and position, $\chi^2(2, N = 153) = 6.72, p = .035$; **gender** and position, $\chi^2(1, N = 200) = 5.76, p = .016$; **qualification** and position, $\chi^2(3, N = 198) = 23.96, p < .001$; **allocation** and position, $\chi^2(1, N = 200) = 48.03, p < .001$; and **years of experience** and position, $\chi^2(2, N = 198) = 22.81, p < .001$. **Marital status**, however, was not significantly associated with position, $\chi^2(3, N = 200) = 5.23, p = .155$. These findings supporting the hypothesis 2 (H2).

Table 2

Chi-Square Test Presenting the Sociodemographic Characteristics by Position and Its Association to Categorical Variables

	Position		Sig.
	Nursing Leaders	General Nurse	
Age			
20 – 30 years	0 (0%)	21 (13.7%)	0.004
31 – 41years	26 (17%)	85 (55.6%)	
42 – 52 years	6 (3.9%)	15 (9.8%)	
Gender			
Male	8 (4%)	70 (35%)	0.016
Female	29 (14.5%)	93 (46.5%)	
Marital Status			
Married	28 (14%)	129 (64.5%)	0.191
Divorced	0 (0%)	3 (1.5%)	
Single	8 (4%)	31 (15.5%)	
Widowed	1 (0.5%)	0 (0%)	
Qualification			
MSC	3 (1.5%)	5 (2.5%)	<0.001
BSC	25 (12.6%)	60 (30.3%)	
Diploma	0 (0%)	66 (33.3%)	
Post Basic Diploma	9 (4.5%)	30 (15.2%)	
Allocation			
Admin	18 (9%)	9 (4.5%)	<0.001
Clinical	19 (9.5%)	154 (77%)	
Years of experience			
Less than 5 years	1 (0.5%)	42 (21.2%)	<0.001
6 - 15 Years	17 (8.6%)	91 (46%)	
Above 15 years	19 (9.6%)	28 (14.1%)	

Statistical Analysis

The mean, standard deviation (SD) and total score (sum) for each scale and subscale were calculated and presented in Table 3. The scores suggesting overall moderate levels of self-efficacy, work engagement, leadership perception and use of coping strategies among participants. The burnout scoring is showing more prominent symptoms in both work and client domains.

Table 3

Mean, SD and Sum of The Study Variables (N=201)

Categories	Mean	SD	Interpretation
Self-Efficiency			
General Self-Efficiency	3.22	0.59	Average confidence
Social Self-Efficiency	4.53	0.59	High confidence
Work Engagement			
Vigour	3.69	1.91	Healthy engagement
Dedication	3.07	1.47	Moderate engagement
Absorption	3.34	1.69	moderate to high engagement
Leadership	3.48	0.78	positive perception
Coping	2.82	0.67	slightly above average use
CBI			
Personal Related	1.64	0.78	low burnout
Work Related	1.98	0.71	low to moderate burnout
Client Related	4.67	0.89	high burnout

Factors Predicted Burnout

A multiple linear regression analysis was conducted to examine the extent to which self-efficacy, work engagement, leadership and coping predicted burnout. ANOVA results indicated that the overall regression model significantly predicted burnout (dependant variable), $F(4, 196) =$

66794.541, $p < 0.001$. The model explained 99% of the variance in burnout (dependent variable), $R^2 = 0.999$, adjusted $R^2 = 0.999$. Examination of individual predictors showed that self-efficacy ($\beta = 0.23$, $p < 0.001$) and work engagement ($\beta = -0.21$, $p < 0.001$) significantly contributed to the model, while leadership ($\beta = 0.16$, $p = 0.19$) and coping ($\beta = 0.31$, $p = 0.24$) did not -Table 5. These results suggest that the higher the self-efficacy and work engagement of an employee the lower is the level of burnout, supporting hypothesis 3 (H3).

Table 5

Multiple Linear Regression Analysis of Leadership, Coping, Self-Efficacy, and Work Engagement as Predictors of Burnout (CBI)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.008	.970		.009	.993		
Leadership	.164	.069	.387	2.367	.019	.000	7149.124
Coping	.313	.137	.310	2.276	.024	.000	4951.994
Self-efficacy	.231	.056	.631	4.115	<.001	.000	6281.693
Work Engagement	-.212	.044	-.328	-4.839	<.001	.001	1228.947

a. Dependent Variable: CBI

Factor Predicted Domain-Wise Burnout

Personal-Related Domain

A multiple linear regression analysis was conducted to examine the extent to which self-efficacy, work engagement, leadership and coping predicted burnout at a personal-related domain (CBI). ANOVA results indicated that the overall regression model significantly predicted burnout at a personal-related domain (CBI) (dependant variable), $F(4, 196) = 42186.416$, $p < 0.001$. The model explained 99% of the variance in burnout at a personal-related domain (CBI) (dependent variable), $R^2 = 0.999$, adjusted $R^2 = 0.999$. Examination of individual predictors showed that self-efficacy ($\beta = 0.06$, $p < 0.001$) and work engagement ($\beta = -0.05$, $p < 0.001$) and coping ($\beta = 0.14$, $p = 0.003$) significantly contributed to the model, while leadership ($\beta = 0.01$, $p = 0.47$) did not -Table 6. These results suggest that the higher the self-efficacy and work engagement of an employee the lower is the level of burnout at a personal-related domain (CBI).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.002	.331		.006	.996		
Leadership	.017	.024	.148	.720	.472	.000	7149.124
Coping	.142	.047	.520	3.035	.003	.000	4951.994
Self-efficacy	.066	.019	.660	3.423	<.001	.000	6281.693
Work Engagement	-.058	.015	-.329	-3.853	<.001	.001	1228.947

a. Dependent Variable: Personal related

Table 6

Multiple Linear Regression Analysis of Leadership, Coping, Self-efficacy, and Work Engagement as Predictors of Burnout (CBI) Domain (Personal-Related)

Work-Related Domain

A multiple linear regression analysis was conducted to examine the extent to which self-efficacy, work engagement, leadership and coping predicted burnout at a work-related domain (CBI). ANOVA results indicated that the overall regression model significantly predicted burnout at a work-related domain (CBI) (dependant variable), $F(4, 196) = 73424.190$, $p < 0.001$. The model explained 99% of the variance in burnout at a work-related domain (CBI) (dependent variable), $R^2 = 0.999$, adjusted $R^2 = 0.999$. Examination of individual predictors showed that coping ($\beta = 0.16$, $p < 0.001$), self-efficacy ($\beta = 0.08$, $p < 0.001$) and work engagement ($\beta = -0.75$, $p < 0.001$) significantly contributed to the model, while leadership ($\beta = 0.04$, $p = 0.06$) did not -Table 7. These results suggest that the higher the coping abilities, self-efficacy and work engagement of an employee the lower is the level of burnout at a work-related domain (CBI).

Table 7

Multiple Linear Regression Analysis of Leadership, Coping, Self-efficacy, and Work Engagement as Predictors of Burnout (CBI) Domain (Work-Related)

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	.003	.357			.008	.994		
Leadership	.048	.025	.294		1.882	.061	.000	7149.124
Coping	.169	.050	.435		3.353	<.001	.000	4951.994
Self-efficacy	.081	.021	.571		3.908	<.001	.000	6281.693
Work Engagement	-.075-	.016	-.301-		-4.647-	<.001	.001	1228.947

a. Dependent Variable: work related

Client-Related Domain

A multiple linear regression analysis was conducted to examine the extent to which self-efficacy, work engagement, leadership and coping predicted burnout at a client-related domain (CBI). ANOVA results indicated that the overall regression model significantly predicted burnout at a client-related domain (CBI) (dependant variable), $F(4, 196) = 45457.427$, $p < 0.001$. The model explained 99% of the variance in burnout at a client-related domain (CBI) (dependent variable), $R^2 = 0.999$, adjusted $R^2 = 0.999$. Examination of individual predictors showed that leadership ($\beta = 0.09$, $p < 0.001$), self-efficacy ($\beta = 0.08$, $p < 0.001$) and work engagement ($\beta = -0.07$, $p < 0.001$) significantly contributed to the model, while coping ($\beta = 0.001$, $p = 0.98$) did not -Table 8. These results suggest that the higher the available supportive leadership, self-efficacy and work engagement of an employee the lower is the level of burnout at a client-related domain (CBI).

Table 8

Multiple Linear Regression Analysis of Leadership, Coping, Self-efficacy, and Work Engagement as Predictors of Burnout (CBI) Domain (Client-Related)

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	.004	.403			.010	.992		
Leadership	.099	.029	.681		3.438	<.001	.000	7149.124
Coping	.001	.057	.002		.014	.989	.000	4951.994
Self-efficacy	.085	.023	.674		3.629	<.001	.000	6281.693
Work Engagement	-.079-	.018	-.358-		-4.362-	<.001	.001	1228.947

a. Dependent Variable: Client related

Nursing Sample Group Level Comparison

To compare the both groups of nurses (nursing leaders and general nurses), an independent sample t-test was conducted as presented in Table 9. The score of General Self-Efficacy was significant among general nurses [Mean = 59.44, SD = 14.25] in comparison to leaders' group [Mean = 56.92, SD = 19.05]. Additionally, the scores of client-related burnouts, coping and overall self-efficacy were slightly higher among general nurses but at descriptive perspective were not significant.

In contrary, higher mean score were traced among leaders' group in overall work engagement, absorption, vigour, and overall CBI score [$M = 40.24$ vs. 34.36] where personal and work-related burnout domains shown highest mean difference.

Table 9
Mean and SD of Nursing Leaders and General Nurses in Relation to Study Variables

	Position	Mean	Std. Deviation
Score General Self-efficacy	Nursing leaders	56.92	19.050
	General nurse	59.44	14.245
Score Social Self-efficacy	Nursing leaders	37.32	13.151
	General nurse	38.06	9.311
Self-efficacy	Nursing leaders	94.24	29.999
	General nurse	97.49	19.412
Dedication Score	Nursing leaders	18.54	9.230
	General nurse	17.55	10.219
Absorption Score	Nursing leaders	16.11	7.483
	General nurse	14.40	7.846
Vigour Score	Nursing leaders	22.97	10.707
	General nurse	22.26	12.937
Work engagement	Nursing leaders	57.62	26.946
	General nurse	54.21	29.992
Leadership	Nursing leaders	83.65	31.075
	General nurse	83.89	22.061
Coping Score	Nursing leaders	32.86	11.341
	General nurse	35.64	10.638
Personal related	Nursing leaders	11.84	4.833
	General nurse	9.12	4.625
work related	Nursing leaders	15.05	5.517
	General nurse	13.35	5.097
Client related	Nursing leaders	13.35	6.961
	General nurse	11.89	5.050
Copenhagen burnout inventory	Nursing leaders	40.24	16.103
	General nurse	34.36	12.825

An independent sample t-test was conducted among both groups of nurses (nursing leaders and general nurses) to find out the differences on the identified variables. The findings indicated that nursing leaders presented significantly higher overall burnout [$M = 40.24$] than general nurses [$M = 34.36$], $t(198) = 2.40$, $p = .018$. Similarly, nursing leaders had significantly high personal-related burnout score [$M = 11.84$, $SD = 4.83$] than general nurses [$M = 9.12$, $SD = 4.63$], $t(198) = 3.20$, $p = .002$. These findings supporting the H1 of this study.

In contrast, there was no significant variance in self-efficacy, work engagement, coping and leadership score among both groups of nurses. The general nurses presented higher coping scores [$M = 35.64$, $SD = 10.63$] than nursing leaders [$M = 32.86$, $SD = 11.34$], however, it was not statistically significant $t(198)$, $p = .158$.

DISCUSSION

This cross-sectional study intended to examine the prevalence of job frustration, associated variables and related policy implications among both groups of nurses (general nurses and nursing leaders) working in mental health setting in Oman. The findings provided a data-driven evidences for improving workplace environment as per the objectives of this study.

Group-Wise Job Frustration Prevalence

This study supports the global evidences in significantly finding that nurses have moderate to high burnout and nursing leaders' burnout is higher than general nursing working in mental health setting. Nursing leaders job frustration is mainly poured in the context of personal and work-related domains of the overall emotional exhaustion whereas general nurses had shown lower overall frustration due to the limited involvement in managerial responsibilities although having high clinical workload. These interpretations mirror the global evidences of unspoken stressors of leaders indicating the need toward leadership-related interferences. In Oman, the leaders find it difficult to speak up about stressors due to fear of being blamed or may affect their stability in their position.

Sociodemographic Variables Association

The socio-demographic variables (age, gender, professional qualification, workplace allocation and length of experience) showed a significant association toward job frustration except marital status. The younger nurses with less years of experience presented higher frustration explained in their lack of coping skills and self-efficacy. Female nurses regardless of their marital status have higher frustration due to dual responsibilities towards professional demands and societal commitments which is common in Omani culture. Additionally, nurses who have higher qualification indicated frustration towards limited career growth and promotional opportunities. Moreover, place of work (clinical or administration) both has its own focused pressure. To illustrated, leaders are pressured from workplace bureaucracy and task accountabilities whereas general nurses pressured towards loaded expectation for patient care. The socio-demographic factors have critical influence over occupational frustration leading to potential burnout and turnover.

Psychosocial and Organizational Variables Predictors

The findings of the regression analysis demonstrated significant association of self-efficacy and work-engagement as a protective factor to job frustration while leadership and coping measures represented domain-related influence. Nurses who presented higher engagement at work tasks showed higher confidence and motivation. The overall coping strategies showed higher effect on personal and work-related domain of burnout with variations in impact highlighting the need for

developing data-driven adaptive coping guidelines. Unexpectedly, leadership effect was inconsistent however influential where it did not show significant effect on personal and work-related domain whereas it was protective toward client-related burnout. This suggests that authentic leadership approach and reciprocal approach helps nurses harmonize with the work and personal related stressors as well as meet the challenges towards client-care. This implies that leadership alone is not sufficient to manage occupational frustration unless it is coordinated with adaptive coping skills, personal efforts of having intrinsic self-efficacy and supportive environment for being engaged in decision-making.

However, until today, the healthcare work environments are not free from coercion and discrimination as per the findings of this study within Oman's mental health setting contradicting the WHO's principles to achieve by 2030 (WHO, 2016). However, the findings of this study can be utilized to move towards providing a safe and decent work environment through policy development and allegations.

The emotional well being of nurses in Oman is under high risk for long-term effects of burnout which is believed to affect their self-efficacy as per global evidences as consequence (Henrich et al., 2017; Mudallal et al., 2017). The healthcare services in Oman is under development phase where both groups of nurses' experience job insecurity of being re-allocated. This is evidenced to cause emotional exhaustion as per local evidences (Al-Khanjari & Al-Abri, 2020) counter supported with the findings of the current study. Therefore, the data obtained from this study may intend to support the overall practice and management system through policy development and allegations.

Limitation

Despite the significant insights and findings were addressed in this study, there are notable limitations acknowledged. Firstly, the study was cohort specific which was conducted in mental health setting among nursing professions only. Therefore, the sample representativeness issue arises limiting the generalizability to other healthcare team specialties or even other nursing specialties. A broader group of participants may be considered to improve applicability through cross-validation in different setting or group of HCWs with more sample size. Secondly, response bias may possibly be introduced due to the frequent encouragement from the researchers and data collectors to the participants to respond resulting in potential skewness of the findings. Thirdly, cultural inspiration affecting the response specially within the Arab cultural background where challenges are mostly underreported and may lead to social desirability bias. It is recommended to consider other data collection approaches such as anonymous one-to-one interview.

Recommendation

About the findings, all the data needs to be considered to drive policies, interventions, guidelines and practices. It is recommended that leaders need to match roles with qualifications and avoid personal partialities among subordinates. Additionally, to enhance efforts to improve employee engagement in decision-making or even prior notification before implementation (Khadhour, 2018). Similarly, attempts to criticize actions or behaviors need to be constructive with a reflective and positive reciprocal approach. Leaders should consider psychological debriefing not merely technical work-related issues avoiding one-way commands. Furthermore, a clear path to problem resolution has to be followed for a harmonious work environment. A culture of no blame should

be emphasized ensuring a secure workplace. A well-defined work engagement practice enhances responsiveness and commitment levels which will ultimately improve the retention process.

In addition, it is recommended to reduce working hours or even introduce flexible working time to reduce emotional frustration (Shanafelt et al., 2016). This is considered a sort of reward for the effort invested by healthcare workers. Healthcare managers play a great role in setting strategies to help nurses meet both work and personal life demands to minimize turnover rate. In alignment with the latest technological advancements, it is found that tele-interactive learning sessions regarding clinical management issues had significantly enhanced self-efficacy (Kim & Suh, 2018). Therefore, it is important to enhance employee self-efficacy by allowing time for practising hobbies and personal life activities. Balancing the work requirement with the personally requested duties of the staff is a path towards staff satisfaction.

Moreover, Cox (2016) emphasized that setting standards and training opportunities through an evidence-based approach to the workforce is the core focus for enhancing their scope of practice. This will lead to having a positive view of oneself and then the overall profession, thus reducing work-related frustration. This fact is supported by better determination, clarity and perception of the roles of nursing leaders in mental health settings.

An appropriate system of feedback and reward is important to be activated in a manner that is directive for future actions as well as motivation for good performance. There are several environmental factors supporting the continuum of individual frustration. In addition, top managers and policymakers adopt a set of strategies and modalities to improve the work environment and tackle losing experienced nurses through mainly improving nursing leadership competencies such as decision making and empowerment (Hayward et al., 2016; Mudallal et al., 2017). Evidences suggested nurse manager to support a transparent and respectful work environment (Diab & Mohamed, 2020). This approach will further enhance breaking down the silence behaviour of nurses.

Additionally, a flexible leadership approach and rotation policy manages the levels of tiredness and occupational risks among employees which in turn increased the degree of reported wellbeing among them (Sebastiano et al., 2017). Similarly, evidence on the mental health workforce including nurses showed that healthcare institutions need to develop leaders' 'soft skills' in addition to their practical skills to support courteousness in the work environment (Yanchus et al., 2017). In considering the mental health setting, soft skills of leaders such as empathy, empowerment and communication skills are basic requirements to avoid frustration among the team on the first level. In terms of supporting better communication as a soft skill of any leader in a mental health setting, it is crucial to meet healthcare workers' satisfaction to aid institutional steadiness and ensure patient safety (Vemeir et al., 2017). This would be achieved through adopting an institutional wide data-driven prevention and intervention program which targets optimizing various measures of interpersonal and professional communication approach. In addition, it is recommended that a combination of both transformational and transactional leadership styles will ultimately reduce the level of nursing job frustration and burnout (Ebrahimzade et. al., 2015). This is because these styles of leadership in combination will act to boost creativity, enhance motivation and strengthen work collaboration. Finally, while the above slight differences in the findings suggest varying experiences across roles (general nurses and nursing leaders), formal significance testing (Levene's test and p-values) should be integrated in future comparative analysis.

Implications

In an effort of scholars' previous recommendation in similar studies in Oman on private sectors (Khadhuri, 2018; Durrah, 2020; Durrah et al., 2023), this study was conducted to find out the differences and similarities in concern to internal and external factors to job frustration particularly self-efficacy, leadership, work environment and engagement among Omanis.

Overall, workplace environment-related issues and reciprocal approaches are the backbone of organizations' integrity. Therefore, concerning to mental health hospitals, some policy allegations were highlighted in this study. The scope of practice of nurses working in the mental health field needs revision. To protect the personal lives of individuals from work-related obligations, it is required to design a clear guide to prioritize tasks according to immediacy and urgency as well as after-duty approach. It is essential to set criteria for reward as a system to acknowledge. Likewise, the policymakers need to revise the financial allowances for those who are holding extra responsibilities i.e. management. Moreover, to achieve workload balance, it is indicated to foster a culture of re-allocation of staff from acute wards to rehabilitation wards. Overall, unnecessary policies need to be merged, deleted and clarified. For the expatriate workforce, the national level guide should be in place for prior notification of the possibilities of termination due to Omanization within not less than six months. As well as, the findings of this study will help in developing future management strategies to overcome increasing levels of burnout due to job frustration.

CONCLUSION

Indeed, as among the rare studies conducted in Oman's mental healthcare setting addressing employee job frustration it can build the basis for further knowledge in this area of research. In Oman, mental health nurses face serious issues of job frustration due to lack of role clarity and engagement, adaptive coping skills, leadership approach and low self-efficacy. This cross-sectional study findings indicated that the work engagement and self-efficacy had a protective effect on job frustration. Whereas, leadership presented inconsistency in influencing frustration described as domain sensitive effect where it has protection in clinet-related domain. Therefore, leadership practices focusing on resiliency, accessibility, reciprocity of approach and cultural awareness guidance is emphasized.

This study highlights the job frustration as not being merely an individual issue, it is as well an organizational level challenge. Therefore, adaptive coping on both personal (self awareness, self regulation, withdrawal) and organizational (no-blame culture, safety and security, promotional and career developmental opportunities and supportive leadership) level interventions are required. By considering these aspects, this study provides insights based on data obtained for managers, policymakers and researchers towards the employee welfare measure. Consequently, the Omani mental healthcare system is forstered towards resilient, transparaent and reformed workplace environment for better retention and satisfaction.

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135-112

**RESEARCH PROTOCOL: DEVELOPMENT AND PSYCHOMETRIC VALIDATION
OF THE MALAY MALE STIGMA IN INFERTILITY QUESTIONNAIRE (MSI-Q) AND
ITS PSYCHOSOCIAL ASSOCIATIONS**

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ABSTRACT

Introduction: Infertility affects one in six individuals globally, with male factors contributing to nearly half of cases. In Malaysia, declining fertility rates intersect with limited attention to men's reproductive health. Male infertility is often accompanied by stigma, shaped by cultural ideals of masculinity and fatherhood, which may undermine self-esteem, deter help-seeking, and erode social support. Despite its significance, no validated Malay-language instrument currently exists to measure infertility-related stigma among men.

Methods: This sequential exploratory mixed methods study will develop and validate the Malay version of the *Male Stigma in Infertility Questionnaire (MSI-Q)* and examine its psychosocial associations. In Phase 1, interpretative phenomenological analysis will be employed through semi-structured interviews with infertile men at two infertility clinics (LPPKN and UMMC). Healthcare professionals, stakeholders, and community representatives will also be engaged to identify relevant stigma domains. Approximately 5–20 interviews will be conducted until thematic saturation is reached. In Phase 2, development and validation of MSI-Q among ≥ 300 men will be conducted, using internal consistency, test–retest reliability, and factor analysis. In Phase 3, the validated MSI-Q will be applied in a cross-sectional study of 137 infertile men, together with the Rosenberg Self-Esteem Scale and the Multidimensional Scale of Perceived Social Support, with multivariable regression used to examine associations.

Expected Results: The MSI-Q is anticipated to comprise approximately 20 items across five domains: individual, interpersonal, institutional, societal, and structural. Validation analyses are

expected to demonstrate robust psychometric properties, and it is hypothesised that higher stigma scores will be significantly associated with lower self-esteem and reduced perceived social support.

Discussion: The MSI-Q will represent the first validated tool to measure infertility-related stigma among Malaysian men. It will provide critical insights for clinicians, researchers, and policymakers to create awareness and design stigma-sensitive fertility services. Findings will also inform the integration of psychosocial screening into infertility care and support national strategies addressing low fertility trends, men's mental health, and family well-being.

Conclusion: This study will address a key measurement gap by developing a culturally grounded tool to assess male infertility stigma. The MSI-Q will guide targeted interventions and policy reforms to reduce stigma, strengthen male engagement in reproductive health, and promote population resilience.

Keywords: Male Infertility, Stigma; Self-Esteem, Social Support, Psychometric Validation.

INTRODUCTION

Infertility, defined by the World Health Organization (WHO) as the inability to achieve a clinical pregnancy after 12 months of regular, unprotected intercourse, is a global health concern with profound clinical, social, and psychological implications (World Health Organization, 2019). Current estimates suggest that approximately one in six individuals will experience infertility during their reproductive lifespan, affecting an estimated 186 million people worldwide (World Health Organization, 2023). Male factors contribute to nearly 40–50% of cases, either as the sole cause or in combination with female factors (Thonneau et al., 1991). Despite this substantial burden, infertility research and interventions have historically concentrated on women, leaving men underrepresented and underserved in both clinical care and academic discourse (Agarwal et al., 2015).

In Malaysia, infertility intersects with demographic shifts of national concern. The country's total fertility rate (TFR) has declined steeply over the past five decades, from 4.9 children per woman in 1970 to 1.7 in 2023, falling below the replacement level of 2.1 (Department of Statistics Malaysia, 2024). This decline reflects complex socio-economic transitions, including delayed marriage, urbanisation, increased female labour force participation, and changing social aspirations (Pourreza et al., 2021). However, infertility also contributes to low fertility rates, yet remains insufficiently acknowledged in policy and research agendas. For men, infertility carries a particularly heavy cultural weight. In many Malaysian communities, masculinity and social identity are closely tied to fatherhood, lineage, and the ability to reproduce (Sunway Fertility Centre, 2024). Male infertility thus challenges core aspects of identity, often leading to silence, stigma, and psychosocial distress.

Stigma is a social process by which individuals are devalued, marginalised, or excluded on the basis of an undesirable condition or attribute (Goffman, 1963). In the context of infertility, stigma can manifest at multiple levels: internalised shame, interpersonal judgement, institutional neglect,

societal stereotypes, and structural inequities. For men, infertility-related stigma is often intertwined with ideals of masculinity, resulting in perceptions of diminished virility, weakness, or inadequacy (Pakpahan et al., 2023; Wu et al., 2023). Studies suggest that men facing infertility are at risk of low self-esteem, marital strain, social isolation, and reluctance to seek timely medical care (Dooley et al., 2014; Joja et al., 2015; Pakpahan et al., 2023). In Malaysia, where public discourse on reproductive health remains limited, these challenges are compounded by cultural taboos, lack of open discussion, and insufficient psychosocial support (Kiani et al., 2023; Muhamad et al., 2019).

Although several instruments have been developed internationally to measure infertility stigma, most have been designed for women. The Infertility Stigma Scale (ISS) and the Infertility Stigma Instrument–Female (ISI-F) were both validated among women, with a focus on their reproductive and social experiences (Fu et al., 2015; Taebi et al., 2020). The more recent Male Infertility Stigma Scale (MISS), developed in China, represents progress in addressing male perspectives but remains culturally specific and has not been validated for the Malaysian population (Zou et al., 2023). The absence of a locally adapted, psychometrically validated Malay-language tool to measure male infertility stigma represents a critical gap. Without such an instrument, it is difficult to quantify the psychosocial burden, identify at-risk individuals, or design effective, evidence-based interventions.

Self-esteem, defined as the overall evaluation of one's self-worth, is often undermined in the experience of infertility stigma. For men, infertility challenges traditional notions of masculinity and virility, leading to feelings of shame, inadequacy, and diminished confidence in family and social roles (Dooley et al., 2014). Lower self-esteem has been linked to greater vulnerability to psychological distress, including depression, anxiety, and marital strain (Biggs et al., 2024; Fisher & Hammarberg, 2011).

Social support, by contrast, serves as a protective buffer against the negative effects of stigma. It encompasses the emotional, informational, and practical resources provided by family, friends, and significant others (Zimet et al., 1988). Supportive relationships can mitigate stigma by affirming self-worth and providing coping resources, while lack of support or negative responses may intensify feelings of isolation and exclusion (Mikkelsen et al., 2013).

Taken together, self-esteem and social support represent key pathways through which stigma influences men's psychological well-being. Investigating these constructs in the Malaysian context is crucial, as cultural norms often discourage men from discussing infertility openly or seeking emotional support. Understanding these dynamics will provide valuable insights for designing stigma-sensitive reproductive health interventions.

Study Aim and Objectives

This study will address this gap by developing and validating the Male Stigma in Infertility Questionnaire (MSI-Q) in the Malay language and examining the association between infertility-

related stigma, perceived social support, and self-esteem among infertile men attending infertility clinics in Klang Valley.

The specific objectives of the study are:

1. To explore and identify the underlying domains and constructs of infertility-related stigma experienced by infertile men.
2. To develop and psychometrically validate the Malay version of the Male Stigma in Infertility Questionnaire (MSI-Q) among infertile men attending infertility clinics in Klang Valley.
3. To determine the associations between infertility-related stigma, perceived social support, and self-esteem among infertile men attending infertility clinics in Klang Valley.

METHODS

Study Design

This study will employ a sequential exploratory mixed methods design, integrating qualitative and quantitative approaches in three phases. The design is appropriate for scale development as it allows qualitative insights to inform instrument generation, followed by quantitative validation and testing. This mixed methods approach will ensure that the Male Stigma in Infertility Questionnaire (MSI-Q) is culturally relevant, psychometrically robust, and applicable to Malaysian men.

Study Setting

The study will be conducted at two major infertility service providers in Malaysia: the National Population and Family Development Board (LPPKN) clinics and the University Malaya Medical Centre (UMMC). These centres were selected for their diverse patient populations, which represent both public sector service users and tertiary-level academic medical care. In addition, input will be obtained from healthcare professionals, stakeholders, and community representatives engaged in reproductive health to ensure broad cultural and contextual relevance.

Study Population and Sampling

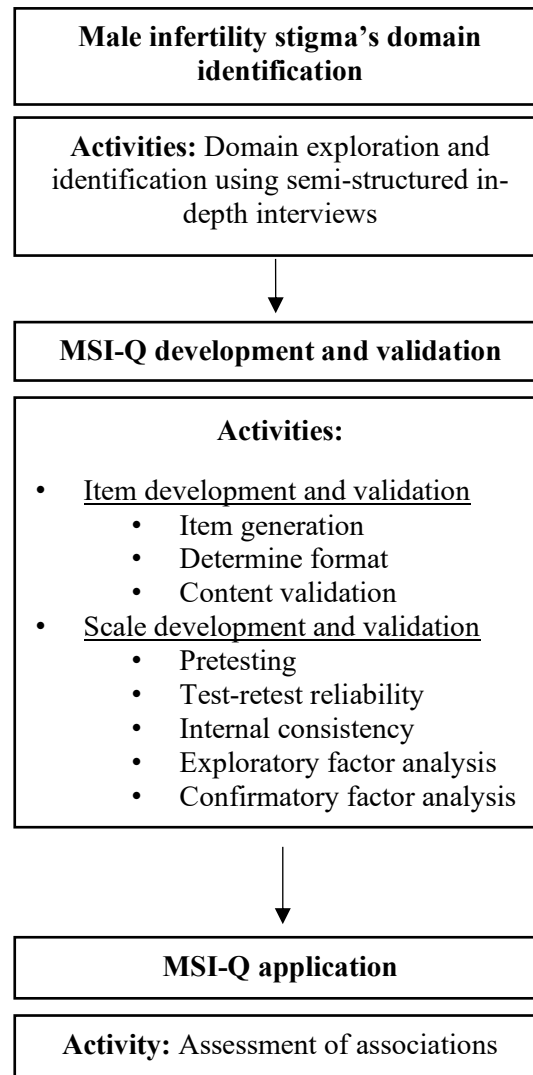
Participants will be selected using purposive sampling, with the inclusion criteria for this group being: (i) Malaysian men aged 18 to 49 years old, (ii) diagnosed with male-factor or unexplained infertility by a clinician, (iii) receiving or having received care at either clinic, and (iv) able to speak and read in Malay. Men with known psychiatric illness, cognitive impairment, or communication difficulties will be excluded.

Sample Size

- **Phase 1 (Qualitative):** Approximately 5–20 infertile men will be recruited until thematic saturation is reached. Additional input will be sought from 5–10 healthcare professionals and community representatives.
- **Phase 2 (Instrument Development and Validation):** A sample of at least 300 infertile men will be recruited, which meets recommended ratios of 5–10 participants per item for exploratory and confirmatory factor analysis.
- **Phase 3 (Cross-sectional Application):** A sample of approximately 137 infertile men will be recruited to examine associations between MSI-Q scores, self-esteem, and social support, guided by power calculations for multivariable regression.

Study Phases

This study will be implemented in three phases, each strategically designed to build upon the findings of the preceding phase. The integration of these phases will ensure conceptual continuity and methodological coherence, allowing for a comprehensive investigation of infertility-related stigma among men. Figure below summarises the integration of study phases.



Phase 1: Qualitative Exploration

Semi-structured interviews will be conducted with infertile men at LPPKN and UMMC. An interpretative phenomenological analysis (IPA) approach will capture the lived experiences of stigma and infertility. Interview guides will explore emotional responses, family and community interactions, healthcare experiences, and perceived cultural meanings. Data will be transcribed verbatim, translated where necessary, and analysed thematically using NVivo software. Findings will inform the generation of culturally grounded questionnaire items.

Stakeholder engagement will include in-depth interviews with healthcare providers (e.g., gynaecologists, counsellors, nurses), policymakers, and representatives from reproductive health NGOs to ensure content reflects diverse perspectives.

Phase 2: Instrument Development and Psychometric Validation

Item development and validation

This phase will start with item generation. The potential items will be generated from Phase 1 findings, literature review, and existing stigma instruments. Items will be developed for the Male Stigma in Infertility Questionnaire (MSI-Q) and reviewed for cultural appropriateness. Format determination will be done by discussing with the research team members and the expert team. Then it will continue with content validation. A panel of experts in reproductive health, psychology, and men's health will assess the psychometric properties of the items using the Content Validity Index (CVI).

Scale development and validation

A draft item will be piloted, including cognitive debriefing and face validity assessment, and will involve 10 to 15 infertile men to evaluate comprehension of MSI-Q. For reliability and internal consistency testing, a sample of at least 60 participants is considered acceptable for reliability assessment, consistent with COSMIN recommendations. Then, the draft MSI-Q will be administered to ≥ 300 infertile men to assess its psychometric analysis using the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

Phase 3: Cross-sectional Application

The validated MSI-Q will be applied in a cross-sectional study of 137 infertile men. Participants will also complete the Rosenberg Self-Esteem Scale (RSES) and the Multidimensional Scale of Perceived Social Support (MSPSS). Sociodemographic and clinical data, including age, marital status, education, occupation, duration of infertility, and treatment history, will be collected.

Data Analysis

- **Qualitative (Phase 1):** Thematic analysis guided by IPA. Findings will be triangulated with stakeholder input.
- **Quantitative (Phases 2–3):**
 - EFA and CFA will be conducted using SPSS and AMOS.
 - Reliability indices calculated for each domain.
 - Regression analyses in Phase 3 to examine associations between MSI-Q scores, self-esteem, and social support. Potential confounders (e.g., age, education, income, duration of infertility) will be adjusted for in multivariable models.

Ethical Considerations

Ethical approval will be sought from the Universiti Malaya Medical Centre Research Ethics Committee (UMMC-REC) and the LPPKN Ethics Board. Participation will be voluntary, with informed consent obtained prior to enrolment. Data will be de-identified to maintain confidentiality, and sensitive topics will be handled with empathy. Participants identified with significant psychological distress will be referred to counselling services at the respective clinics.

EXPECTED RESULTS

The Male Stigma in Infertility Questionnaire (MSI-Q) is expected to demonstrate strong psychometric properties, confirming its reliability and validity as an instrument for assessing infertility-related stigma among Malaysian men. The final version of the MSI-Q is anticipated to consist of approximately 20 items derived from the qualitative findings in Phase 1 and refined through expert content validation. These items are expected to load onto five major domains representing the multidimensional nature of stigma: individual, interpersonal, institutional, societal, and structural.

The individual domain will capture internalised stigma, including feelings of shame, loss of masculinity, and diminished self-worth. The interpersonal domain is expected to reflect social dynamics such as fear of disclosure, avoidance, and adverse reactions from family members or peers. The institutional domain will encompass perceptions of inadequate or dismissive treatment within healthcare settings, while the societal domain will represent broader cultural stereotypes and public labelling. Lastly, the structural domain is expected to highlight systemic and policy-level factors, such as lack of institutional support, workplace discrimination, or the absence of explicit policy recognition of male infertility.

Psychometric validation is expected to demonstrate that the MSI-Q possesses high internal consistency, with Cronbach's alpha coefficients of 0.80 or greater for the total scale, and acceptable values of 0.70 or higher for each subscale. Test-retest reliability, assessed over a two-week interval among a subsample of respondents, is anticipated to yield an Intraclass Correlation Coefficient (ICC) of at least 0.80, indicating strong stability of responses over time. Exploratory Factor Analysis (EFA) is expected to reveal a clear five-factor structure with item loadings exceeding 0.40, while Confirmatory Factor Analysis (CFA) is projected to confirm satisfactory model fit, demonstrated by fit indices such as RMSEA below 0.08, and CFI and TLI values exceeding 0.90. The chi-square to degrees of freedom ratio (χ^2/df) is also anticipated to fall below 3.0, further supporting the model's adequacy.

In Phase 3, regression analyses are expected to demonstrate significant associations between infertility stigma and key psychosocial variables. Specifically, higher stigma scores measured by the MSI-Q are anticipated to be associated with lower self-esteem, as measured by the Rosenberg Self-Esteem Scale, and with reduced perceived social support, as measured by the Multidimensional Scale of Perceived Social Support. These associations are expected to remain significant even after adjusting for sociodemographic and clinical factors such as age, education,

and duration of infertility. The results will reinforce the hypothesis that infertility stigma negatively affects men's psychological well-being and social connectedness, underscoring the need for comprehensive, stigma-sensitive reproductive health interventions in Malaysia.

DISCUSSION

The proposed study is expected to generate the first validated Malay-language instrument to measure male infertility stigma. By developing and testing the Male Stigma in Infertility Questionnaire (MSI-Q), the study will fill a critical measurement gap in Malaysia, where men's reproductive health has historically been underrepresented in both research and policy. While instruments such as the Infertility Stigma Scale (ISS) and the Infertility Stigma Instrument–Female (ISI-F) have advanced understanding of stigma in women, there remains limited cross-cultural work focusing on men. The MSI-Q will contribute to the growing but still emerging body of literature on male infertility stigma. Its validation in the Malay language adds an important perspective from Southeast Asia, expanding the global dialogue beyond predominantly Western or East Asian contexts. The methodological approach, combining phenomenological inquiry, psychometric validation, and examination of psychosocial associations, also provides a model for future scale development in other cultural settings.

The MSI-Q will provide clinicians with a standardised tool to identify men experiencing infertility-related stigma, enabling psychosocial needs to be systematically assessed in fertility clinics. Routine use of the instrument may help normalise discussions about men's emotional well-being in clinical consultations, reducing the tendency for infertility to be framed solely as a female problem. This could encourage earlier disclosure, improve patient–provider communication, and facilitate timely referral for counselling or peer support services. By integrating psychosocial screening into infertility care, fertility clinics can provide a more holistic and patient-centred model of care.

The anticipated findings that higher stigma is associated with lower self-esteem and reduced social support highlight the hidden psychosocial toll of infertility among men. This evidence will strengthen advocacy for targeted mental health interventions tailored to men, including support groups, counselling services, and community-based awareness campaigns. In contexts where masculinity norms discourage emotional disclosure, validated tools such as the MSI-Q can provide an entry point for engaging men in conversations about mental health and resilience.

At the policy level, this study aligns with national concerns about Malaysia's declining fertility rate. Addressing male infertility stigma may support broader strategies to strengthen family formation and reproductive health outcomes. Findings from the study will provide LPPKN, the Ministry of Health, and related stakeholders with empirical data to inform stigma-sensitive policies and programmes. For example, the MSI-Q could be incorporated into population health surveillance, reproductive health surveys, and programme evaluations to monitor trends in stigma and psychosocial well-being among men.

The study also complements Malaysia's commitments under the Sustainable Development Goals (SDG 3: Good Health and Well-being, and SDG 5: Gender Equality) by promoting inclusive reproductive health services and addressing gendered barriers in care (World Health Organization, 2016). By recognising men as active stakeholders in reproductive health, the study contributes to a more equitable and comprehensive approach to sexual and reproductive health and rights (SRHR).

Limitations and Future Directions

As with all research, this study will have limitations. The sample will be recruited from two major clinics (LPPKN and UMMC), which may limit generalisability to men in rural settings or those not seeking formal care. Cultural and religious sensitivities may also influence willingness to disclose experiences of stigma during interviews or questionnaires. To address these challenges, the study will ensure confidentiality, use trained male interviewers where appropriate, and engage community representatives in item development to maximise cultural acceptability.

Future research could expand on this protocol by adapting the MSI-Q for use among different ethnic groups in Malaysia (e.g., Chinese, Indian, and indigenous populations) and by testing its applicability across different languages. Longitudinal studies could also explore how stigma evolves across the treatment journey, from diagnosis to assisted reproductive technologies.

CONCLUSION

This research protocol outlines the development and psychometric validation of the Malay Male Stigma in Infertility Questionnaire (MSI-Q) and its application to explore psychosocial associations among infertile men in Malaysia. By adopting a sequential exploratory mixed methods design, the study will integrate qualitative insights, rigorous scale development, and quantitative testing to generate a culturally grounded and psychometrically robust instrument.

The MSI-Q will address a critical measurement gap, providing the first validated tool for systematically assessing infertility-related stigma among Malaysian men. Its application is expected to demonstrate that higher stigma is associated with lower self-esteem and diminished social support, highlighting the significant but under-recognised psychosocial consequences of male infertility.

Beyond its methodological contributions, the study has important implications for clinical practice, where the MSI-Q can serve as a screening tool to guide stigma-sensitive counselling and holistic care. At the policy level, findings will support national reproductive health strategies, inform interventions to reduce stigma, and strengthen efforts to address Malaysia's declining fertility trends. The instrument may also be adapted for broader use in Southeast Asia, contributing to global research on men's reproductive health.

In conclusion, this study will not only advance academic knowledge but also provide practical tools for clinicians, researchers, and policymakers. By illuminating the lived realities of infertile men and offering a validated measure of stigma, the MSI-Q will help to normalise men's reproductive health as a critical dimension of population well-being and resilience.

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153-127

ARE WE SCREENING ENOUGH? INSIGHTS FROM MALAYSIA'S NATIONAL BREAST CANCER SCREENING PROGRAM (2020–2024): PRELIMINARY FINDINGS

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ABSTRACT

Breast cancer remains the most common cancer among Malaysian women and a leading cause of cancer-related deaths. Early detection through regular mammogram screening plays a vital role in improving survival outcomes, yet participation rates remain suboptimal. Understanding the current screening patterns and disparities is crucial to strengthen early detection strategies. This study aimed to evaluate participation trends, disparities, and early detection outcomes of Malaysia's National Mammogram Screening Program from 2020 to 2024. A retrospective trend analysis was conducted using secondary data from the National Population and Family Development Board (LPPKN), involving 130,970 women aged 35–75 years who underwent mammogram screening. Statistical analyses examined screening coverage, sociodemographic characteristics, and cancer detection rates. Screening participation improved following the COVID-19 pandemic, increasing from 6,202 screenings in 2020 to 44,228 in 2022, with an average national coverage of 0.41%. Most participants were aged 40 years and above (96.3%), married (87.3%), and from households earning below RM10,000 per month (97.4%), with the majority being first-time attendees (64.8%). Participation was highest among Chinese women (48.4%) and varied widely across states and federal territories, from 0.06% in Kelantan to 2.58% in Putrajaya. Among those screened, 3.1% had abnormal findings, and 0.13% were confirmed breast cancer cases. Although breast screening participation improved post-pandemic and effectively reached the target age and income groups, coverage remained uneven across ethnic and regional lines. These preliminary findings highlight that consistent and repeat participation in mammogram screening remains limited, emphasizing the need for targeted outreach, improved accessibility, and sustained education to strengthen early detection and promote women's health equity in Malaysia.

Keywords: Breast Cancer Screening, Mammogram Uptake, Early Detection, Women's Health, Health Disparities, Malaysia.

160-134

PEMBANGUNAN DAN PENGESAHAN SOAL SELIDIK MENGENAI PENDEDAHAN MIKROPLASTIK YANG DIPERSEPSI DAN IMPLIKASI KESIHATAN DALAM KALANGAN LELAKI DEWASA

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ABSTRAK

Mikroplastik merupakan bahan pencemar persekitaran yang semakin banyak dikesan dalam matrik biologi manusia. Ini menimbulkan kebimbangan tentang potensi kesannya terhadap kesihatan reproduktif lelaki. Walaupun terdapat bukti pendedahan yang kian meningkat, masih terdapat kekurangan instrumen yang disahkan untuk menilai dimensi kesedaran, persepsi dan tingkah laku terhadap pendedahan mikroplastik, terutamanya dalam kalangan lelaki. Kajian ini bertujuan untuk membangunkan dan mengesahkan satu soal selidik bagi menilai pendedahan mikroplastik yang dipersepsi dan potensi implikasi kesihatannya dalam kalangan lelaki dewasa di Malaysia. Domain soal selidik dikenal pasti melalui sorotan literatur dan perundingan pakar, yang merangkumi penggunaan plastik isi rumah, gaya hidup, tabiat pemakanan, sejarah perubatan, dan persepsi risiko. Pengesahan kandungan dan muka telah mencapai persetujuan pakar yang memuaskan, dengan nilai *S-CVI/Ave* berjalut dari 0.85 hingga 0.96 dan nilai *S-FVI/Ave* dari 0.91 hingga 0.99. Ujian rintis yang melibatkan 30 responden mengesahkan kejelasan dan kebolehlaksanaan soal selidik, manakala pengesahan dalaman yang melibatkan 115 lelaki dewasa menunjukkan prestasi psikometrik yang kukuh. Analisis Teori Respons Item (Item Response Theory) menggunakan model logistik dua parameter menunjukkan diskriminasi yang mencukupi ($a > 0.70$) dan kesukaran ($-3.00 \leq b \leq +3.00$), dengan kesesuaian model yang boleh diterima (RMSEA = 0.061–0.078; CFI = 0.671–0.917; TLI = 0.589–0.883) dan kebolehpercayaan marginal (0.69–0.85). Dengan susulan penambahbaikan berulang, 31 item merentasi lima domain dikekalkan. Instrumen yang disahkan ini menunjukkan kebolehpercayaan yang mantap, kejelasan dan kerelevanan kontekstual, menyediakan alat yang seragam dan mantap secara psikometrik untuk menilai pendedahan mikroplastik yang dipersepsi dan implikasi kesihatan dalam kalangan lelaki. Borang soal selidik ini berupaya menyokong inisiatif epidemiologi, pendidikan dan dasar pada masa hadapan yang bertujuan untuk mengurangkan pendedahan manusia terhadap mikroplastik dan mempromosikan literasi kesihatan persekitaran.

Kata Kunci: Lelaki Dewasa, Mikroplastik, Pendedahan, Soal Selidik, Persepsi Risiko.

158-136

**TRANSFORMATION OF MALAYSIAN FAMILY WELL-BEING
MEASUREMENT: A STUDY ON IMPROVING THE FAMILY WELL-
BEING INDEX (FWBI) BASED ON A MIXED-METHODS APPROACH**

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ABSTRACT

The Malaysian Family Well-Being Index (FWBI) has been implemented by LPPKN since 2011 as the main instrument to measure family well-being in Malaysia. However, after four series of implementations, there is a need to reassess the relevance and effectiveness of SMEs in the context of contemporary challenges. This study used a mixed-methods approach that combines quantitative analysis of FWBI data (2011-2022) and qualitative analysis through in-depth interviews with key informants. The findings showed that the FWBI had strong methodological strength including a robust theoretical framework, representative sampling, and high instrument

reliability (Cronbach Alpha 0.77-0.94). The overall FWBI score increased from 7.33 (2016) to 7.93 (2022), but has not yet reached the high threshold of well-being (8.00). The qualitative analysis identified critical limitations: inconsistent frequency of implementation, limited scope of respondents, domains needing to be updated (mental health, digital economy, cybersecurity), and limited data accessibility. The study suggested comprehensive improvements including the addition of new subdomains (mental health, digital financial literacy, social capital) and expansion of the scope of respondents. Policy implications and operational recommendations are discussed to make SMEs more responsive, inclusive, and sustainable as an instrument for monitoring the well-being of Malaysian families.

Keywords: Indeks Kesejahteraan Keluarga, IKK, LPPKN, Family Wellbeing Index, FWBI.

Trend Kesuburan, Kematian dan Migrasi serta Implikasinya Terhadap Pertumbuhan dan Struktur Penduduk

097-080

EMOTIONAL WELL-BEING AND COPING STRATEGIES AMONG SUBFERTILITY COUPLES. DOES GENDER MATTER? A PRELIMINARY STUDY AT LPPKN, KUALA LUMPUR

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ABSTRACT

Background: Subfertility is a significant life stressor that may compromise emotional well-being. Depression, anxiety, and stress (DAS), which may reflect the emotional well-being, together with coping strategies, are key determinants of treatment outcomes and quality of life. However, the influence of gender on these psychological dimensions remains unclear.

Objective: This study determined the prevalence of DAS and coping strategies, explored gender differences, and identified predictors of emotional well-being measured by DAS, among subfertility couples at the National Population and Family Development Board (LPPKN), Kuala Lumpur.

Methods: A cross-sectional study was conducted among 110 subfertility patients (55 couples) recruited through convenient sampling between July and August 2025. Data were collected using validated questionnaires of Malay version of the following tools; (1) DASS-21 in measuring the emotional well-being and (2) Brief COPE-28 in assessing the coping strategies in addition to sociodemographic information. Ethical approval obtained prior the study. Descriptive analysis, Chi-square, non-parametric tests, and regression models were applied.

Results: Participants had a mean age of 33.1 ± 4.1 years, with equal gender distribution. Malays comprised 87.3%, and most resided in urban areas (83.6%). Depressive symptoms were present in 40% (21.8% mild; 17.3% moderate-severe; 0.9% extremely severe), anxiety in 11.8% (5.5% mild,

6.3% moderate-severe), and stress in 16.4% (6.4% mild; 5.5% moderate-severe; 4.5 % extremely severe). No significant gender differences were observed in DAS scores ($p>0.05$). Bivariate analysis showed that depression levels were significantly associated with duration of infertility ($p=0.022$), whereas anxiety levels were significantly associated with duration of infertility ($p=0.03$), treatment duration ($p=0.026$) and household income ($p=0.027$). Coping analysis revealed females utilized significantly more adaptive strategies, including emotional support, positive reframing, planning, acceptance, and religion ($p<0.01$). Regression analysis identified education level as a predictor of depression ($p=0.042$), while race predicted maladaptive coping in females ($p=0.026$).

Conclusion: A substantial proportion of subfertility couples at LPPKN experienced emotional distress. Gender did not significantly influence DAS levels, yet coping patterns differed, with women favoring adaptive strategies. These findings highlight the importance of integrating psychosocial support into fertility care. Tailoring intervention by gender to enhance emotional well-being is an important step.

Keywords: Emotional Well-Being, Coping Strategies, Subfertility Couples, Depression, Anxiety, Stress.

122-101

CHLAMYDIA INFECTION IN ADOLESCENTS AND YOUTH: IMPACT ON REPRODUCTIVE HEALTH

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ABSTRACT

Genital *Chlamydia trachomatis* infection is among the most common sexually transmitted diseases (STDs) globally, especially affecting adolescents and young adults. Due to its often asymptomatic nature, it frequently goes undiagnosed and untreated, leading to serious reproductive health consequences. Adolescents are particularly at risk due to biological vulnerability, limited access to healthcare, inconsistent condom use, and insufficient sexual health education. Prevalence is highest among individuals aged 15–24, with young women most affected. If left untreated, chlamydia can cause pelvic inflammatory disease (PID), increasing the risk of infertility, ectopic pregnancy, and chronic pelvic pain. Though curable with antibiotics, its silent progression contributes to long-term impact. Stigma and lack of awareness around STDs among youth further delay diagnosis and treatment. Addressing chlamydia in this population requires routine screening, confidential healthcare access, and comprehensive sexual education. Effective intervention is essential not only to reduce transmission but also to protect the reproductive health and future fertility of adolescents and young adults.

Keywords: Chlamydia, Adolescents, Sexually Transmitted Diseases, Infertility, Reproductive Health.

INTRODUCTION

Bacterial sexually transmitted infections (STIs), particularly *Chlamydia trachomatis*, remain a major yet under-recognized public health concern worldwide (Newman et al., 2015). Population-based analyses confirm that prevalence is highest among young adults, particularly university-aged individuals, reflecting gaps in awareness and screening (Alexiou et al., 2025; Copen et al., 2025; Gratrix et al., 2025; Sillabutra et al., 2025). Surveillance data also reveal substantial

underdiagnosis, as many cases remain asymptomatic yet continue to drive transmission and underscore the growing reproductive health impact, with chlamydia contributing to rising infertility trends in several populations (Copen *et al.*, 2025; Gratrix *et al.*, 2025). Genital Chlamydia infections are often described as “silent” because a large proportion of cases, especially in women, are asymptomatic or minimally symptomatic. As a result, infections may persist undetected for long periods, facilitating continued transmission and increasing the risk of long-term complications. Unlike viral STIs such as hepatitis B and human papillomavirus, for which effective vaccines exist, there are currently no vaccines available for chlamydia or gonorrhoea (Makhoul and Abu-Raddad, 2025). Early detection and treatment therefore remain the only viable strategies for prevention and control.

Globally, millions of new cases of chlamydia and gonorrhoea are reported annually, with the highest incidence among people aged 15–24 years (Copen *et al.*, 2025). University students fall squarely into this high-risk age group. Studies from other countries have shown elevated prevalence rates among undergraduates, often linked to early sexual debut, multiple partners, inconsistent condom use, and low awareness of STI risks. In Malaysia, however, epidemiological data on bacterial STIs among university students remain limited. Social stigma, cultural sensitivities, and the absence of confidential youth-friendly sexual health services contribute to underdiagnosis and underreporting. Malaysia is simultaneously facing demographic and reproductive health challenges, including declining fertility and rising concerns about infertility. The country’s total fertility rate fell below the replacement level of 2.1 in 2012 and has continued to decrease, reaching a historic low of 1.6 in 2023 (Department of Statistics, 2023). While socioeconomic shifts and lifestyle changes are major contributors, undiagnosed reproductive tract infections play an underappreciated role in this decline. Early research from Kuala Lumpur in 1990 by Ramachandran and Ngeow reported a high prevalence of 26.5% chlamydial cervicitis among 370 female commercial sex workers, highlighting the significant burden of sexually transmitted infections within this population (Ngeow *et al.*, 1990; Ramachandran and Ngeow, 1990). More recent molecular studies revealed presence of *C. trachomatis* in 51.1% (92/180) women of reproductive age presenting with infertility and gynecological complaints at Universiti Malaya Medical Center, with infection strongly associated with irregular menses and reproductive tract inflammation (Yeow *et al.*, 2016). Similarly, a clinic-based study across sexually transmitted disease clinics in northern Peninsular Malaysia reported an overall *C. trachomatis* prevalence of 21.7% among 83 sexually active symptomatic and asymptomatic patients (Yeoh *et al.*, 2020).

BACTERIAL BIOLOGY AND PATHOGENESIS

C. trachomatis belong to the family Chlamydiaceae, a group of Gram-negative obligate intracellular bacteria that cause infections in both humans and animals, with several species such as *C. psittaci*, *C. abortus*, and *C. felis*, which are recognized as zoonotic pathogens capable of cross-species transmission to humans (Cheong *et al.*, 2019b). *C. trachomatis* is a small, Gram-negative, obligate intracellular bacterium that is one of the most common causes of sexually

transmitted infections worldwide. *Chlamydia* possesses a unique biphasic developmental cycle that alternates between two distinct morphological forms: the elementary body (EB) and the reticulate body (RB). The EB is the metabolically inactive, infectious form that attaches to and invades epithelial cells of the genital tract, conjunctiva, or rectum. Once inside the host cell, the EB transforms into the larger, metabolically active RB, which replicates within a specialized membrane-bound vacuole known as an inclusion body. After multiple rounds of binary fission, RBs reorganize back into EBs, which are then released upon host cell lysis to infect new cells. This intracellular lifestyle enables *C. trachomatis* to evade many host immune defenses and persist within tissues, often causing chronic or recurrent infections.

Structurally, *C. trachomatis* lacks a conventional peptidoglycan layer but maintains an outer membrane rich in cysteine-cross-linked proteins and lipopolysaccharides, conferring rigidity and antigenicity. The major outer membrane protein (MOMP) serves as the principal surface antigen and is a key target for diagnostic assays, vaccine development, and serotyping. Based on antigenic variation in MOMP, *C. trachomatis* is classified into different serovars that are associated with distinct clinical syndromes: serovars A–C cause trachoma (a blinding eye disease), serovars D–K cause urogenital infections, and serovars L1–L3 cause lymphogranuloma venereum (LGV), a more invasive infection characterized by genital ulcers and lymphadenopathy.

Chlamydia infection has profound consequences at the cellular level, as the obligate intracellular bacterium manipulates host processes to support its survival and replication. Studies have shown that *C. trachomatis* disrupts host cell cycle regulation and induces DNA damage responses, which may contribute to genomic instability and oncogenic transformation (Wang et al., 2025). Infection also exploits sphingolipid metabolism and alters mitochondrial function and activates stress pathways, leading to impaired apoptosis and enhanced cell survival that favour persistent infection (Moldovan et al., 2025). *Chlamydia* infection also alters cell metabolism, especially mTOR pathway leading to disrupted cell metabolism (Cheong et al., 2023b; Tan et al., 2016). These cellular consequences of *Chlamydia* infection underpin its role in both acute pathology and chronic reproductive sequelae.

Pathogenesis arises primarily from the bacterium's ability to colonize and damage columnar epithelial cells lining the cervix, urethra, and upper genital tract. The host's inflammatory response, rather than direct bacterial toxins, drives much of the tissue injury. Chlamydial infection drives inflammatory signalling, thereby promoting chronic inflammation and tissue damage (Zhang et al., 2024). Persistent infection leads to the release of proinflammatory cytokines such as IL-1 β , IL-6, and TNF- α (Cheong et al., 2023a; Cheong et al., 2019a), as well as influx of inflammatory macrophages to the genital tract (Chan et al., 2023), resulting in fibrosis, scarring, and tubal blockage. *Chlamydia* is able to evade host immune response through multiple strategies including paralysis of phagocytic neutrophils, formation of inclusions and others (Wong et al., 2019). Clinically, chlamydial infection is often asymptomatic, especially in women, but can cause cervicitis, urethritis, pelvic inflammatory disease (PID), ectopic pregnancy, and infertility when

left untreated. Chlamydial infection is also associated with chronic inflammatory diseases at distant organs for instance reactive arthritis (Cheok et al., 2020). Clinical studies have shown that gonorrhoea often co-occurs with *Chlamydia trachomatis*, with coinfections reported in both men and women across different populations (Ball et al., 2024; Su et al., 2022; Zhang et al., 2025). Infected individuals may experience heightened inflammation and greater mucosal damage, amplifying susceptibility to HIV and other sexually transmitted pathogens (Kahn et al., 2005; Onorini et al., 2022).

CLINICAL CONSEQUENCES

The sequelae of untreated bacterial STIs are profound. In women, persistent or ascending infection into the upper genital tract can cause pelvic inflammatory disease, tubal scarring, ectopic pregnancy, chronic pelvic pain, and infertility (Darville and Hiltke, 2010; Davies et al., 2016; Owusu-Edusei et al., 2010). Tubal factor infertility remains one of the most serious long-term consequences of chlamydial infection and is of particular concern in Malaysia, where infertility rates are rising.

The clinical consequences and sequelae of *C. trachomatis* infection are particularly profound in adolescents and young adults, reflecting both biological vulnerability and delayed diagnosis due to the infection's often asymptomatic nature. In most cases, Chlamydial infection produces no obvious symptoms, up to 80% of infected women and 50% of infected men remain asymptomatic, allowing the pathogen to persist undetected for months or even years. This silent course facilitates ongoing transmission within sexually active youth populations and contributes to serious long-term reproductive health complications.

In young women, untreated chlamydial infection can ascend from the lower to the upper genital tract, causing pelvic inflammatory disease (PID), a major cause of infertility worldwide. Recurrent or chronic PID leads to tubal scarring and adhesions, which compromise oocyte transport and increase the risk of tubal factor infertility and ectopic pregnancy. Even mild or subclinical infections can result in microscopic tubal damage sufficient to impair fertility. Chronic pelvic pain is another debilitating sequela that can persist for years, affecting quality of life and psychological well-being. In pregnant adolescents, *C. trachomatis* infection is associated with adverse pregnancy outcomes, including spontaneous miscarriage, preterm rupture of membranes, preterm delivery, and low birth weight.

Perinatal transmission during childbirth can also lead to neonatal conjunctivitis and pneumonia, which remain significant causes of infant morbidity in low- and middle-income settings. *C. trachomatis* infection in female has also been linked to cervical and ovarian cancer (Goddard et al., 2019; Sineque et al., 2024). Our previous study demonstrated significant alterations in the vaginal microbiota composition among women infected with *C. trachomatis*, indicating a

disruption of microbial homeostasis associated with infection. (Cheong et al., 2019c). The situation is further complicated by antimicrobial resistance, which has been designated as a global health threat due to strains resistant to nearly all available antibiotics.

Among young men, while the complications of *C. trachomatis* infection are less frequently documented compared to women, accumulating evidence indicates significant implications for male reproductive health. Infection can cause urethritis, epididymitis, and prostatitis, leading to impaired sperm function, reduced sperm motility, and subfertility. Persistent or recurrent infections may result in urethral strictures, testicular inflammation, and chronic pelvic discomfort, all of which can compromise reproductive capability. Several studies have demonstrated that *C. trachomatis* can directly infect spermatozoa and epithelial cells within the male genital tract, inducing oxidative stress, mitochondrial dysfunction, and DNA fragmentation in sperm (Gallegos et al., 2008; Perez-Soto et al., 2021; Satta et al., 2006). These processes impair sperm viability and fertilization potential, even in men without overt symptoms. Additionally, the infection may trigger an autoimmune response through the generation of antisperm antibodies, further reducing fertility potential (Hirano et al., 2011).

Chlamydia infection is also associated with chronic inflammatory diseases at distant organs for instance reactive arthritis (Cheok et al., 2020). Clinical studies have shown that gonorrhoea often co-occurs with *Chlamydia trachomatis*, with coinfections reported in both men and women across different populations (Ball et al., 2024; Su et al., 2022; Zhang et al., 2025). Coinfected individuals may experience heightened inflammation and greater mucosal damage, amplifying susceptibility to other sexually transmitted pathogens (Kahn et al., 2005; Onorini et al., 2022).

Collectively, these findings highlight that chlamydial infection contributes not only to inflammation of the reproductive tract but also to damage that can result in infertility or subfertility if left untreated. Importantly, both male and female adolescents with *C. trachomatis* infection are at increased risk of acquiring or transmitting HIV, as mucosal inflammation and epithelial disruption facilitate viral entry and enhance susceptibility (Buckner et al., 2016; Dzakah et al., 2022). Beyond physical morbidity, the psychosocial impact of chlamydial infection among young people is substantial. Diagnosis often provokes feelings of shame, anxiety, and fear of stigma, particularly in conservative societies where open discussions of sexual health are limited. For young women, infertility or ectopic pregnancy may have lifelong social and emotional repercussions. From a public health perspective, these reproductive sequelae are especially concerning in Malaysia and other countries experiencing declining fertility rates, as undiagnosed or recurrent chlamydial infections may represent a hidden contributor to the rising burden of infertility among women of reproductive age.

PREVENTION STRATEGIES

Effective prevention and control of *C. trachomatis* infection require a comprehensive public health approach that prioritizes young adults and adolescents, who represent the population at greatest risk. This demographic group is biologically and behaviorally vulnerable to infection due to cervical ectopy in young women, early sexual debut, multiple or concurrent partnerships, inconsistent condom use, and limited access to confidential healthcare. Despite their heightened risk, young people are often excluded from routine screening programs and may avoid care-seeking due to stigma, lack of awareness, and fear of disclosure. As a result, a large proportion of infections in this age group remain undiagnosed, perpetuating silent transmission and increasing the risk of long-term reproductive complications such as pelvic inflammatory disease, ectopic pregnancy, and infertility.

To address these challenges, routine screening of sexually active adolescents and young adults, particularly females under 25 years of age, should be implemented as a cornerstone of chlamydial prevention. School, college, and university-based screening initiatives have been shown to be both feasible and acceptable, especially when paired with education and counselling that normalize STI testing as part of routine health maintenance. Integrating youth-friendly sexual and reproductive health services within primary care and campus clinics is crucial to ensure confidentiality, affordability, and accessibility. Services should be supported by trained healthcare providers who can offer non-judgmental counselling, partner notification, and appropriate treatment follow-up.

Equally important is the incorporation of comprehensive sexual health education that extends beyond abstinence-only messages to include accurate information about contraception, condom negotiation, and STI prevention. Education should begin early and be culturally sensitive, empowering adolescents to make informed decisions about their sexual health. Digital platforms, mobile health applications, and social media campaigns can be leveraged to disseminate educational materials and promote testing uptake, particularly in contexts where discussing sexual health remains culturally sensitive.

At the community and policy levels, stigma reduction campaigns, investment in surveillance systems, and integration of STI control within broader adolescent health programs are vital. Collaboration between ministries of health and education can help institutionalize screening and awareness initiatives within schools and universities. Public health strategies should also include partner services, such as expedited partner therapy, to interrupt transmission chains. Collectively, these interventions are essential to curb chlamydial transmission among young Malaysians and safeguard their reproductive health and fertility for the future.

FUTURE DIRECTIONS

The landscape of *Chlamydia trachomatis* diagnosis and control is rapidly evolving, yet significant gaps remain in early detection, treatment accessibility, and prevention, particularly among adolescents and young adults, who represent the highest-risk demographic. While diagnostic approaches have advanced from traditional culture and antigen detection to highly sensitive nucleic acid amplification tests (NAATs) that identify bacterial DNA or RNA in urine, vaginal, or cervical samples, broader implementation of these methods in community and educational settings is still limited. Reinfection remains a persistent challenge due to untreated sexual partners, inadequate contact tracing, and the absence of routine follow-up screening.

Future strategies must move beyond clinic-based testing to more innovative, accessible, and youth-centered interventions. Priority should be given to the development of low-cost, rapid, and self-administered diagnostic tests that enable on-site or at-home detection of *C. trachomatis* infection. These technologies could significantly expand screening coverage among young adults, particularly in universities, community health programs, and rural areas where access to laboratory-based testing is limited. In parallel, the creation of digital health platforms and mobile applications for STI education, symptom self-assessment, partner notification, and linkage to care can overcome cultural stigma and improve health-seeking behaviors among adolescents.

A major global research priority remains the development of an effective chlamydia vaccine, with several promising candidates currently in pre-clinical and early-phase clinical evaluation. A successful vaccine would offer durable protection prior to sexual debut, making it a transformative tool for adolescent sexual health. Until such vaccines become available, implementation science should focus on optimizing integration of STI screening and prevention programs into existing healthcare and educational infrastructures. In Malaysia and across Southeast Asia, school- and university-based health programs represent untapped platforms for systematic screening and sexual health education.

CONCLUSION

In conclusion, *C. trachomatis* remains a significant and often overlooked threat to the reproductive health of adolescents and young adults. Its asymptomatic and persistent nature leads to delayed diagnosis, continued transmission, and serious long-term complications such as pelvic inflammatory disease, ectopic pregnancy, and infertility. Despite advances in diagnostics and treatment, the absence of a vaccine and limited screening among young people hinder effective control. A youth focused approach is essential, emphasizing routine screening, timely treatment, partner management, and comprehensive sexual health education within schools, universities, and community health settings. Expanding access to rapid and affordable testing, strengthening digital

health engagement, and investing in vaccine development will be crucial to reducing the burden of chlamydia. Protecting the reproductive health of adolescents and young adults is vital to ensuring future fertility and improving public health outcomes.

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**MARRIAGE INTENTION IN TRANSITION: SOCIO-DEMOGRAPHIC AND
PSYCHOLOGICAL DETERMINANTS IN MULTI-ETHNIC MALAYSIA**

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ABSTRACT

Marriage, once central to family formation and community stability, is increasingly delayed or reconsidered amid cultural change, economic pressures, and shifting social norms linked to the second demographic transition. This study examines how socio-demographic and psychological factors shape marriage intention in Penang, Malaysia, using the Theory of Planned Behavior (TPB). Survey data from 920 unmarried adults aged 20-45 were analyzed with an ordered probit model. Results reveal ethnic variation: Chinese respondents were less likely than Malays to intend to marry. Across the sample, financial readiness, social opportunities, family and religious influence, and positive attitudes promoted marriage intention, while homeownership concerns and fear of commitment deterred it. Policies enhancing housing affordability, social interaction, and psychological support may encourage family formation.

Keywords: Marriage Intention, Ethnicity, Theory of Planned Behavior.

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FERTILITY RATE, DEMOGRAPHICS, AND SOCIOECONOMIC OUTCOMES: A SCOPING REVIEW

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ABSTRACT

In recent decades, social and economic changes have led to a drop in fertility rates in various countries, including Malaysia. A persistent birth rate below the replacement levels will lead to demographic changes that eventually increase socioeconomic issues over time. Therefore, it is very important to get a comprehensive overview of this situation, one of which is to study factors that may influence public reproductive choice such as knowledge and perception about fertility rate. Given that both variables have the potential to impact individual decision, it is essential that the public grasp the connection between fertility rates and shifting trends in the country's demographic structure, particularly to preserve the nation's sustainability. This scoping review aimed to outline the existing studies addressing public knowledge and perception of fertility issues, particularly fertility rate and its relationship to population demographics. A systematic literature search was conducted through five online databases which are ScienceDirect, Scopus, SpringerLink, ProQuest and PubMed, targeting studies published between 2005 and 2025. An effective search strategy was developed using the PCC (Population, Concept and Context) framework, combined with Boolean operators to ensure a comprehensive result. The search terms used included (“knowledge” OR “perception” OR “understanding”) AND (“fertility rate” OR “total fertility rate” OR “national fertility rate”) AND (“demographic trend” OR “population trend”) AND (“public”). After a thorough screening of 982 articles, only 30 studies were selected for final review. Key themes identified across these studies include public knowledge and perception of fertility rate and policies, personal opinions and societal norms affecting childbearing, demographic shifts, healthcare system challenges and changes in support ratios affecting the economy. Subsequently, the study emphasises that a number of variables, beyond knowledge and perception, affect the fertility rate. It also stresses the significance of establishing a solid strategy for the future to address this issue, especially for the long-term health and security of the nation.

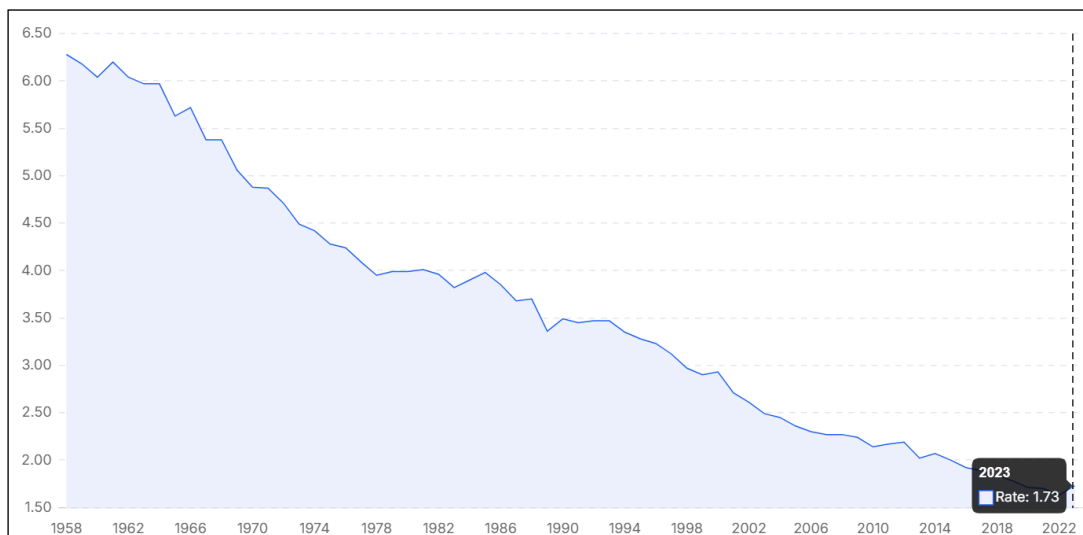
Keywords: Fertility Rate, Knowledge, Perception, Demographic Trends, Population Structure.

INTRODUCTION

In an era where national development is the primary goal, it may contribute to the rapid development of the country which may influence various domestic issues, such as economic development, education, health and more, including the national fertility rate. Understanding fertility rate, which is the average number of children born to women throughout their reproductive years, is essential for identifying population trends that have the potential to impact the nation's social, economic and quality of life circumstances. According to Rose *et al.* (2020) and Chan *et al.* (2022), many developed and developing countries have faced a decline in birth rates during recent years, where the mean age of the population has risen due to changes in demographic makeup, particularly increase in lifespan and a decline in fertility (Cooley *et al.*, 2024). If the problem continues, it can cause long-term economic risks for the nation (Karim *et al.*, 2023).

With the current fertility rate in 2023 recorded at 1.73 births per woman, Malaysia is now in a concerning position as it does not surpass the replacement level of 2.1 children per woman (Department of Statistic Malaysia, 2024). If the rates fall below the threshold level, it could lead to a potential population decline in the coming years, causing pressure on the overall well-being of the country. In addition, Agbaglo *et al.* (2022) stated that the fertility rates worldwide have declined over the past few decades, where in 2019, it was 2.5 births per woman, down from 2.8 births per woman in 2000. This clearly showed a steady decline in the fertility rate from 2000 due to national development strategies that incorporate family planning, as per the report by United Nations (2023). This situation raises concerns about population ageing, which might result in a greater elderly population and decreased workforce causing a lower working-age population and leading to a labour shortage (Nor & Ghazali, 2021; Karim *et al.*, 2023). Besides, a declining fertility rate also risks policy misalignment, as a result of not fully comprehending the public needs in relation to the demographic shift.

Figure 1: Total Fertility Rate (TFR) in Malaysia from 1958 to 2023 at the national level (Department of Statistics Malaysia, 2024)



In all developing and developed countries, each has a distinct developmental trajectory that promotes its own national fertility rate. As it is known, one should aim for a total fertility rate of 2.1 children per woman in order to surpass the replacement level and prevent a sharp decline in population (Shafie *et al.*, 2021). Globally, fertility rates have been steadily declining, with some countries such as Japan, South Korea and China facing even lower fertility levels, which indicate possible demographic issues especially in the long run (Lin *et al.*, 2020). Together with that, fertility rates also have been falling since 2019, involving other regions like the Nordic nations, and specifically in Finland, the TFR dropped rapidly from 1.87 in 2010 to an all-time low of 1.41 in 2018 (Hellstrand *et al.*, 2020). Due to fewer first births and delay in childbearing, this reduction reflects shifting social standards and the influence of demographic variables on reproductive behaviour.

Nevertheless, little attention has been paid to the various ways in which perception and knowledge influence fertility rates or the country's demographic trends. It is vital to comprehend fertility knowledge, notably the fertility rate, as it connects individual reproductive choice to the future population trends. Lack of understanding in this area may lead to limited participation in key initiatives that are necessary for the nation's sustainability. Furthermore, previous studies also demonstrated a knowledge gap in the present generation about fertility, which undoubtedly contributes to a huge knowledge gap in fertility rate and demography. Regarding this, it is essential to implement a fertility awareness program to supply adequate knowledge, improving understanding about fertility rate and demographics through targeted educational initiatives, which can provide the present generation with the information they need to make the best choices about family planning.

Following the matter, addressing fertility and demographic issues requires managing the main gap in public knowledge and perception. It is crucial to gain insight into fertility issues and determine how these concerns have been addressed in existing literature. Therefore, this scoping review aims to explore how issues concerning fertility rates have been discussed in previous research, to provide an overview of public knowledge and perception of fertility rates, while clarifying how birth rates significantly affect the population structure and demographic pattern.

METHODOLOGY

This study employed a scoping review, which Tricco *et al.* (2018) defined as a form of knowledge synthesis that systematically maps the existing data on a given subject and identifies significant concepts, hypotheses, sources, and knowledge gaps via a methodical strategy. Since this evaluation approach may identify gaps in the topic area and propose suggestions for future study, it is particularly helpful in fields where the subject matter is still in its early phases of discussion or has not been thoroughly investigated. A scoping review is the most appropriate method for this study as it evaluates multiple aspects of previous studies, in this instance pertaining to public understanding, perception, and impact of trends in fertility rates. The PRISMA-ScR (Preferred Reporting Items for Systematic Review and Meta Analysis Extension for Scoping Review)

checklist was used as a tool in this study for reporting the review since it encourages uniformity and transparency in the study process and is increasingly recognised by established journals. The 20 items in this PRISMA-ScR, including 2 optional items, help to ensure accuracy and integrity while performing and reporting scoping reviews.

The study reviewed articles published between 2005 and 2025, searching through a number of online databases namely PubMed, ProQuest, Scopus, Springer, and ScienceDirect. Additionally, the PCC (Population, Concept, Context) framework was also applied in the search strategy since it is commonly used in scoping reviews to refine research topics and structure terms. Relevant keywords were selected in accordance with the study's objectives, guided by the PCC framework to reflect the ultimate ideas and concept of the study. These included terms such as “knowledge”, “perception”, “understanding”, “fertility rate”, “total fertility rate”, “national fertility rate”, “demographic trends”, “population trend”, and “public”. These keywords were combined with Boolean operators (AND, OR) in an efficient manner to provide the best search string that effectively targeted relevant research included in the review. Examples are “knowledge” OR “perception” OR “understanding” AND “fertility rate” OR “total fertility rate” OR “national fertility rate” AND “demographic trend” OR “population trend” AND “public”.

With the aim of ensuring that the review contains only relevant research, this study carefully considered the selection process. To attain this, a suitable and comprehensive search string, which is basically the combination of keywords and Boolean operators that reflect all elements such as synonyms or related terms, was used and applied to multiple databases. Duplicate entries and materials irrelevant to the research topic were removed at this phase. Abstracts were then reviewed to exclude content that does not support the objectives of the study. This was followed by a full-text assessment as a comprehensive evaluation that verified the paper's eligibility based on specific inclusion and exclusion criteria. In conjunction with that, the application of inclusion and exclusion criteria ensured that the research papers obtained are relevant to the literature search and aligned with the study objectives.

Table 1: Inclusion and Exclusion Criteria for the Scoping Review

Inclusion	Exclusion
Studies published between 2005 and 2025.	Studies published before 2005
Studies addressing knowledge and perception of fertility rates, or the demographic or socioeconomic impacts of fertility rate trends.	Studies not related to fertility rates, demographics, or socioeconomic impacts
Studies published in English.	Review articles

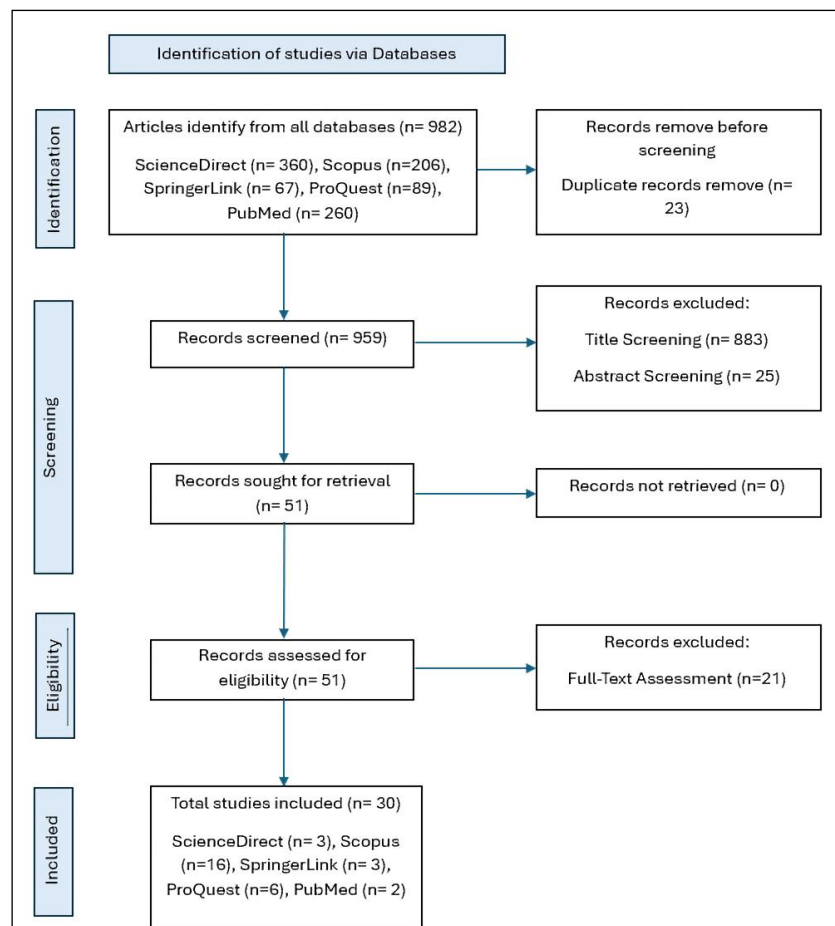
The data extraction process ensured that important information is deliberately obtained from each selected publication. For the evaluation, basic research information was gathered and presented in a table, including the title, authors, year of publication, and country of origin (Supplementary 1). The details compiled enabled the identification of trends across time and regions including

information on geographic dispersion as well as brief overviews of fertility-related studies conducted in certain areas. Key findings aligned with the study objectives from each paper were arranged according to relevant themes and were later reviewed and analysed to ensure relevance and consistency.

RESULT AND DISCUSSION

A total of 982 articles were retrieved from 5 selected databases, and following removal of 23 duplicate entries, 959 articles remained for screening. Following the titles and abstract screening phase, 908 were eliminated, leaving 51 articles for further evaluation. All papers were accessible, therefore, an eligibility assessment and full-text evaluation was conducted. A further 21 articles were eliminated after a thorough assessment, as the findings were not directly relevant to the research. Only 30 articles were retained in the final review.

Figure 2: PRISMA Flow Diagram for Scoping Review



A thematic analysis was carried out to identify themes and patterns that complemented the purposes in the study. To ensure that the review includes a wide and representative range of publications, while staying closely related to the objectives of the study, articles were grouped

together under relevant thematic categories. This approach enabled a clearer and more comprehensive examination of the data by allowing every topic covered in each theme to be evaluated in depth based on their research outcomes.

Table 2: Summary of Findings Across Themes

Theme	Findings
Public Understanding and Perception of Fertility Rate and Related Policies (n=5)	General lack of knowledge and negative perception about fertility rates and policies.
Personal Perceptions, Opinions and Societal Norms Toward Childbearing (n=8)	Individual opinion, shifting norms, delaying marriage, prioritizing careers affect reproductive choices.
Ageing Population and Demographic Shifts (n=26)	Low fertility leads to an aging population, higher elderly dependency, and demographic imbalance.
Health and Social Care Challenges (n=8)	Increased demand for elderly care, healthcare system strain, financial issues and worker shortages.
Shifting Support Ratio and Economic System Strain (n=20)	Changes in fertility rates influence the labour force, economic growth, and demographic structure, with both low and high fertility posing different long-term challenges.

Based on the research outcomes in the articles, five key themes addressing various issues linked to fertility rate were identified. These include public knowledge and perception of fertility rates and related policies, personal perceptions, opinions and societal norms toward childbearing, ageing population and demographic shifts, health and social care challenges, and finally shifting support ratio and economic system strain.

THEME 1: PUBLIC UNDERSTANDING AND PERCEPTION OF FERTILITY RATE AND RELATED POLICIES

In the first theme, it was found that while the government may introduce fertility-related policies to the public, achieving the policy objectives can be quite challenging. This may happen due to various perceptions and low level of knowledge regarding such policies. However, it is important to consider that reproductive choices are greatly shaped by other factors such as economic insecurity, work-life balance and lifestyle preferences. These considerations always outweigh the policies alone, indicating that multiple determinants beyond knowledge need to be addressed. For instance, a study in Russia reported that decreasing fertility rate is generally accepted by the public, as they believed that it is an expected result of a country's development. Consequently, the population appears indifferent to the steady decline of the nation's fertility rate which later may lead to adverse effects in the future.

Furthermore, it is well known that China introduced its Three-child policy in 2021 after the failure of the 2-child policy in reversing the low fertility rates (Yue *et al.*, 2023). This policy change was implemented in order to boost the country's birth rate in the future. Despite that, even when the policy is improved, acceptance remains low due to several concerns. Similarly with a study from South Korea, policies alone had limited influence on fertility behaviour, especially when the decisions were heavily impacted by unfavourable perceptions about parenthood and the intention to have children only increases when there is support provided (Kim *et al.*, 2022). In line with this, Duan *et al.* (2025) highlights the need to give greater consideration of efficacy and relevance of the policy, so that it meets the actual needs of the reproductive age groups such as career and financial stability.

THEME 2: PERSONAL PERCEPTIONS, OPINIONS AND SOCIETAL NORMS TOWARD CHILDBEARING

Personal perceptions, opinions and societal norms that shape childbearing decisions often outweigh the impact of any initiative to increase fertility rates. In several studies from China, many people showed little interest in having an additional child, despite policies encouraging the public to have more children. Similarly, in a study from South Korea, many young women perceived marriage and motherhood negatively, with family decisions mostly driven from their own choices, which in turn impact the current fertility rate (Kim *et al.*, 2022). Women valued parenting much less than men, viewing it as a potential disruption to their daily and career lives (Kim & Kim, 2023). These findings proved that societal opinion might hinder the effectiveness of policies particularly when they are opposed to the ideal lifestyle of modern society. Studies from Singapore, Finland and India showed an increasing trend of childlessness, indicating a transition of societal trend toward individualism, which ultimately threaten the current pace of fertility rate. This demonstrated how one's preference and own interests alongside socioeconomic, demographic and cultural factors shape fertility trends (Abate *et al.*, 2024).

THEME 3: AGEING POPULATION AND DEMOGRAPHIC SHIFTS

It is understood that a consistent low birth rate would contribute to population ageing, higher dependency ratio and a shift in structural demographics. Although low fertility rates are becoming a global trend, the world population continues to expand, reaching 8.0 billion people in 2023 and is expected to reach 9.7 billion by 2050 (Abate *et al.*, 2024). This indicates a crucial demographic shift, altering the population's age structure and ultimately increasing the number of older people. According to the United Nations (2023), all countries are experiencing population ageing, although at varying speeds. It is understood that in developed countries, ageing is more advanced, where the percentage of the older population is expected to increase from 20% in 2023 to 28% in 2025, implying that the elderly will make up over 25% of the population. The developing and least developing countries also experience rapid ageing, with the number of people aged 65 years and over projected to triple and double, respectively.

While maintaining a higher birth rate is crucial, an excessively high fertility rate can also negatively affect a country, perhaps leading to overpopulation, that can result in resource depletion and significant economic challenges. In brief, the combination of reduced birth rates with increased lifespan causes the demographic structure toward an older population, shifting to an ageing population. In contrast, a high fertility rate can also shift the demographic balance by increasing the proportion of young people, which subsequently places a great strain on the government to supply resources including infrastructure, healthcare, education, and more, potentially destabilising social welfare.

THEME 4: HEALTH AND SOCIAL CARE CHALLENGES

The need for healthcare facilities and social support services is rising greatly as the population's age distribution moves towards an older demographic (Karim *et al.*, 2023). Due to the high demand in the elderly welfare and health sector, it is becoming more difficult to sustain both financial and labour requirements needed to support the healthcare system effectively. As supported by Feng *et al.* (2020), lack of workers, insufficient funding, home-based service and improper quality management are some of the current challenges faced in this healthcare system. It is also understood that as the number of older people rises, more healthcare staff will be needed. However, as the population ages rapidly, not all older individuals may receive sufficient assistance, specifically when the current workers struggle to meet their needs.

The study also demonstrated how societal expectations around healthcare are shifting, resulting in the growing trends of personal plans for future medical requirements instead of depending on the limited support provided. This underlines a notable shortcoming in the welfare system, leading to individuals making their own initiatives to secure quality elderly care for themselves. Eventually, this situation puts more pressure on the public service and intensifies existing inequality, causing a wide gap between those with access to private care and those without. This stresses how declining fertility rate not only reshapes demographic structure but also places additional strain on the healthcare system, emphasising the need for interventions that are sufficient for the ageing population.

THEME 5: SHIFTING SUPPORT RATIO AND ECONOMIC SYSTEM STRAIN

An ageing population, largely the result of persistently low fertility rate, is steadily decreasing the number of working age population. This is the outcome of an overall population imbalance, since the number of elderly individuals is growing faster than that of younger generations. If this trend continues, shifts in the age distribution will significantly alter the population balance and raise the Total Support Ratio (TSR), which is the proportion of the non-working age population to the working-age population. As the number of non-working groups grows, there is a greater burden on the working individuals to support them.

As the population declines, fewer young people will enter the workforce which slows economic development and increases dependence on older workers and immigration (Wang, 2024). In order to meet their financial needs, many elderly workers anticipate remaining in the workforce much longer, although this may also indirectly result in a lack of young workers in society. The retirement age will rise, in accordance with the labour shortages that later cause pension system disruption and increased taxation to meet the demand of the country. As people live longer, governments may face rising pension liabilities if the retirement plans are not adjusted properly. When there is a sudden increase in the number of retirees, tax rates need to be higher to compensate for the country's financial capacity, especially to support this group of population (Cooley *et al.*, 2024).

While some research notes that lower fertility rate can initially enhance the workforce, in the long run, the ageing population outpaces the growth leading to an increase in fiscal limitations. As the population undergoes ageing, demographic structure continues to change, necessitating greater efforts by authorities and working groups to support the elderly especially by providing the needs of the older population. On the other hand, another study shows that high fertility rate might increase the probability of youth unemployment even if it may expand the workforce. Conversely, low fertility rate may cause older workers to remain employed in order to make compensation for a shortage of young workers. Since a balanced population fosters social stability, economic growth, and worker productivity, preserving population sustainability is essential for the nation's long-term well-being.

CONCLUSION

This scoping review provided an analysis of existing literature on knowledge and perception of the public regarding fertility rate, as well as how shifts in fertility rate over time influence demographic dynamics in a population. It is understood that fertility rates are shaped by more than just knowledge about reproduction, but also by social expectations, socioeconomic factors, individual career goals and awareness of relevant policies. Although this issue is presented as a national concern, some individuals remain indifferent about its implications, resulting in less effective policies, ultimately burdening the nation's economy, social welfare and healthcare system. It can also shift the population structure, further complicating the efforts to achieve long-term sustainability. Overall, the findings show that declining fertility rates can cause a wide range of demographic challenges, making it crucial for future strategies to study and consider all variables that influence individual reproductive choices. Therefore, it is very important for authorities to have a thorough understanding of these issues, including social norms and economic pressures, especially when seeking both effective and widely accepted solutions to the current demographic issue.

This study is, however, subject to several limitations. There is a limited number of publications directly related to fertility rates, thereby restricting the depth of analysis for this specific area. The studies included in the review also present inconsistencies in data in terms of geographic coverage,

target population and methodological approaches that ultimately hindered the ability to conduct comprehensive data analysis to form a generalisable conclusion that is applicable to all countries included. Additionally, many studies introduced intricate and complex economic terminology beyond the scope of this review. The uneven distribution of studies across all themes may also lead to the imbalance of review analysis, resulting in a less consistent conclusion. Future research should implement broader and more standardized approaches, together with uniform population samples. It is also recommended to integrate ideas from additional fields to gain a more complete understanding of the subject matter. Lastly, a more focused and expanded search strategy is recommended to target inadequately represented themes to secure a more comprehensive synthesis of these topics in the research.

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Note: The supplementary file accompanying this paper (*Supplementary 1*) is provided as a separate attachment.

Supplementary Table 1

Overview of Included Studies: Country of origin, key findings on fertility rate knowledge, perception, and demographic impacts

No.	Title	Author/s (Year)	Country	Key findings related to knowledge and perception on fertility rate	Effects of fertility rate on demographic trend	Key topics
1.	Ageing in Russia: a Regional Appraisal	Gietel-Basten et al. (2020)	Russia	-	Study indicates that Russia is becoming an ageing country due to its low fertility rate. This is demonstrated by the increasing proportion of elderly, alongside rising dependency ratios and median ages.	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain
2.	Aging population and effects on labour market	Serban (2012)	European Union countries	-	The study showed that low fertility, an increased older population, and longer life expectancy lead to higher elderly dependency ratios and increase demand for low-skilled	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain

immigrant labour. These changes shift occupational structures, pressuring social security systems, and affect the size and quality of the working-age population, all of which impact the labour market.

3.	All-time low period fertility in Finland: Demographic drivers, tempo effects, and cohort implications	Hellstrand et al. (2020)	Finland	-	Studies indicate a persistent drop in fertility rates, particularly among women under 30, with decline also observed among older women. This resulted in a trend of decline in first-order births, especially among women aged 25 to 29, as well as a decline in second and higher-order births. Thus, more young	1. Ageing Population and Demographic Shifts



women remain
childless.

4.	Assessing intentions for a third child among Chinese adults: A nationwide online survey regarding China's 3-child policy	Yue et al. (2023)	China	Research revealed that despite widespread support for the three-child policy aimed to increase fertility rate, most individuals show little to no desire to have a third child.	The study suggested an acceleration of the ageing population alongside a decrease in overall population sizes.	1. Public Understanding and Perception of Fertility Rate and Related Policies 2. Personal Perception, Opinion and Cultural Norms Toward Childbearing 3. Ageing Population and Demographic Shifts
5.	Fertility attitudes and intentions among postgraduate female and male students in China: A qualitative focus group study	Duan et al. (2025)	China	The study demonstrates that individuals believe birth policies have little impact on fertility decisions and are generally given minimal consideration. Also, many expressed a lack of knowledge about these policies, indicating childbearing	-	1. Public Understanding and Perception of Fertility Rate and Related Policies 2. Personal Perception, Opinion and Cultural Norms Toward Childbearing



decisions are
largely shaped
by personal
opinion.

6.	The clinical consequences of an ageing world and preventive strategies	Lunenfeld & Stratton (2013)	Israel and United States	-	Study suggested that low fertility rate leading to an ageing population cause increased financial strain on government and the working population. Besides, demand for health and social services will rise.	1. Ageing Population and Demographic Shifts 2. Health and Social Care Challenges 3. Shifting support ratio and economic system strain

7.	Uneven geographies: ageing and population dynamics in Latvia	Krisjane et al. (2023)	Latvia	-	The study indicated that a low birth rate reduces population growth, leading to an ageing population. This demographic transition contributed to urban shrinkage, an increasing median age and noticeable gender imbalance	1. Ageing Population and Demographic Shifts

					among those aged 65 and older.	
8.	A Study on the Impact of the Aging Population-Driven Silver Economy on Social Development and Healthcare Systems in Russia	Hua (2024)	Russia	-	The study showed that low fertility rates lead to an ageing population and a shrinking working-age population, resulting in a decline in the labor force ratio. However, this challenge can be mitigated by involving older adults in economic activities as a highly educated workforce.	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain
9.	A Survey on Public Perceptions of Low Fertility: A Social Research Panel Study	Kim et al., (2022)	South Korea	Research stated that negative perceptions among women in their 20s and 30s about marriage, delivery, and the need for children largely influence fertility rate.	-	1. Public Understanding and Perception of Fertility Rate and Related Policies 2. Personal Perception, Opinion and Cultural Norms Toward Childbearing

On the contrary, the presence of institutional support increases their willingness to have children.

10.	Ageing in Asia—The Japan Experience	Tsuno & Homma (2009)	Japan	-	The study suggested that an ageing population leads to an increasing median age and shift in the population age structure. It also highlighted the need for healthcare systems to provide adequate long-term care for the elderly.	1. Ageing Population and Demographic Shifts 2. Health and Social Care Challenges
11.	Ageing of rural populations in Eastern Poland	Kiniorska & Pytel (2022)	Poland	-	Study indicates that Poland is experiencing population ageing, with changes in its age structure and rising life expectancy because of low fertility rate.	1. Ageing Population and Demographic Shifts 2. Health and Social Care Challenges 3. Shifting support ratio

No growth was observed in the pre-working and working-age populations, with only the post-working age group increasing. This trend results in greater dependency on the pre-working age population, declining pension system, a shrinking workforce, and rising health and care costs for seniors.

12.	Birth Rate Transition in the Republic of Korea: Trends and Prospects	Yun et al. (2022)	South Korea	-	Study stated that Korea is becoming an ageing society due to critically low fertility, with an increasing trend in the age at which women become pregnant and give birth.	1. Ageing Population and Demographic Shifts

13.	Cross-sectional pregnancy survey on fertility trends and pregnancy knowledge in Singapore	Tan et al. (2011)	Singapore	-	Research showed that the rate of childlessness among ever-married women aged 30–39 increased, while it remained constant among younger women. This trend led to rising female workforce participation, weakened extended family ties, delayed marriage, and a more educated society.	1. Personal Perception, Opinion and Cultural Norms Toward Childbearing 2. Shifting support ratio and economic system strain
14.	Decomposition of regional convergence in population aging across Europe	Kashnitsky et al. (2017)	European Union countries	-	The study indicated that demographic transition led to population aging causing a decrease in the total support ratio (TSR) due to changes in the non-working-age and working-age groups.	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain



15.	Division of domestic labour and lowest-low fertility in South Korea	Kim (2017)	South Korea	The study found that women's perception of personal burden plays a role in fertility intention than factor like age, indicating that reproductive decisions are shaped more by individual perception than demographic concern like decreasing birth rate. This highlights the importance of parenting support systems.	-	1. Personal Perception, Opinion and Cultural Norms Toward Childbearing
16.	Fertility Intention to Have a Third Child in China following the Three-Child Policy: A Cross-Sectional Study	Ning et al., (2022)	China	Study found that most participants had a low level of knowledge of the three-child policy aimed at increasing fertility rates. While many agreed with the policy's goal to boost reproduction,	The study implied that low fertility rate leads to rapid population ageing, creating a demographic with more older people and fewer young individuals. This trend may	1. Public Understanding and Perception of Fertility Rate and Related Policies 2. Ageing Population and Demographic Shifts

				some perceived it as impractical and called for reform.	result in labour shortages and complications for the healthcare system.	3. Health and Social Care Challenges 4. Shifting support ratio and economic system strain
17.	Fertility rates and the postponement of first births: a descriptive study with Finnish population data	Roustaei et al. (2018)	Finland	-	Study suggested that a low fertility rate is linked to an increasing trend of childlessness among certain age groups of women. Besides, the mean maternal age at first birth has been steadily rising.	1. Personal Perception, Opinion and Cultural Norms Toward Childbearing 2. Ageing Population and Demographic Shifts
18.	Critical Issues of Human Resource Management in Ageing Care Centres: Case of Malaysia	Isa et al. (2023)	Malaysia	-	The study demonstrated that an aging population is occurring as the number of people over 60 exceeds the number of children under 5. This trend has also led to a shortage of workers in the aged care industry.	1. Ageing Population and Demographic Shifts 2. Health and Social Care Challenges 3. Shifting support ratio and economic system strain

19.	'Low' Fertility And Population Replacement In Scotland	MacInnes & Diaz (2006)	Scotland	-	Study indicated that decreasing fertility rate leads to population decline and rapid ageing which will affect future age structure. Consequently, it raises the support ratio proportion of economically active individuals over dependent elderly since there are fewer young dependents.	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain
20.	Population Aging in Korea: Implications for Fiscal Sustainability	Cho & Kim (2021)	South Korea	-	Study stated that a declining fertility rate boosts life expectancy, size, and proportion of the elderly population. This results in a shrinking working population, which negatively impacts economic growth. The labour force's	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain 3. Health and Social Care Challenges

age distribution is also expected to shift, with fewer young workers and more elderly workers. Plus, this trend increases the burden of healthcare expenditures, decreasing tax revenues and raising the need for immigration to fill the labor gap.

21.	Population Growth And Population Aging In Alberta Municipalities	McQuillan & Laszlo (2022)	Alberta	-	Study suggested that decreasing fertility leads to slower population growth, an ageing population and increasing median age of the population. It also contributed to the decline in employment rates as it increased the labour force participation	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain



rate among
older people.

22.	Reimagining Ageing and Later-Life Care: The Perspectives of Childfree Adults in Urban India	Menon (2025)	India	Study found that many childfree individuals are conscious of the limited support available for the elderly, so they proactively plan financially to secure care in later life as the population ages. They prefer private care or personal financial planning rather than depending on the state or their children, perceiving ageing and care as personal obligations.	The study mentioned that the declining fertility rate contributes to an ageing population.	1. Personal Perception, Opinion and Cultural Norms Toward Childbearing 2. Ageing Population and Demographic Shifts 3. Health and Social Care Challenges
23.	Russia's Demographic Decline and the Public Reaction	Shlapentokh (2005)	Russia	Study indicated that the public is largely indifferent to the potential consequences	Study mentioned that low levels of fertility rate cause	1. Public Understanding and Perception of Fertility Rate and



of demographic decline on fertility rates. Additionally, many individuals believe that low birth rates are a byproduct of modernisation rather than a demographic crisis. However, many acknowledged that the economy is being impacted by a shrinking labor force.

population decline.

Related Policies

2. Ageing Population and Demographic Shifts

3. Shifting support ratio and economic system strain

24.	The Changing Demographic Profile Of Middle Eastern Countries	Bawazir et al. (2023)	Middle East countries	-	Study observed that population ageing is increasing in certain Middle Eastern countries due to low fertility rates. This causes changes in the population age structure with a higher proportion of working age groups	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain

compared to young dependents, leading to a low young dependency ratio and high old dependency ratio. While this initially produces a strong workforce, it is only temporary as the population continues to age. High number of working age people also contributes to an increase in unemployment among them.

25.	The Impact of Ageing Population on Malaysian Economic Growth	Yusuf et al. (2020)	Malaysia	-	Study stated that lowered fertility rate causes an aging population which can cause labor shortage but may also stimulate economic growth. Demographic trends show a decreasing	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain

number of young people and an increase in elderly as life expectancy rises. In the short run, the working-age population will expand while the youth-age group declines, potentially boosting productivity. However, over the long run, the dependency ratio will rise due to an increasing old-age dependency ratio.

26.	The impact of population aging and fertility rate on economic growth in Malaysia	Karim et al. (2023)	Malaysia	-	Study implied that the ageing population is often a consequence of decreasing fertility rate. As the population declines, there will be a shortage of workers, which could negatively impact the	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain



economy in the long term.

27.	The Implications of Ageing and Migration for the Future Population, Health, Labour Force and Households of Northern England	Rees et al. (2013)	England	-	The study indicated that the nation would face an ageing population, with a shrinking working-age population leading to a reduced workforce and an increasing Old Age Dependency Ratio (ODR).	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain
28.	Trends and Age-Period-Cohort Effects of Fertility Rate: Analysis of 26,224 Married Women in Taiwan	Tzeng et al. (2019)	Taiwan	-	Study suggested that low fertility could lead to labor shortages, population ageing, a decline in the demographic dividend, and a shortfall of workers for the long-term care of the elderly. Besides, falling cohort fertility among younger generations was noted as a	1. Ageing Population and Demographic Shifts 2. Health and Social Care Challenges 3. Shifting support ratio and economic system strain



					demographic trend.	
29.	Trends in total fertility rate in Ghana by different inequality dimensions from 1993 to 2014	Agbaglo et al. (2022)	Ghana	The study suggested that poor individuals often perceive children as a source of security for their future, contributing to a higher fertility rate among this group.	The study stated that the high fertility rate contributes to overpopulation , which may help grow the labor force but can also cause other issues like unemployment and inadequate infrastructure.	1. Personal Perception, Opinion and Cultural Norms Toward Childbearing 2. Shifting support ratio and economic system strain
30.	An inevitably ageing world: analysis on the evolutionary pattern of age structure in 200 countries	Ma et al. (2024)	China	-	Study implied that ageing population led to changes in the age structure of the working-age population causing a declining labour force.	1. Ageing Population and Demographic Shifts 2. Shifting support ratio and economic system strain

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DETERMINANT OF PREVENTABLE STILLBIRTH AMONG PREGNANT WOMEN IN MALAYSIA: A FIVE-YEAR RETROSPECTIVE COHORT STUDY

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ABSTRACT

Preventable stillbirth remains a pressing concern, as many deaths arise from modifiable factors that could be addressed through timely intervention. This study aims to describe the prevalence of preventable stillbirth among pregnant women in Malaysia and to identify associated determinants of preventable stillbirth over five years, from 2019 to 2023. This retrospective cohort study analysed 11,385 stillbirth cases among Malaysian women (2019–2023) using the national Stillbirth and Under-Five Mortality Reporting System (SU5MR- I/2012). Multiple logistic regression was applied to identify factors associated with preventable stillbirth. Overall, 3013 (26.5%) of stillbirths were classified as preventable and 8372 (73.5%) as non-preventable. National rates remained stable, ranging from 4.6 to 5.2 per 1,000 births, showing a consistent trend. Factors that were positively associated with preventable stillbirth were father's educational level (AOR 1.25, 95% CI 1.06–1.49), high household income (AOR 1.28, 95% CI: 1.03-1.60), delivery at <22 weeks (AOR 2.78, 95% CI 1.33–5.78) and between 22 - <28 weeks (AOR 2.08, 95% CI: 1.78–2.43) and absence of perinatal conditions (AOR 3.77, 95% CI: 3.16–4.50). Conversely, several factors were associated with reduced likelihood of preventable stillbirth. These included unmarried status (AOR 0.66, 95% CI: 0.53-0.81), hypertensive disorders (AOR 0.58, 95% CI 0.51–0.67), underlying comorbidities (AOR 0.84, 95% CI 0.76–0.93), instrumental delivery (AOR 0.61, 95% CI: 0.38-0.97), operative delivery (AOR 0.82, 95% CI:0.72–0.92), insufficient antenatal care provided (AOR 0.55, 95% CI 0.46-0.66), non-compliance with medical advice (AOR 0.31, 95% CI: 0.26–0.37), inadequate ANC visit (AOR 0.80, 95% CI 0.70-0.91), delivery at non-government hospital with specialist (AOR 0.79, 95% CI 0.70-0.90) and unsuitable place for delivery (AOR 0.68, 95% CI 0.50-0.91). Preventable stillbirths in Malaysia are mainly linked to preterm delivery, paternal educational background, and absence of perinatal conditions, addressing these modifiable gaps is vital to achieve ENAP goals.

Keywords: Preventable Stillbirth, Pregnancy, Reproductive Health, ENAP, Under-Five Mortality.

INTRODUCTION

Stillbirth is a profoundly adverse outcome for families and a significant indicator of maternal and perinatal health care quality. It remains a critical yet underrecognized global challenge, with an estimated 1.9 million stillbirths occurring in 2023, with the majority reported from low and middle-income countries (LMICs). This translates into a global stillbirth rate of 14.3 per 1,000 total births (UNICEF, 2025).

According to the Stillbirth and Under-Five Mortality Reporting System (SU5MR), stillbirth is defined as the birth of a fetus with no signs of life at or after 22 completed weeks of pregnancy, or with a birth weight of 500 grams or more, regardless of gestational age (Ministry of Health, 2013). This definition aligns with the WHO's lower threshold for high and middle-income countries, ensuring systematic surveillance of early fetal losses (Blencowe et al., 2016; Kelly et al., 2021; Tavares Da Silva et al., 2016).

Globally, the Every Newborn Action Plan (ENAP) launched by WHO and UNICEF in 2014, targets reducing stillbirth rates to ≤ 12 per 1,000 births by 2030. Malaysia has adopted ENAP strategies, including universal antenatal coverage, perinatal audits via SU5MR, and strengthened referral systems. (Hug et al., 2024; World Health & Unicef, 2014; World Health et al., 2020).

Despite these advances, preventable stillbirths continue to account for a considerable burden. In Malaysia, despite broad improvements in maternal and perinatal health services, stillbirth rates remain relatively high as compared to other developed countries such as Singapore, with the stillbirth rate of 2.33 per 1000 total births which, Malaysia's rate is more than double (Khobragade et al., 2021). Over the last decade, the national rate has plateaued at approximately 4.3- 4.6 per 1,000 live births with an occasional spike of 5.2 per 1,000 live births in 2016 (Ministry of Health, 2017; Sutan et al., 2019). To date, comprehensive and nationally representative analyses examining determinants of preventable stillbirth in Malaysia remain scarce. Most previous research has been fragmented, limited to single tertiary centres or district-based studies, which lack generalizability and national representativeness (Abu Bakar et al., 2023; Mihat, 1991; Sutan, 2013). While stillbirth rates are well documented, the preventability dimension is under-researched.

Several global and regional studies discovered the substantial role of modifiable factors in stillbirths, particularly in LMICs. For example, reviews show that up to 40% of stillbirths occur within the intrapartum stage and are potentially preventable with timely, quality antepartum care (Blencowe et al., 2021; Khalil et al., 2024). A comparative study of perinatal outcomes between developing and developed nations, with reference to Malaysia from 2010 to 2018 found that in developing and emerging countries, preterm birth, hypertensive disorders of pregnancy, prematurity with low birth weight and congenital malformations were leading causes of perinatal mortality (Khobragade et al., 2021). In contrast, in developed nations, congenital malformations, chromosomal anomalies and antepartum hemorrhage (APH) were the predominant causes (Khobragade et al., 2021). In Malaysia, a study on preventable perinatal deaths have highlighted that inadequate antenatal care, non compliance to medical advice, and deliveries in unsuitable facilities are major contributors to preventable stillbirths and neonatal deaths (Norain et al., 2023).

However, less is known about the determinants of preventable stillbirth in broader aspects. This study aims to describe the prevalence of preventable stillbirth among pregnant women in Malaysia and to identify associated determinants, including sociodemographic, maternal and fetal factors, antenatal complications, antenatal care and intrapartum factors over five years, from 2019 to 2023,

guided by a conceptual framework model by Di Stefano et.al and Lawn et.al on variable selection for potential risk factors of stillbirth. (Di Stefano et al., 2021; Lawn et al., 2010). The findings are intended to provide evidence for targeted interventions and inform updates to antenatal care guidelines and clinical practice, thereby advancing Malaysia's progress toward ENAP targets in reducing preventable stillbirths.

METHODOLOGY

Study Design

This retrospective cohort study analysed data of SU5MR from Child Health Sector, Family Health Development Division, Ministry of Health Malaysia. SU5MR-I/2012 is the national, standardized reporting platform for stillbirths and under-five deaths since been introduced in 2012 (Ministry of Health, 2013). SU5MR-I/2012 uses a structured review process from various levels; hospital, district and state technical meetings that determine the underlying cause of death using 10th revision of the International Classification of Diseases (ICD-10), presence of substandard care, and classify deaths as preventable or not preventable. Preventable deaths are further classified into those preventable through medical intervention and those preventable through non-medical interventions (Family Health Development Division, 2017). The latter includes stillbirths that could potentially be avoided through public health policies, social interventions, or patient-related factors (Family Health Development Division, 2017).

Study population and eligibility criteria

The study included all Malaysian pregnant women with a stillbirth outcome reported in SU5MR between 1 January 2019 and 31 December 2023. A universal sampling approach was applied. Using Open epi, the minimum required sample size was estimated to be 8,846 based on odds ratio of 1.30 reported in a previous study on causes and factors associated with stillbirth in low-and middle-income countries (Aminu et al., 2014). We excluded records for non-Malaysian women due to differences in antenatal care received, records without outcome data, and records with incomplete or invalid entries for the study's prespecified variables. Consequently, the analysis included 11,385 cases that met the inclusion criteria.

Outcome measure

The primary focus of this study was to assess preventable stillbirth as the primary outcome, according to factors listed in the SU5MR form. Preventable stillbirth was defined per the Ministry of Health Malaysia SU5MR-I/2012 guidelines as deaths avoidable through timely medical, health system, or social interventions, excluding those due to major congenital anomalies or unavoidable maternal conditions. Classification was determined by state-level Under-Five Mortality Review Committees based on standardized SU5MR forms during the mortality meeting. The system has been implemented nationwide since 2012, with regular audits and supervisory reviews ensuring consistent and validated classification.

Independent variables

This analysis selected several determinants as listed in the SU5MR system. These include sociodemographic factors, maternal factors, present of antenatal complications, antenatal care factors, intrapartum factors and fetal factors as presented in Table 1.

Table 1 : List of independent variables and operational definition

Variable	Operational Definition	Classification
Sociodemographic factors		
State	Patient's address as documented in antenatal card	Johor, Kedah, Kelantan, Melaka, Negeri Sembilan, Pahang, Perak, Perlis, Pulau Pinang, Sabah, Sarawak, Selangor, Terengganu, WP Kuala Lumpur, WP Labuan, WP Putrajaya
Age	Patient's age in completed years	Patient's age in completed years
Ethnicity	Patient's race	Malay, Chinese, Indian, Indigenous Sabah, Indigenous Sarawak, Orang Asli, Others
Residence	Patient's address as documented in SU5MR	Unknown Rural Urban
Mother's education level	Patient's education level and background	No formal education Primary Secondary College/university
Father's education level	Spouse education level and background	No formal education Primary Secondary College/university
Marital status	Patient's marital status	Unknown Married Unmarried Divorced Widow
Household Income (DOSM 2022)	Total household's income	< RM5,250 RM5,250- RM11, 819 >RM11,820
Mother's occupational group	Patient's employment status	Unknown/ not stated Unemployed/student Self employed/housewife Private Public
Father's occupational group	Spouse employment status	Unknown/ not stated Unemployed/student Self employed/housewife Private

		Public
Maternal factors		
Gravidity	Patient's total number of pregnancy including stillbirth	1st pregnancy 2nd-4th pregnancy ≥5th pregnancy
Medical problems	Patient's underlying medical problem during pregnancy as been diagnosed according to criteria by the attending doctors	Hypertensive disorders of pregnancy Diabetes Mellitus Heart disease in pregnancy HIV Syphilis Vaginal bleeding Persistent anemia in pregnancy
Total counts of medical comorbidities	Total number of underlying medical problems for a patient	1,2,3,4,5, 6
History of abortion	History of abortion in previous pregnancy	Yes No
Present of antenatal complications		
Antenatal complication diagnosed during pregnancy	Antenatal complication diagnosed during pregnancy as documented in antenatal card	Prolonged rupture of membrane Preterm labour IUGR Post Date
Antenatal care factors		
Insufficient antenatal care provided/ Unbooked	Insufficient antenatal care of the mother as being decided by attending doctor	Yes No Not applicable
Non-compliance to medical advice/treatment	Mother not compliant to medical advice or treatment as being decided by attending doctor	Yes No Not applicable
Inadequate Fetal Monitoring	Fetal well being was not properly monitored as being decided by attending doctor	Yes No Not applicable
Inadequate Maternal Monitoring (delay in action taken by patient)	Mother not aware about her own health as being decided by attending doctor	Yes No Not applicable
Inadequate Maternal Monitoring (delay in action taken by provider)	Mother was not properly monitored as being decided by attending doctor	Yes No Not applicable
Inadequate Maternal Monitoring	Mother's test/investigation result is misinterpreted by attending doctor	Yes No Not applicable

(misinterpretation of test)		
Adequacy of antenatal care visits	Defined as number of antenatal care visits either adequate (> 8 visits) or inadequate (< 8 visits) or unbooked.	Adequate (> 8 visits) Inadequate (< 8 visits) Unbook Unknown
Intrapartum factors		
Place of delivery	Delivery at government hospital with specialist or not	Yes No
Unsuitable place of delivery	Place of delivery when stillbirth occurred with certified birth attendant or non certified birth attendant	Suitable Not suitable
Inadequate intrapartum monitoring	Mother not monitored well during intrapartum by attending doctor	Yes No Not applicable
Delivery type	Type of delivery when stillbirth occurred	Vaginal Instrumental Cesarian
Fetal factors		
Gestational age at delivery	Gestational age when stillbirth occur (in week)	< 22 weeks 22- <28 weeks >28 weeks
Birth weight of fetus	Documented birth weight of the stillbirth fetus	In gram
Fetal gender	Documented fetus sex after delivered	Indetermine Male Female
Cause of death according ICD-10 diagnosis	Defined as present of condition from perinatal period or not	Yes No

Statistical Analysis

A modified line listing of the variables of interest was prepared in Microsoft Excel for data extraction and cleaning. Statistical analyses were conducted using JASP (Version 19; Jeffrey's Amazing Statistics Program). Descriptive statistics were used to summarise the characteristics of the study population, the components within each determinant domain, and the study outcomes. Categorical variables were presented as frequencies and percentages, while continuous variables were summarised using means with standard deviations or medians with interquartile ranges, as appropriate.

Next, multiple logistic regression was performed to identify the factors associated with preventable stillbirths among pregnant women in Malaysia. Before executing multiple logistic regression, a preliminary step involved conducting individual logistic regressions for each independent variable concerning the dependent variables. Crude odd ratios (OR) were employed to gauge the strength of these associations. For subsequent multiple logistic regression incorporated variables with a p-

value <0.25 in the univariate analysis. Stepwise LR method was then applied to select the best regression model. The outcomes were presented as Adjusted Odds Ratios (AOR) and the 95% confidence interval, and a p-value <0.05 was considered statistically significant.

Multicollinearity was assessed using the variance inflation factor (VIF), and all regression assumptions were verified. Model fit was evaluated using the lowest value of deviance, Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and the likelihood ratio test. Pseudo- R^2 values were reported as additional measures of fit. Model performance was assessed using classification accuracy, sensitivity, specificity, and the area under the receiver operating characteristic curve (AUC). Additionally, an exploration of interaction terms was conducted. The CoxSnell and Nagelkerke R-squared values characterized the variance explained by the model.

Missing Data

Of the 14,359 records initially identified, 11,820 were eligible after excluding 2,539 non-Malaysian women as shown in Figure 1. Among these eligible cases, 435 records contained incomplete data and were subsequently removed, representing 3.68% of the dataset. Given the small proportion of missing data, multiple imputation was not performed.

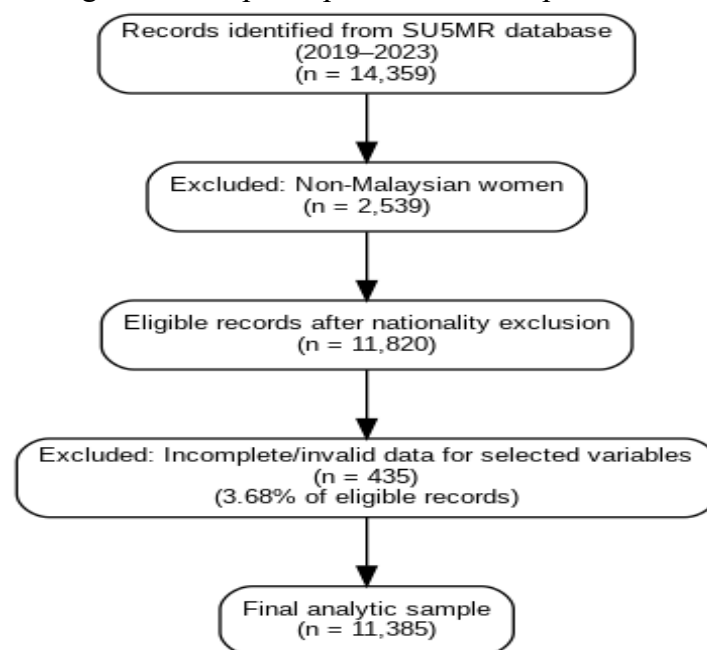


Figure 1: Flow chart of inclusion into study population

Ethics Approval

Ethical approval for this research project was obtained from the Medical Research Ethics Committee (MREC), Ministry of Health Malaysia (NMRR ID-25-00416-TW6). Data were anonymized, and all data had been fully de-identified before analysis. Ethical approval for this study waived the requirement for informed consent, as there was no direct contact with participants.

RESULTS

Table 2 shows the prevalence of stillbirth among pregnant women in Malaysia from 2019 to 2023. Among 11,385 cases included in the analysis, 3013 (26.5%) were classified as preventable while 8372 (73.5%) were categorized as non-preventable. The national stillbirth rate demonstrated relative stability over the study period, with incident rates of 4.6, 4.9, 5.2, 5.1, and 5.0 per 1,000 births from 2019 to 2023, respectively. Figure 2 shows the proportions of preventable and non-preventable stillbirths in each year.

Table 2: Prevalence of Stillbirth Among Pregnant Women in Malaysia from 2019-2023 (N= 11,385)

Year	Number of stillbirth reported	Livebirth ^a	SBR ^b
2019	2277	489863	4.6
2020	2335	471504	4.9
2021	2314	439744	5.2
2022	2187	423124	5.1
2023	2272	455761	5.0

^a Livebirth data from DOSM 2025; ^b SBR: Stillbirth Rate per 1,000 births

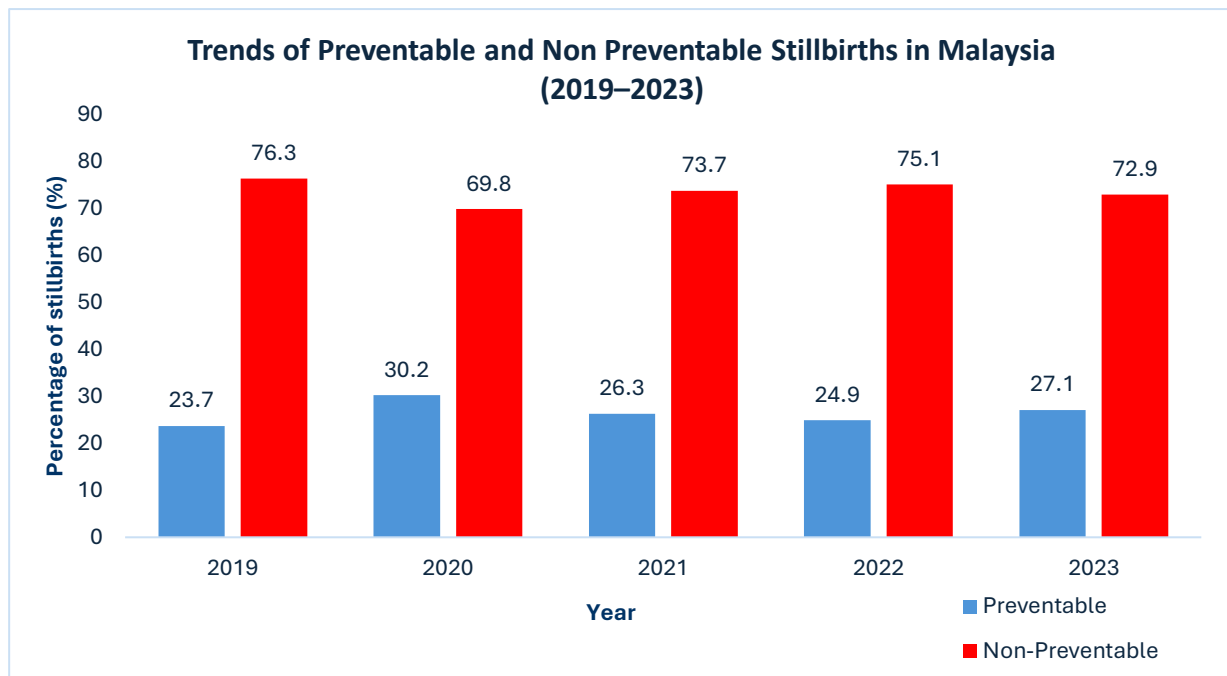


Figure 2: Trend of preventable and non-preventable stillbirths in Malaysia (2019-2023)

Table 3 below describe the sociodemographic characteristic of the women with stillbirth outcome. The highest proportion of stillbirths was reported in Selangor (2,309, 20.3%), followed by Kedah (1,457, 12.8%) and Sabah (1,274, 11.2%). The mean maternal age of mothers with a stillbirth outcome was 30.9 years (SD $\pm$ 6.1 years). The majority of mothers were Malay ethnicity (7,881, 69.2%), married (10,404, 91.4%), with secondary education as the highest attained level for both

mothers (6,109, 53.6%) and their husbands (5,492 48.2%). Most resided in urban areas (8,053,70.7%) and reported a household income below RM 5,250 (9,604, 84.3%).

Table 3: Sociodemographic characteristics of pregnant women with stillbirth outcome from 2019 to 2023 (N=11385)

Variable	Frequency (n)	Percentage (%)	Mean +/- SD
State			
Kedah	1457	12.8	
Johor	775	6.8	
Kelantan	777	6.8	
Melaka	317	2.8	
Negeri Sembilan	411	3.6	
Pahang	615	5.4	
Perak	801	7.0	
Perlis	94	0.8	
Pulau Pinang	552	4.8	
Sabah	1274	11.2	
Sarawak	759	6.7	
Selangor	2309	20.3	
Terengganu	619	5.4	
WP Kuala Lumpur	543	4.8	
WP Labuan	33	0.3	
WP Putrajaya	49	0.4	
Age			30.9 (+/- 6.1)
Mother's age group (years)			
<19	395	3.5	
20-24	1316	11.6	
25-29	3117	27.4	
30-34	3156	27.7	
35-39	2502	22.0	
40-44	827	7.3	
45-49	72	0.6	
Ethnicity			
Malay	7881	69.2	
Chinese	877	7.7	
Indian	678	6.0	
Bumiputera Sabah	1231	10.8	
Bumiputera Sarawak	467	4.1	

Orang Asli, Unknown, Others	251	2.2
Residence		
Unknown	438	3.8
Rural	2894	25.5
Urban	8053	70.7
Mother's Education level		
Unknown, No formal education	622	5.5
Primary education	630	5.5
Secondary education	6109	53.7
College/university	4024	35.3
Father's Education level		
Unknown, No formal education	1904	16.7
Primary education	534	4.7
Secondary education	5492	48.3
College/university	3455	30.3
Marital status		
Unknown	95	0.8
Married	10404	91.4
Unmarried	834	7.3
Divorced	41	0.4
Widow	11	0.1
Household Income Group		
Below RM 5,250	9604	84.3
Between RM 5,250- RM 11,919	1054	9.3
Above RM 11,820	727	6.4
Mother's Occupational Group		
Unknown	434	3.8
Unemployment/ student	278	2.4
Self employed/ housewife	5677	49.9
Private	3742	32.9
Public	1254	11.0
Father's Occupational Group		
Unknown	1523	13.4
Unemployment/ student	106	0.9
Self employed/ housewife	1163	10.2
Private	7186	63.1
Public	1407	12.4

Table 4 demonstrated the association of independent variables with preventable stillbirth. Among sociodemographic variables, adjusted analyses revealed that families with household income above RM 11,820 (T20) have 1.28 times higher likelihood of having preventable stillbirth compared to B40 families who earned less than RM 5,250 per month (AOR 1.28, 95% CI: 1.03-1.60, $p = 0.029$). Father who attained education until college or university level have 1.25 higher likelihoods of getting preventable stillbirth compared to those with no formal education (AOR = 1.25, 95% CI: 1.06-1.49, $p = 0.01$). Conversely, unmarried women have a 0.66 times reduced likelihood of having preventable stillbirth (AOR = 0.66, 95% CI: 0.53-0.81, $p < .001$), compared to married women. Other factors, including mother's age, mother's education level, ethnicity, father's and mother's occupational group, were significant in univariate analysis but not in the adjusted model.

Among maternal factors, women who had underlying medical problems and hypertensive disorders of pregnancy both reduced the likelihood of preventable stillbirth (AOR = 0.84; 95% CI: 0.76–0.93; $p = 0.001$; AOR: 0.58; 95% CI: 0.51–0.67; $p < 0.001$), respectively, compared to women without underlying medical problems and hypertensive disorders of pregnancy.

For antenatal care factors, pregnancies with inadequate antenatal care visits (< 8 visits) had 0.80 times reduced likelihood of preventable stillbirth (AOR 0.80, 95% CI 0.70–0.91; $p = 0.001$) compared to women with adequate ANC visit, whereas unbook pregnancies also exhibited reduced risk of preventable stillbirth (AOR 0.35, 95% CI 0.27–0.46; $p < 0.001$). Women with insufficient or unbooked ANC have less likelihood of preventable stillbirth (AOR 0.55, 95% CI: 0.46–0.66; $p < 0.001$) compared to women who received sufficient ANC. Pregnant women who were non-compliant with medical advice or treatment also reduced the likelihood of preventable stillbirth (AOR 0.31, 95% CI: 0.26–0.37; $p < 0.001$) compared to those who were compliant.

For intrapartum factors, deliveries occurring at a non-government hospital with specialist and inappropriate facilities both reduced the likelihood of preventable stillbirth (AOR = 0.79, 95% CI: 0.70–0.90, $p < 0.001$; AOR 0.68, 95% CI 0.50-0.91, $P = 0.01$), respectively. Both instrumental (AOR = 0.61, 95% CI: 0.38–0.97, $p = 0.035$) and caesarean mode of deliveries (AOR = 0.82, 95% CI: 0.72–0.92, $p < 0.001$) were associated with a lower likelihood of having preventable stillbirth as compared to vaginal delivery.

In terms of fetal factors, the absence of condition from perinatal period was 3.77 times higher likelihood of having preventable stillbirth (AOR 3.77, 95% CI: 3.16–4.50, $p < 0.001$) compared to fetus with perinatal conditions. Deliveries at < 22 weeks (AOR 2.78, 95% CI: 1.33–5.78, $p = 0.006$) and deliveries between 22– < 28 weeks (AOR 2.08, 95% CI: 1.78–2.43, $p < 0.01$) had a higher likelihood of having preventable stillbirth compared to fetuses delivered at 28 weeks and above. Fetal gender also has a significant association with risk of preventable stillbirth, where male and female sex reduced the likelihood of preventable stillbirth compared to fetus with an indeterminate status (AOR 0.51, 95% CI 0.29-0.88, $p = 0.016$; AOR 0.54, 95% CI 0.31-0.94, $p = 0.029$), respectively.

Several variables have high VIF therefore, those variables were dropped from the final model. Multicollinearity was reassessed and the variables of significant predictors were < 2.435 . The final model accounted for the variance explained, ranging between 18.0% (Cox and Snell R Square) and 26.2% (Nagelkerke R Square). It demonstrated an 77.6 % accuracy in correctly classifying the type of stillbirth. The final model showed good fit (Deviance = 10904.454; AIC = 10966.454; BIC = 11193.996) and strong performance (94.8% sensitivity, 29.7% specificity, AUC = 77 %).

Table 4: Distribution of all factors according to preventable and non-preventable stillbirths and factors associated with preventable stillbirths (N= 11, 385)

Domains	Preventable stillbirths number (%)	Non- Preventable stillbirths number (%)	Multiple Logistic Regression		
			Odds Ratio (95% confidence interval)		p-value
			Unadjusted OR	Adjusted	
Sociodemographic factors					
Mother's age	-	-	1.01 (1.00, 1.01)		0.17*
Ethnicity					
Malay	1937 (24.58%)	5944 (75.42%)	1.00 (Reference)		
Chinese	156 (17.79%)	721 (82.21%)	1.51 (1.26,1.80)		< .001*
Indian	239 (35.25%)	439 (64.75%)	0.60 (0.51, 0.71)		< .001*
Bumiputera Sabah	468 (38.02%)	763 (61.98%)	0.53 (0.47, 0.60)		< .001*
Bumiputera Sarawak	141 (30.19%)	326 (69.81%)	0.75 (0.61, 0.92)		0.007*
Orang Asli, Unknown, Others	72 (28.69%)	179 (71.31%)	0.81 (0.61, 1.07)		0.138*
Mother's education level					
Unknown, No formal education	199 (31.99%)	423 (68.01%)	1.00 (Reference)		
Primary education	208 (33.02%)	422 (66.98%)	0.95 (0.75, 1.21)		0.699*
Secondary education	1761 (28.83%)	4348 (71.17%)	1.16 (0.97, 1.39)		0.098*
College/university	845 (21.00%)	3179 (79.00%)	1.77 (1.47, 2.13)		< .001*
Father's education level					
Unknown, No formal education	725 (38.08%)	1179 (61.92%)	1.00 (Reference)		
Primary education	173 (32.40%)	361 (67.60%)	1.28 (1.05, 1.57)		0.292
Secondary education	1428 (26.00%)	4064 (74.00%)	1.75 (1.57, 1.95)		0.339
College/university	687 (19.88%)	2768 (80.12%)	2.48 (2.19, 2.81)		0.01
Marital status					
Married	2524 (24.26%)	7880 (75.74%)	1.00 (Reference)		
Unmarried	425 (50.96%)	409 (49.04%)	0.31 (0.27, 0.36)		< .001
Divorce	18 (43.90%)	23 (56.10%)	0.41 (0.22, 0.76)		0.463
Widow	5 (45.46%)	6 (54.54%)	0.38 (0.12, 1.26)		0.838
Unknown	41 (43.16%)	54 (56.84%)	0.42 (0.28, 0.64)		0.06
Household Income Group					
Below RM 5,250	2669 (27.79%)	6935 (72.21%)	1.00 (Reference)		
Between RM 5,250- RM 11,919	208 (19.73%)	846 (80.27%)	1.57 (1.34, 1.83)		0.067
Above RM 11,820	136 (18.71%)	591 (81.29%)	1.67 (1.38, 2.03)		0.029
Mother's Occupational Group					
Public	255 (20.34%)	999 (79.66%)	1.00 (Reference)		
Unemployment/ student	142 (51.08%)	136 (48.92%)	0.24 (0.19, 0.32)		< .001*
Self employed/ housewife	1529 (26.93%)	4148 (73.07%)	0.69 (0.60, 0.80)		< .001*
Private	958 (25.60%)	2784 (74.40%)	0.74 (0.64, 0.87)		< .001*
Unknown	129 (29.72%)	305 (70.28%)	0.60 (0.47, 0.77)		< .001*
Father's Occupational Group					
Public	288 (20.47%)	1119 (79.53%)	1.00 (Reference)		
Unemployment/ student	37 (34.91%)	69 (65.09%)	0.48 (0.32, 0.73)		< .001*
Self employed/ housewife	302 (25.97%)	861 (74.03%)	0.73 (0.61, 0.88)		< .001*
Private	1787 (24.87%)	5399 (75.13%)	0.78 (0.68, 0.90)		< .001*
Unknown	599 (39.33%)	924 (60.67%)	0.40 (0.34, 0.47)		< .001*
Maternal Factors					
Underlying medical problem					
No/Unknown	1062 (23.84%)	3393 (76.12%)	1.00 (Reference)		
Yes	1951 (28.15%)	4979 (71.85%)	0.80 (0.73, 0.87)		0.001

Hypertensive disorders of pregnancy					
No/Unknown	2338 (24.35%)	7264 (75.65%)	1.00 (Reference)	1.00 (Reference)	
Yes	675 (37.86%)	1108 (62.14%)	0.53 (0.47, 0.59)	0.58 (0.51, 0.67)	< .001
Antenatal Care factors					
Insufficient antenatal care provided /unbooked					
No	2202 (22.82%)	7446 (77.18%)	1.00 (Reference)	1.00 (Reference)	
Yes	708 (51.23%)	674 (48.77%)	0.28 (0.25, 0.32)	0.55 (0.46, 0.66)	< 0.001
NA	103 (29.01%)	252 (70.99%)	0.72 (0.57, 0.91)	0.92 (0.67, 1.23)	0.559
Fetal factors					
Gestational age at delivery					
28 weeks and above (1)	2421 (29.33%)	5833 (70.67%)	1.00 (Reference)	1.00 (Reference)	
22- < 28 weeks (2)	326 (12.20%)	2347 (87.80%)	2.99 (2.64, 3.39)	2.08 (1.78, 2.43)	< 0.01
< 22 weeks (3)	11 (14.47%)	65 (85.53%)	2.45 (1.30, 4.67)	2.78 (1.33, 5.78)	0.006
Unknown (4)	255 (66.75%)	127 (33.25%)	0.21 (0.17, 0.26)	0.83 (0.62, 1.12)	0.219
Fetal Gender					
Indeterminate	16 (7.34%)	202 (92.66%)	1.00 (Reference)	1.00 (Reference)	
Male	1624 (27.66%)	4248 (72.34%)	0.21 (0.12, 0.35)	0.51 (0.29, 0.88)	0.016
Female	1373 (25.93%)	3922 (74.07%)	0.23 (0.14, 0.38)	0.54 (0.31, 0.94)	0.029
ICD10 diagnosis					
Condition from perinatal period:					
Yes	2850 (29.99%)	6652 (70.01%)	1.00 (Reference)	1.00 (Reference)	
No	163 (8.66%)	1720 (91.34%)	4.52 (3.83, 5.34)	3.77 (3.16, 4.50)	< .001
Non-compliance to medical advice/treatment					

No	2122 (22.64%)	7249 (77.36%)	1.00 (Reference)	1.00 (Reference)	
Yes	451 (62.12%)	275 (37.88%)	0.18 (0.15, 0.21)	0.31 (0.26, 0.37)	< 0.001
NA	440 (34.16%)	848 (65.84%)	0.56 (0.50, 0.64)	0.78 (0.74, 1.04)	0.13
Adequacy of ANC visit					
Adequate (8 visits or more)	1747 (23.76%)	5605 (76.24%)	1.00 (Reference)	1.00 (Reference)	
Inadequate (< 8 visits)	631 (26.98%)	1708 (73.02%)	0.84 (0.76, 0.94)	0.80 (0.70, 0.91)	0.001
Unbooked	445 (64.77%)	242 (35.23%)	0.17 (0.14, 0.20)	0.35 (0.27, 0.46)	<.001
Not stated/ unknown	190 (18.87%)	817 (81.13%)	1.34 (1.13, 1.58)	1.24 (1.03, 1.48)	0.02
Intrapartum factors					
Place of delivery					
Government Hospital with specialist					
Yes	2324 (25.23%)	6886 (74.77%)	1.00 (Reference)	1.00 (Reference)	
No	689 (31.68%)	1486 (68.32%)	0.73 (0.66, 0.81)	0.79 (0.70, 0.90)	<.001
Unsuitable place (home/hospital) for delivery					
No	2341 (25.13%)	6976 (74.87%)	1.00 (Reference)	1.00 (Reference)	
Yes	168 (54.19%)	142 (45.81%)	0.28 (0.23, 0.36)	0.68 (0.50, 0.91)	0.01
NA	504 (28.67%)	1254 (71.33%)	0.84 (0.74, 0.994)	1.06 (0.92, 1.23)	0.413
Type of delivery					
Vaginal	2325 (24.76%)	7067 (75.24%)	1.00 (Reference)	1.00 (Reference)	
Instrumental	42 (44.68%)	52 (55.32%)	0.41 (0.27, 0.61)	0.61 (0.38, 0.97)	0.035
Caesarean	646 (34.02%)	1253 (65.98%)	0.64 (0.57, 0.71)	0.82 (0.72, 0.92)	< .001

DISCUSSION

The stillbirth rate (SBR) in Malaysia showed a generally consistent pattern between 2019 and 2023, fluctuating slightly from 4.6 to 5.2 per 1,000 births with a slight upward trend after 2020. While descriptive data suggest an upward trend post-COVID, formal statistical testing was not performed. Factors that were positively associated with preventable stillbirth were the father's education level, household income, preterm delivery at <22 weeks and between 22 - <28 weeks, and absence of perinatal conditions. Conversely, several factors were associated with a reduced likelihood of preventable stillbirth. These included unmarried status, women with hypertensive disorders, underlying comorbidities, inadequacy of antenatal care visits, insufficient antenatal care provided, non-compliance with medical advice, delivery at a non-government hospital with a specialist, unsuitable place for delivery, operative and instrumental delivery, and fetal gender.

While global evidence generally indicates that higher parental education including father's education level is associated with lower stillbirth risk due to better health literacy, greater resource access and better care-seeking, our finding that fathers with college or university education had higher odds of preventable stillbirth suggests a different dynamic in Malaysia (Balaj et al., 2021; Blencowe et al., 2021). This unexpected direction might reflect reporting bias, possibly educated fathers more likely to seek formal care and thus have stillbirths recorded as preventable. Other possibilities are due to residual confounding, where educated fathers being more likely captured among high-risk pregnancies with stillbirth outcome.

Additionally, our findings regarding a higher household income correlating with higher odds of preventable stillbirth diverge from most published evidence locally and globally (Norain et al., 2023; Vidiella-Martin et al., 2021). In Malaysia, previous study have demonstrated lower stillbirth risk among higher-income households (Norain et al., 2023). However, the household income thresholds applied in previous studies were not aligned with the official Department of Statistics Malaysia (DOSM) income classification (Department of Statistics, 2023). Standardizing income categories to DOSM benchmarks is essential, as these thresholds form the basis for national socioeconomic stratification (B40, M40, T20), policy development, and health equity monitoring. Using inconsistent or outdated definitions limits comparability across studies and reduces the applicability of findings to national policy frameworks. Alignment with DOSM classification therefore enhances the validity, interpretability, and policy relevance of research on socioeconomic determinants of stillbirth in Malaysia. Furthermore, given the large sample size, even small differences reached statistically significant result. Although higher household income was associated with increased odds of preventable stillbirth, the effect size was modest. This may reflect increased detection and reporting among higher-income groups due to greater healthcare utilization, rather than a true underlying demographic risk.

In this study, unmarried women had reduced likelihoods of experiencing preventable stillbirth compared to the married, while divorced women were at considerably high risk as well but statistically not significant in this study. Marital status is an important social determinant influencing family stability and maternal health outcomes. Much previous research has shown that single, unmarried women face a higher risk of stillbirth compared with married women (Balayla et al., 2011). Conversely, our findings aligned with Ghanaian data from the 2017 Ghana Maternal Health Survey which showed that unmarried status was associated with lower odds of stillbirth compared to married (AOR 0.34; 95% CI: 0.23–0.51) (Ahinkorah et al., 2021). Our contrasting findings suggest that the relation between marital status and stillbirth may vary by sociocultural context, support systems, and health-care access, which could help explain why in our Malaysian

cohort, unmarried women showed reduced odds while divorced women were not statistically different.

Although ethnicity, mother's education and occupational were significant in the univariate analysis, these associations did not persist after adjustment. This suggests that sociodemographic characteristics may influence preventable stillbirth indirectly through more proximal pathways, such as healthcare utilization, antenatal surveillance, or intrapartum management. In Malaysia, where access to maternal health services is relatively equitable across socioeconomic groups, the direct contribution of sociodemographic factors may be diminished. This finding is consistent with previous multicounty analyses and regional studies, which demonstrated that once care-related factors were accounted for, the independent effect of sociodemographic on stillbirth risk was substantially reduced (Blencowe et al., 2016; Terefe et al., 2025).

For maternal factors, the presence of underlying medical problems showed a significant association with stillbirth but was linked to lower odds of preventable stillbirth in this study. This finding is consistent with a case-control study conducted in a Malaysian public hospital, which demonstrated that women with stillbirth outcomes often did not present with common antenatal complications such as diabetes, hypertension, or anaemia (Abu Bakar et al., 2023).

Notably, hypertensive disorders of pregnancy were associated with reduced odds of preventable stillbirth (AOR 0.58), in contrast to a previous study that reported a strong positive association (AOR 1.88) (Norain et al., 2023). The apparent protective effect observed here may reflect more effective surveillance and timely management protocols for high-risk pregnancies in recent years. This interpretation is supported by evidence from the WHO South-East Asia Region Office stillbirth project, which found that women with pre-eclampsia had a lower risk of stillbirth compared to those with gestational or chronic hypertension (AOR 0.23) (Kumar et al., 2021). Our finding suggests that the current surveillance system captures underlying medical problems among women with stillbirths is too general and nonspecific. For instance, hypertensive disorders of pregnancy encompass diverse conditions such as chronic hypertension, gestational hypertension, preeclampsia, and HELLP syndrome. More precise classification of these subtypes in stillbirth reporting may yield different results and improve the accuracy of surveillance data (Khedagi & Bello, 2021).

Insufficient or unbooked antenatal care, non-compliance with medical advice, and deliveries at unsuitable facilities were all significantly associated with preventable stillbirth in this study. These findings are consistent with previous research showing that inadequate ANC, non-compliance, and unsuitable delivery facilities contribute to preventable stillbirths and neonatal deaths (Norain et al., 2023). A study in Ghana further demonstrated that completing the recommended number of ANC visits reduces the odds of stillbirth (Afulani, 2016), while research in Kenya reported that women who did not attend ANC had a fourfold higher risk of stillbirth (AOR 4.1) (Gwako et al., 2021; Shiferaw et al., 2021). Even though our study found that women with fewer than eight ANC visits had 0.80 times reduced odds of preventable stillbirth, the significant p-value might be due to effect size as well due to large sample size. In Malaysia, the recommended ANC schedule is 10 visits for primigravidae and 8 visits for multigravida, with more frequent visits advised for high-risk pregnancies (Ministry of Health, 2020). Close monitoring during ANC visits is therefore essential to safeguard maternal and fetal well-being.

Our study demonstrated that operative deliveries, including caesarean and instrumental births, were associated with lower odds of preventable stillbirth compared to vaginal delivery (AOR 0.61 and 0.82, respectively). This aligns with multicountry evidence indicating that operative delivery

reduces stillbirth risk (RR 0.6) relative to vaginal birth, although prior studies often reported instrumental deliveries as high-risk (McClure et al., 2020). The protective effect observed here may reflect contextual differences in clinical practice, where operative interventions are typically performed in higher-level facilities with better monitoring or are selectively applied in carefully managed cases. These findings highlight the critical role of timely, appropriate intrapartum intervention in reducing preventable stillbirths within the Malaysian setting.

Delivery at a non-government hospital with specialist and deliveries in ‘unsuitable’ places, having a protective effect for preventable stillbirth, might sound contrary. Non-government hospitals with specialists may have better diagnostic capacity, earlier detection of fetal compromise, and more aggressive interventions. Even if “unsuitable place of delivery” seems negative, it might correlate with people going there only when problems are anticipated, hence more care is available. This could mean preventable stillbirths are more likely identified and possibly “rescued” compared to settings with limited specialist access. A systematic review of private-sector maternal and newborn care in LMICs found quality of care in specialist or private settings often higher than in some public sectors on indicators such as facility readiness and provider competence. This supports the idea that delivery in specialist non-government settings can reduce preventable adverse outcomes of pregnancy (Morris et al., 2024).

Gestational age at delivery was strongly associated with preventable stillbirth. Our study found that fetuses delivered at <22 weeks had the highest risk, with more than two-fold increased odds (AOR 2.78), followed by those delivered between 22–28 weeks (AOR 2.08) compared to delivery at 28 weeks and above. The strong association between earlier gestational ages; < 22 weeks and 22 to < 28 weeks that increased the likelihood of preventable stillbirth likely reflects the vulnerability of extremely premature fetuses, where they face higher risks of complications such as placental insufficiency, severe infections, or lack of viability even with medical care that lead to stillbirth as reported by a previous study in United State (Page et al., 2018). Furthermore, Okwaraji et al. (2023) also found that preterm birth, especially combined with small-for status, was responsible for nearly three quarters of stillbirths in a multi-country LMIC dataset, where the component of preterm birth carried drastically higher stillbirth rate ratios compared to term births (Okwaraji et al., 2023).

Fetal gender also a significant predictor of stillbirth in this study. This finding is consistent with evidence from a systematic review and meta-analysis of over 30 million births, which reported that male fetuses carry approximately 10% higher risk of stillbirth compared with females (Mondal et al., 2014). This might require further investigation at the genetic level to determine its pathophysiology.

In our study, the absence of a perinatal condition which defined as the lack of congenital anomalies or chronic pathologies was strongly associated with classification as a preventable stillbirth (AOR 3.77). This finding aligns with the conceptual distinction that preventable stillbirths are most often linked to intrapartum events, such as hypoxia or suboptimal monitoring, rather than to unavoidable biological factors. In contrast, non-preventable stillbirths predominantly reflect cases where death results from life-limiting congenital malformations, including Edwards syndrome, hypoplastic left heart, pulmonary hypoplasia, Patau syndrome, multiple congenital anomalies, and holoprosencephaly (Family Health Development Division, 2017). Supporting this interpretation, a study in India identified major congenital anomalies as a significant determinant of non-preventable stillbirth, reinforcing the role of structural and genetic abnormalities in defining this category (Kumbhare & Maitra, 2016).

Strengths and limitations

This study utilized a large, nationally representative cohort and standardized SU5MR data, enabling a comprehensive assessment of six domains of stillbirth determinants over a five-year period. The inclusion of preventability classification enhances its relevance for both public health and clinical interventions. Limitations include potential misclassification in adjudication, missing or incomplete data, and reliance on retrospective secondary sources that limit causal inference. Important factors such as maternal BMI at booking, smoking status, nutritional markers (haemoglobin, glucose), and detailed maternal disease classifications were not captured in the current reporting system. Despite these constraints, the study provides robust evidence to guide strategies to reduce preventable stillbirths in Malaysia.

Public Health Implications and Recommendation

This study highlights that most preventable stillbirths are linked to modifiable risk factors, underscoring opportunities for intervention. Strengthening pre-pregnancy screening, ensuring adequate antenatal visits, and improving intrapartum monitoring remain central priorities. Timely referral systems and integration of specialist care across both public and private sectors are vital in reducing preventable stillbirths. Stronger alignment with the Every Newborn Action Plan (ENAP) will accelerate progress toward reducing preventable stillbirths. Collaboration with key stakeholders including the Ministry of Health, private sectors, academic institutions, professional bodies, and community organizations, must be complemented by robust public-private partnerships to expand resources, optimize service delivery, and bridge equity gaps.

CONCLUSION

Preventable stillbirths in Malaysia largely due to modifiable gaps across antenatal and intrapartum care. Strengthening primary care services through consistent risk screening, strict adherence to the national antenatal visit schedule, and wider access to Doppler ultrasonography for detecting fetal growth restriction are key priorities. Intrapartum safety must be enhanced by ensuring timely operative interventions and continuous monitoring, supported across both public and private facilities. Public-private partnerships, community engagement, and systematic health audits should be leveraged to close persistent service delivery gaps. These targeted strategies are feasible within Malaysia's current health infrastructure and can realistically lower stillbirth rates below 4 per 1,000 births. Achieving this will not only reduce preventable perinatal loss but also accelerate national progress toward ENAP targets and Sustainable Development Goal commitments.

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and-stillbirths-by-2030-moving-faster-towards-high-quality-universal-health-coverage-in-2020-2025/

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WHY MOTHERS STILL DIE: LESSONS FROM MATERNAL DEATHS IN MALAYSIA

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ABSTRACT

Background:

Malaysia has achieved substantial reductions in maternal mortality; however, recent trends indicate a plateau in progress. Emerging evidence points to changing population dynamics and lifestyle-related factors contributing to new patterns of maternal risk.

Objective:

This paper examines how delayed marriage and childbearing, poor birth spacing, and the growing burden of non-communicable diseases (NCDs) influence maternal deaths and preventable complications in Malaysia.

Methods:

A review of national demographic indicators and findings from the Confidential Enquiry into Maternal Deaths (CEMD) was undertaken to identify evolving risk patterns and indirect causes of maternal mortality.

Results:

Increasing maternal age, rising prevalence of obesity, diabetes, hypertension, and cardiovascular disease among women are linked to higher rates of indirect maternal deaths. Late antenatal booking and inadequate preconception care further compound these risks.

Conclusion:

Maternal health strategies must evolve from ensuring safe delivery to promoting healthy women and safe pregnancies. Integrating NCD management into reproductive health services and strengthening preconception and lifestyle interventions are key to reducing preventable maternal deaths in the next phase of Malaysia's maternal health journey.

Keywords: Maternal Mortality, Increasing Maternal Age, NCD, Pre-Conception.

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**LOW FERTILITY, HIGH STAKES: DEMOGRAPHIC AND ECONOMIC
IMPLICATIONS OF MALAYSIA'S FERTILITY DECLINE AND THE CASE FOR A
NATIONAL FERTILITY INSURANCE POLICY**

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ABSTRACT

Background:

Malaysia is facing a record-low fertility rate of 1.6 births per woman (Department of Statistics Malaysia, 2024)—well below the population replacement level of 2.1. This sustained decline indicates a demographic shift with far-reaching socioeconomic repercussions, including an ageing population, reduced labour productivity, and increasing national healthcare expenditure. Despite advancements in reproductive technology, fertility care remains underfunded and inaccessible, with high treatment costs, limited insurance coverage, and entrenched cultural stigma.

Objectives:

This study aimed to (1) identify the key factors contributing to fertility decline among Malaysian couples, (2) examine barriers to fertility treatment access, (3) assess the socioeconomic and macroeconomic impact of low fertility, and (4) propose a National Fertility Insurance (NFI) framework to promote equitable and sustainable access to fertility care.

Methods:

A mixed-methods study was conducted at Sophea Fertility Centre, Petaling Jaya, between January 2023 and June 2024.

A total of 156 married couples aged 25–45 years, with infertility exceeding 12 months, were recruited. Structured questionnaires assessed sociodemographic, clinical, and economic data, while semi-structured interviews with 25 couples explored psychosocial and policy perspectives. Quantitative data were analysed using SPSS version 28, and qualitative data using thematic analysis.

Findings:

Among respondents, 62% delayed fertility treatment due to financial barriers, while 71% agreed that fertility services should be insurance-covered. Over half (54%) reported emotional distress or mild depressive symptoms related to infertility. Economic analysis suggested that a 1% increase in fertility rate could boost Malaysia's GDP by 0.7%, whereas implementing the NFI could generate annual fiscal savings of RM1.2 billion through demographic stabilization and reduced elderly healthcare costs.

Conclusion:

Malaysia's fertility decline represents a multidimensional crisis—clinical, demographic, and economic. The proposed National Fertility Insurance (NFI) offers a strategic, cost-effective policy mechanism to improve fertility treatment access, foster population renewal, and strengthen socioeconomic resilience.

By reframing fertility care as an investment in human capital, Malaysia can sustain its growth and secure future generations.

Keywords: Fertility, Reproductive Health, Public Policy, Health Insurance, Malaysia.