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Validation of Burnout Prevention Module Elements for Informal Caregivers of Depressed Individuals: Fuzzy Delphi Method

Pengesahan Elemen Modul Pencegahan Burnout untuk Penjaga Tidak Formal Pesakit Kemurungan: Kaedah Fuzzy Delphi

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ABSTRACT

Informal caregivers (ICGs) provide vital support to individuals in need, yet they often go unnoticed by the formal healthcare system. While caring for depressed loved ones can be rewarding, it poses significant physical, emotional, and social challenges for ICGs. This research aims to identify key elements for a burnout prevention module for ICGs of individuals with depression using a mobile application. The Fuzzy Delphi Method (FDM) was employed to obtain expert consensus on the module's content. A questionnaire, developed from literature reviews and interviews with eight ICGs, was distributed to ten experts who rated their agreement on each element using a 7-point Likert scale. Nineteen elements met the FDM requirements, which included a threshold value of ≤ 0.2, an expert consensus percentage of ≥ 75%, and an average score of the Fuzzy number exceeding 0.5. The identified elements encompass the module's objective, significance, and duration; symptoms and effects of depression; available interventions; introduction to emotions; breathing techniques; mindfulness and spiritual practice; effective communication; nonverbal communication; active listening; nonjudgmental communication; self-care and stress reduction practices; prioritization; introduction to burnout; coping techniques: STOP method; burnout prevention; self-stigma: be mindful of negative self-talk; social support systems; informal caregiver support groups in Malaysia; and seeking professional help for personal well-being. These elements will serve as a framework for future module development, ultimately enhancing ICGs' well-being and enabling better care.

Keywords: Caregivers; Depression; Fuzzy Delphi Method; Mobile Application; Validation

ABSTRAK

Penjaga tidak rasmi (ICGs) memberikan sokongan dan penjagaan meluas kepada mereka yang memerlukannya tetapi sering kali tidak disedari dan tidak diiktiraf oleh sistem penjagaan kesihatan formal. Walaupun menjaga orang tersayang yang mengalami kemurungan boleh membawa kepuasan, ia juga boleh memberi cabaran fizikal, emosi, dan sosial yang kuat serta tertekan kepada ICGs. Kajian ini bertujuan untuk menentukan elemen dalam modul pencegahan burnout bagi ICGs kepada individu murung menggunakan Aplikasi Mudah Alih. Kaedah Fuzzy Delphi (FDM) digunakan untuk mendapatkan konsensus pakar mengenai kandungan modul untuk ICGs. Satu soal selidik telah dibangunkan berasaskan ulasan literatur dan temu bual bersama 8 ICGs. Soal selidik ini kemudian diedarkan kepada 10 pakar untuk menilai tahap persetujuan mereka terhadap setiap elemen menggunakan skala Likert 7 mata. Sembilan belas elemen didapati memenuhi syarat FDM, termasuk nilai ambang ≤ 0.2, peratusan konsensus pakar ≥ 75%, dan purata skor nombor Fuzzy melebihi 0.5. Elemen-elemen dikenal pasti merangkumi objektif, kepentingan dan tempoh modul; tanda, gejala dan kesan kemurungan; intervensi yang tersedia; pengenalan kepada emosi; teknik pernafasan; amalan kesedaran dan spiritual; komunikasi berkesan; komunikasi bukan lisan; mendengar aktif; komunikasi tanpa penghakiman; amalan penjagaan diri; pengutamaan; pengenalan kepada burnout; teknik penanggulangan: kaedah STOP; pencegahan burnout; stigma diri yang memberi tumpuan kepada pemikiran negatif; sistem sokongan sosial; dan kumpulan sokongan penjaga tidak rasmi di Malaysia. Elemen-elemen ini akan berfungsi sebagai kerangka untuk pembangunan modul pada masa hadapan, yang akhirnya dapat meningkatkan kesejahteraan ICGs dan membolehkan penjagaan lebih baik.

Kata Kunci: Aplikasi Mudah Alih; Kaedah Fuzzy Delphi; Kemurungan; Penjaga; Pengesahan

INTRODUCTION

Informal caregivers of individuals with depression are often family members, friends, or other unpaid individuals who provide essential support and assistance. These caregivers play a critical role in the lives of those with depression, assisting with daily activities such as personal care, meal preparation, and household tasks, while also offering vital emotional and social support. The mid-20th century saw significant shifts in mental health care due to advances in psychiatric treatment and the deinstitutionalization movement. These changes led to an increased number of individuals with mental illnesses living within communities rather than institutional settings (Fakhoury & Priebe 2007). Consequently, the burden of care fell more heavily on families, who often had to provide support with minimal training, resources, or social support systems. One of the pioneering studies on caregiver burden among those supporting individuals with mental illness was conducted by Treudley in the mid-1950s (Treudley 1946). However, it was not until the 1970s and 1980s that systematic research on caregiver burden began to gain traction and recognition.

Burnout has emerged as a prevalent issue among informal caregivers of individuals with depression (Carswell et al. 2024). The term "burnout" was first introduced by Herbert Freudenberger in the 1970s and is defined as a state of physical, emotional, and mental exhaustion resulting from chronic stress and inadequate support or resources (Maslach & Leiter 2016). Informal caregivers of individuals with depression encounter a multitude of stressors, including the challenge of managing severe symptoms of their loved ones, handling their own emotional responses to the care recipient's condition, and confronting the stigma and lack of understanding surrounding mental illness. These stressors often lead to exhaustion, frustration, and feelings of helplessness (Martínez et al. 2020). Research has demonstrated that burnout among these caregivers is linked to various negative outcomes such as increased risks of depression and anxiety, reduced quality of life, and diminished caregiving effectiveness (Carswell et al. 2024). Moreover, burnout can induce feelings of guilt (Maslach & Leiter 2016), further exacerbating caregiver stress and contributing to isolation. Thus, burnout is a significant concern for informal caregivers of individuals with depression, impacting their mental and physical health (Bauer & Sousa-Poza 2015) and their ability to provide effective care. To address this issue, appropriate support and resources are crucial in preventing burnout and enhancing both caregiver and care recipient well-being.

In Malaysia, the existing modules for informal caregivers primarily consist of physical short-term training programs that are not tailored specifically for those caring for individuals with depression. The researcher recognizes that a one-size-fits-all approach is inadequate for addressing the unique needs of caregivers of individuals with depression. A general module may fall short in meeting these specific needs, potentially leading to suboptimal outcomes. Moreover, as far as the researcher is aware, there is currently no burnout prevention module designed specifically for informal caregivers of individuals with depression in Malaysia using a mobile application. Therefore, the research objective is the validation of elements in the burnout prevention module for ICGs through a mobile application.

Lorca-Cabrera et al. (2021) noted that Spain has 29 applications developed specifically for informal caregivers of individuals with chronic conditions or diseases. By integrating various digital tools, it is possible to create a comprehensive tool that addresses the mental health, burden, and stress of caregivers at a broader level, regardless of the care recipient's illness or limitations. This not only emphasizes the necessity of developing a specific burnout prevention module tailored for the unique challenges faced by these caregivers but also highlights the broader implications of such resources in fostering a supportive caregiving environment. Addressing caregiver burnout through targeted interventions can lead to improved health outcomes for caregivers and enhance the quality of care provided to individuals with depression.

Furthermore, the integration of mobile technology offers the potential for continuous support, allowing caregivers to access resources, peer support, and educational materials at their convenience. This can be particularly beneficial in a rapidly changing and demanding caregiving landscape, where caregivers often find themselves isolated and without the necessary tools to manage their responsibilities effectively. As research continues to evolve, it becomes increasingly clear that supporting informal caregivers through innovative, tailored approaches is vital for improving the overall mental health landscape in Malaysia and beyond.

LITERATURE REVIEW

Modules are increasingly recognized as pivotal components in educational settings, significantly enhancing teaching, learning, and training programs. These structured educational units offer targeted content and resources, enabling learners to acquire knowledge and skills effectively. Despite this recognition, there is a notable scarcity of modules specifically tailored for informal caregivers of individuals with depression. Informal caregivers, often family members or friends, play a critical role in the support system for those grappling with mental health challenges. However, they frequently encounter unique stresses and demands that can lead to burnout. This underlines the need for dedicated resources that not only acknowledge their contributions but also equip them with strategies to manage their well-being effectively. Feasibility studies on non-educational policies conducted in Malaysia remain scarce; however, they can still provide a foundation for identifying the key dimensions of the research (Janjang et al. 2024). Given the limited research on burnout prevention modules for informal caregivers (ICGs), it is crucial to draw on the knowledge and experiences of these caregivers, who support individuals with a wide variety of care needs, ranging from emotional to physical assistance.

Recent studies underscore the profound challenges faced by informal caregivers, highlighting the necessity for comprehensive support systems. Zeeshan et al. (2021) conducted a study in Karachi that revealed less educated mothers of children with disabilities, particularly those in joint families, are especially vulnerable to burnout, indicating a pressing need for additional support. This research illuminates the socioeconomic factors that can exacerbate caregiver stress, necessitating interventions that consider the caregivers' educational background and familial context. Similarly, Jawahir et al. (2021) emphasized the significant impact of caregiving on caregivers' health and daily activities, advocating for increased community and government intervention. They suggest that policymakers must recognize the burden on informal caregivers and develop supportive frameworks that enhance their coping mechanisms. Lu et al. (2019) found that caregivers of stroke survivors in China experience isolation and emotional exhaustion due to societal expectations and insufficient support, further illustrating the pervasive challenges that caregivers face globally. This body of research collectively underscores the urgent need for tailored interventions, which motivated the development of a mobile application featuring a burnout prevention module. This module aims to provide targeted support to informal caregivers and will be validated using the Fuzzy Delphi method (FDM) to ensure its effectiveness and relevance in addressing the diverse needs of caregivers.

Several studies further emphasize the importance of tailored interventions to support caregivers. Research by Riches et al. (2022) shows that caregivers value customized support that empowers them in their roles. This empowerment can manifest in various forms, including training, access to resources, and emotional support. Similarly, Rexhaj et al. (2017) found that caregivers participating in tailored programs reported high satisfaction and improved well-being, which reinforces the notion that when caregivers feel supported, they are more likely to provide better care to their loved ones. These findings highlight that a one-size-fits-all approach is insufficient, and interventions should be designed to address the specific needs and preferences of each caregiver. Tailored interventions can take various forms, including educational programs, information technology-based support, and psychosocial interventions that focus on mental health and well-being. Aksoydan et al. (2019) reviewed studies using different training methods for caregivers, noting that supportive educational learning improved caregivers' quality of life significantly. This underscores the value of equipping caregivers with the knowledge and skills they need to feel confident in their roles.

Improving caregiver well-being and reducing burnout not only benefits the caregivers themselves but also enhances the care provided to individuals with disabilities or illnesses. A well-supported caregiver is better equipped to handle the emotional and logistical demands of their role, leading to more effective and compassionate care. This is particularly relevant in the context of Riches et al. (2022) study on caregivers of individuals with intellectual disabilities, which revealed that tailored interventions significantly improve caregivers’ emotional resilience and coping strategies. By supporting caregivers, tailored interventions can contribute to successful models of inclusive community living and aging-in-place, promoting a holistic approach to health and wellness. In conclusion, the development of dedicated modules for informal caregivers, grounded in empirical research and caregiver input, is essential in fostering healthier caregiving environments and ultimately enhancing the quality of life for both caregivers and those they support.

RESEARCH METHOD

DESIGN AND SAMPLE

The internal validation of a module frequently relies on expert consensus (Richey & Klein, 2007; Richey et al., 2004), often utilizing the Delphi technique, which systematically collects expert opinions and refines content through multiple iterations until consensus is reached (Chang et al., 2000). However, the Delphi method poses several challenges, including being time-consuming, resource-intensive, and susceptible to data loss, along with difficulties in analysing and integrating expert feedback (Abdul Rahman et al., 2021). To overcome these limitations, the Fuzzy Delphi Method (FDM), introduced by Kaufman and Gupta in 1985, incorporates fuzzy logic to enhance efficiency and cost-effectiveness in the validation process (Tahriri et al., 2014). One of the key reasons for combining the traditional Delphi method with Fuzzy Set Theory is its ability to address the inherent uncertainty and linguistic ambiguity often present in expert judgments. By adopting the triangular fuzzy number from fuzzy theory, this approach mitigates the limitations of the traditional Delphi method by enabling researchers to capture partial or gradated levels of agreement rather than relying solely on binary or crisp numerical inputs, thereby providing a more nuanced depiction of expert consensus (Tsai et al. 2020). Ishikawa and colleagues (1993) are widely recognized for introducing the FDM by incorporating fuzzy logic into the conventional

Delphi process, further enhancing its capacity to manage imprecise data and improve the reliability of outcomes. The FDM was used to gain expert consensus on the content of the module for Informal Caregivers of Individuals with Depression. The primary motivation for utilizing the FDM to achieve consensus on risk priority is its efficiency in reducing time and costs compared to the traditional Delphi method (Zamzuri et al. 2022). A questionnaire was developed from literature reviews and interviews with eight informal caregivers of individuals with depression, based on the emerging themes. This questionnaire was then reviewed by three experts for item validation before being distributed to eligible experts to form a consensus. Ten eligible experts were selected through purposive sampling and contacted via communication platforms such as WhatsApp and Facebook to obtain their consent for participation in this research. In this research, the expert panel was composed of two industrial/organizational psychologists (specialized in training and development), two counselling psychologists, two psychiatrists, and four clinical psychologists, for a total of ten experts, all of whom had over 5 years of experience in their respective fields. Once the experts had consented, the researcher shared a Google Form link, an online survey tool that included a written consent form, a research information sheet, and the survey. After consent was obtained, the questionnaire was then distributed to 10 experts to rate their level of agreement on each element using a 7-point Likert scale. The FDM requirements involve Triangular Fuzzy Numbers and the Defuzzification Process. The criteria for Triangular Fuzzy Numbers include two aspects: (1) a Threshold Value of $\leq$ 0.2, and (2) a Percentage of Experts Consensus of $\geq$ 75%. In the Defuzzification Process, it is necessary to have (3) an average score of the Fuzzy Score (A) that exceeds 0.5. This structured approach ensures that the final content of the module is robust, reliable, and reflective of the collective expertise, ultimately enhancing the quality and relevance of the support offered to informal caregivers.

ETHICAL CONCERNS

In the context of the FDM, potential biases or conflicts of interest among the participating experts were important considerations. If the group of experts selected for the study was not diverse, it could have led to biased outcomes. To mitigate biases and conflicts of interest, deliberate efforts were made to include a diverse group of experts with varying backgrounds, experiences, and perspectives. In this research, the expert panel was composed of two industrial/organizational psychologists (specialized in training and development), two counselling psychologists, two psychiatrists, and four clinical psychologists, for a total of ten experts. By ensuring diversity within the expert panel, researchers obtained a more comprehensive evaluation of the topic under consideration. Diverse experts brought different insights, knowledge, and opinions, which enriched the decision-making process and led to a more robust and inclusive consensus. By addressing these ethical considerations, researchers upheld the ethical integrity of the FDM and ensured the well-being and trust of participating experts. This careful selection process not only strengthened the findings but also fostered a collaborative atmosphere, encouraging open dialogue and mutual respect among experts, thereby enhancing the overall quality and credibility of the research outcomes.

ANALYSIS

In the item validation of FDT-1, the formula for calculating the CVI value is CVI = n/N, where 'n' represents the number of experts who agreed, and 'N' is the total number of evaluators. Only items with a CVI value of 1.00, indicating unanimous agreement among all three experts on the item's relevance, will be accepted, and this calculation will be done manually. For calculating the defuzzification value, the formula is $A = (1/3) * (m1 + m2 + m3)$. To be accepted, the α-cut value must exceed 0.5. Items with a higher α-cut value, which will be prioritized for inclusion in the module, will be calculated using Microsoft Excel.

Expert agreement is reached if the resulting value is smaller or equal to 0.2, and this calculation will also be done using Microsoft Excel. Additionally, the percentage of expert agreement for each item must exceed 75% (Hsu et al. 2010; Janjang et al. 2024), and this will be calculated via Microsoft Excel as well. The outcome of this sub-study includes the value of the threshold (d) and the percentage of agreement (5) for each expert. This internal validation of the module content will be achieved through these calculations.

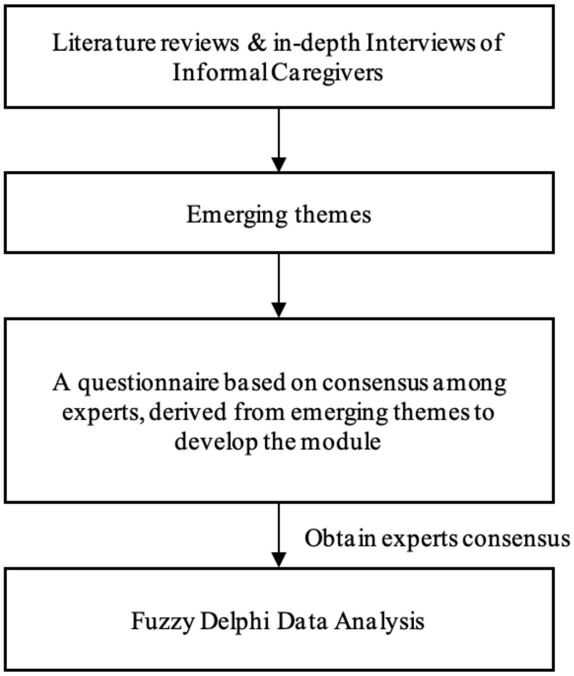

FIGURE 1. Research Flowchart

RESULTS AND DISCUSSION

The specific items that were provided to the experts for evaluation in the design and development of the Burnout Prevention Module for Informal Caregivers of Individuals with Depression are detailed and organised in Table 1. These items were carefully curated based on comprehensive literature reviews and qualitative interviews, ensuring they reflect the key components necessary for supporting caregivers in managing burnout. Each item was thoughtfully crafted to address various dimensions of caregiver well-being, including emotional, physical, and psychological aspects, and presented to the expert panel for further validation and refinement. To ensure a consistent understanding of key terms among the expert panel, we provided clear operational definitions for each term at the beginning of the Delphi rounds. The items serve as the foundational elements of the module, ensuring that the final version is both evidence-based and tailored to the unique needs of this target population.

TABLE 1. Items for the Informal Caregivers of Individuals with Depression Burnout Prevention Module Construct

Item Number	Items
IN01	Objective, Significance & Duration of the module
M101	Symptoms and effects of depression
M102	Available interventions
M201	Introduction to Emotions
M202	Breathing Techniques
M203	Mindfulness and Spiritual Practice
M301	Effective communication skills
M302	Nonverbal communication
M303	An Active Listener
M304	Listen and communicate nonjudgmentally
M305	Self-care and Stress Reduction Practice
M401	Prioritizing
M402	Introduction to burnout
M403	Coping Techniques: STOP method
M404	Burnout prevention
M501	Self-stigma: Be Mindful of Negative Self-talk
M502	Social Support System
M503	Informal Caregiver Support Group in Malaysia: Finding Strength in Shared Experiences
M504	Seeking Professional Help for Personal Well-being

The results presented in Table 2 clearly demonstrate that all the items evaluated have successfully met the required criterion of having a Threshold (d) value of ≤ 0.2. This indicates that the level of expert consensus on each item was sufficiently high. According to the established guidelines (Cheng & Lin 2002; Dawood et al. 2020), if the average value and the level of expert agreement for the items are less than the threshold value of 0.2, it confirms that consensus among the experts has been achieved for these items. Furthermore, the data reveals that the percentage of expert agreement for all items exceeds the 75% threshold, showing strong alignment among the expert panel on the relevance and appropriateness of each item. In addition, the defuzzification values for each item surpass the α-cut value of 0.5, further supporting the acceptance of these items. The defuzzification process, which translates fuzzy numerical values into crisp scores, plays a crucial role in verifying the experts' level of agreement. Therefore, based on these statistical measures, all of the evaluated items have been accepted and will be incorporated into the design of the module. These findings not only validate the content of the Burnout Prevention Module for Informal Caregivers of Individuals with Depression but also highlight the strong consensus among the experts regarding its components. The combination of meeting both the threshold and defuzzification criteria ensures that the module's design is built upon a solid foundation of expert agreement, enhancing the credibility and potential effectiveness of the intervention. This consensus is a critical step in ensuring that the final module will be both comprehensive and responsive to the unique needs of informal caregivers dealing with burnout.

TABLE 2. Findings of Expert Consensus on the Informal Caregivers of Individuals with Depression Burnout Prevention Module Design

No	Item	*Triangular Fuzzy Numbers*		*Defuzzification Process*	Expert Consensus
		Threshold Value, d	**Percentage of Expert Consensus, %**	***Fuzzy Score (A)***	
1	IN01	0.133	90.0%	0.910	ACCEPTED
2	M101	0.027	100.0%	0.957	ACCEPTED
3	M102	0.141	90.0%	0.890	ACCEPTED
4	M201	0.064	100.00%	0.897	ACCEPTED
5	M202	0.064	100.00%	0.937	ACCEPTED
6	M203	0.076	100.00%	0.917	ACCEPTED
7	M301	0.064	100.00%	0.937	ACCEPTED
8	M302	0.137	90.00%	0.880	ACCEPTED
9	M303	0.027	100.00%	0.957	ACCEPTED
10	M304	0.027	100.00%	0.957	ACCEPTED
11	M305	0.064	100.00%	0.937	ACCEPTED
12	M401	0.073	100.00%	0.927	ACCEPTED
13	M402	0.049	100.00%	0.947	ACCEPTED
14	M403	0.049	100.00%	0.947	ACCEPTED
15	M404	0.064	100.00%	0.937	ACCEPTED
16	M501	0.141	90.00%	0.890	ACCEPTED
17	M502	0.076	100.00%	0.917	ACCEPTED
18	M503	0.137	90.00%	0.880	ACCEPTED
19	M504	0.064	100.00%	0.937	ACCEPTED

As illustrated in Table 3, the application of presentation interface design items is systematically organized based on their priority during the development and design process of the Burnout Prevention Module for Informal Caregivers of Individuals with Depression. This prioritization was established through expert consensus, ensuring that the most critical and impactful elements are emphasized in the design. By engaging experts in the decision-making process, the prioritization reflects a collective understanding of what is most essential for enhancing the user experience, usability, and overall functionality of the module. The involvement of experts from diverse fields allowed for a thorough evaluation of each design item, with a focus on creating an intuitive and user-friendly interface. Through consensus, the experts determined which features would best support informal caregivers in preventing burnout, giving higher priority to elements that improve accessibility, visual clarity, and ease of navigation.

TABLE 3. Items Position by Priority

Sort by priority	**Items**	**Item Number**
1	Symptoms and effects of depression	M101
1	An Active Listener	M303
1	Listen and communicate nonjudgmentally	M304
4	Introduction to burnout	M402
4	Coping Technique: STOP method	M403
6	Breathing Techniques	M202
6	Effective communication skills	M301
6	Self-care and Stress Reduction Practice	M305
6	Burnout prevention	M404
6	Seeking Professional Help for Personal Well-being	M504
11	Prioritizing	M401
12	Mindfulness and Spiritual Practice	M203
12	Social Support System	M502

14	Objective, Significance & Duration of the module	IN01
15	Introduction to Emotions	M201
16	Available interventions	M102
17	Nonverbal communication	M302
17	Self-stigma: Be Mindful of Negative Self-talk	M501
17	Informal Caregiver Support Group in Malaysia: Finding Strength in Shared Experiences	M503

The findings of this research provide a well-defined structure and clear direction for researchers, clinicians, and educators who are focused on developing and implementing a Burnout Prevention Module through a mobile application for Informal Caregivers of Individuals with Depression. The module's content, validated through expert consensus, presents a reliable and credible framework for future research efforts. This framework offers a standardized blueprint, guiding the development of similar modules aimed at addressing the unique challenges and stressors that informal caregivers face in their roles. By adopting this framework, not only can future modules maintain consistency, but the overall effectiveness of caregiver training can also be enhanced, ensuring that the modules are practical, applicable, and relevant to the needs of caregivers.

The expert panel's agreement to accept the nineteen proposed items by the researcher for inclusion in the module is a significant milestone. These validated items form the foundation of the module and represent key areas that caregivers need support in to prevent burnout effectively. The items that were accepted are presented in Table 4.

TABLE 4. Summary of Accepted Items

Item	Items
1	Objective, Significance and Duration of the module which will be included in every chapter of the module.
	Chapter 1: Introduction to Informal Caregivers of Someone with Depression consist of
2	Symptoms and effects of depression
3	Available interventions
	Chapter 2: Introduction to Emotions consists of
4	Introduction to emotions
5	Breathing techniques
6	Mindfulness and spiritual practice
	Chapter 3: Communication Skills consists of
7	Effective communication skills
8	Nonverbal communication
9	An active listener
10	Listen and communicate nonjudgmentally
11	Self-care and stress reduction practice
	Chapter 4: Finding Balance consists of
12	Prioritizing
13	Introduction to burnout
14	Coping Technique: STOP method
15	Burnout prevention
	Chapter 5: Stigma and Social Support consists of
16	Self-stigma: be mindful of negative self-talk
17	Social Support System
18	Informal Caregiver Support Group in Malaysia: Finding Strength in Shared Experiences
19	Seeking Professional Help for Personal Well-being

Item 1: Objective, Significance and Duration of the module

According to expert consensus, the inclusion of the objective, significance, and duration of the module in each chapter holds significant importance in the development of an effective learning experience for informal caregivers. The inclusion of the objective, significance, and duration of the module in each chapter holds great significance in the development of an effective learning experience (Abaya et al. 2023) for informal caregivers. By providing clarity, relevance, expectations, motivation, and progress tracking, these elements ensure that learners are equipped with the necessary guidance and information to navigate the module successfully. Ultimately, this enhances the overall learning journey and empowers informal caregivers to provide optimal support and care to their loved ones experiencing depression, which can improve their overall quality of life and reduce the risk of Burnout.

Chapter 1: Introduction to Informal Caregivers of Someone with Depression

The experts agreed upon the inclusion of Chapter 1: Introduction to Informal Caregivers of Someone with Depression, which introduces informal caregivers to the concept of caregiving for someone with depression, along with the items on *Item 2: Symptoms and Effects of Depression* and *Item 3: Available Interventions*, is of utmost importance. This section of the module serves several crucial purposes, which highlight why it is important for the overall learning experience of informal caregivers. Chapter 1's inclusion in the module, along with the items on symptoms and effects of depression and available interventions, is of utmost importance for informal caregivers. It equips them with the necessary knowledge and understanding to identify and address depression effectively. By providing this foundation, the module sets the stage for a comprehensive learning journey that empowers caregivers to provide optimal support and care to their loved ones with depression. This chapter is aligned with findings from research conducted by Riches and colleagues (2022), where caregivers actively sought knowledge and expertise in utilizing person-centered approaches that prioritize the individual and their family's distinct needs and preferences. Additionally, by emphasizing the importance of awareness regarding the symptoms and potential interventions for depression, this chapter enhances caregivers' confidence in their roles. It ultimately fosters a proactive attitude towards caregiving, equipping informal caregivers with the tools and resources necessary to make informed decisions and enhance the overall quality of care provided to individuals with depression.

Chapter 2: Introduction to Emotions

The experts reached a consensus that designing and developing Chapter 2 of the module, which discusses the Introduction to Emotions, including *Item 4: Introduction to Emotions, Item 5: Breathing Techniques* and *Item 6: Mindfulness and Spiritual Practice*, holds significant importance in the overall module. This chapter addresses the emotional aspects of caregiving and provides valuable tools and techniques that can enhance the quality of life of both the informal caregivers and their loved ones with depression, thereby reducing the risk of Burnout. Chapter 2's inclusion in the module, covering the introduction to emotions (Ghosh 2019), breathing techniques (Banushi et al. 2023), and mindfulness and spiritual practice (Vespa et al. 2021), is essential for the well-being of informal caregivers. It empowers caregivers to understand and manage their own emotions, reduce stress, and cultivate resilience. By nurturing their emotional well-being, caregivers may provide optimal support to their loved ones with depression, creating a more compassionate and nurturing caregiving environment. Furthermore, incorporating these emotional regulation strategies equips caregivers with the ability to handle challenging situations effectively, fostering a sense of calm and stability. Ultimately, this chapter serves as a foundational element in the module, reinforcing the importance of emotional intelligence in enhancing the overall caregiving experience and ensuring better outcomes for both caregivers and individuals with depression.

Chapter 3: Communication Skills

Meanwhile, in Chapter 3, the experts agreed that focusing on communication skills plays a vital role in the module, as it addresses the essential aspect of effective communication for informal caregivers. This chapter encompasses various components, including *Item 7: Effective Communication Skills, Item 8: Nonverbal Communication, Item 9: Active Listening, Item 10: Listen and Communicate nonjudgmentally*, and *Item 11: Self-care and Stress Reduction Practices*. Each of these items holds significant importance in enhancing the caregiving experience and fostering positive relationships between informal caregivers and individuals with depression. Chapter 3's focus on communication skills within the module is essential for informal caregivers. Effective communication (Huang et al. 2023), nonverbal communication, non-judgmental communication, active listening, and self-care practices (Dionne-Odom et al. 2017) collectively contribute to fostering strong and supportive relationships with individuals with depression. These skills enable caregivers to express their concerns, understand the needs of their loved ones, and provide empathetic and compassionate care. By enhancing communication, caregivers may better navigate challenges, promote understanding, and create a supportive environment that fosters the well-being of both themselves and individuals with depression. Moreover, the ability to communicate effectively also empowers caregivers to advocate for their loved ones' needs in various settings, ensuring that individuals with depression receive the appropriate care and support necessary for their recovery. Nevertheless, the findings of this current research are aligned with the findings of Aksoydan et al. (2019), where the implementation of supportive educational learning through information and communication technology-based psychosocial interventions led to a significant enhancement in the quality of life experienced by family caregivers. This underscores the importance of communication skills as a foundational element in caregiver education and support.

Chapter 4: Finding Balance

The experts validated that Chapter 4: Finding Balance, which focuses on finding balance, plays a crucial role in the module as it addresses the significant issue of balancing personal needs and the needs of family members with depression. This chapter includes key items such as *Item 12: Prioritizing, Item 13: Introduction to Burnout, Item 14: Coping Techniques using the STOP method* and *Item 15: Burnout Prevention*. Each of these items is essential for the well-being of informal caregivers and the effective management of caregiving responsibilities in efforts to improve their quality of life and reduce the risk of Burnout. Chapter 4's focus on finding balance within the module is crucial for the well-being of informal caregivers. By addressing prioritization (Harvath et al. 2020), burnout awareness, coping techniques (Kamarulbahri et al. 2022), and burnout prevention (Giaume et al. 2023), caregivers can maintain a healthy balance between their own needs and the needs of their family members with depression. This chapter provides caregivers with valuable tools and strategies to effectively manage their responsibilities, reduce stress, and sustain their own well-being. By finding balance, caregivers can provide consistent and quality support to their family members while safeguarding their own mental and emotional health. Overall, Chapter 4 findings, consistent with findings by Rexhaj et al. (2017), emphasize the potential advantages of personalized interventions for informal caregivers to enhance their caregiving outcomes significantly. Ultimately, this focus on balance is integral not only for caregiver well-being but also for fostering healthier family dynamics and support systems.

Chapter 5: Stigma and Social Support

The experts shared the consensus that Chapter 5: Stigma and Social Support, which focuses on stigma and social support, is of utmost importance within the module. This chapter addresses the significant impact of stigma on individuals with depression and their caregivers and emphasizes the crucial role of social support in promoting well-being and resilience. The items included in this chapter—*Item 16: Self-stigma: Be Mindful of Negative Self-talk, Item 17: Social Support System, Item 18: Informal Caregiver Support Group in Malaysia: Finding Strength in Shared Experiences,* and *Item 19: Seeking Professional Help for Personal Well-Being* each contribute to addressing the challenges related to stigma and the vital need for social support. Chapter 5 of the module addresses the critical issues of stigma and social support for informal caregivers. By exploring self-stigma, promoting social support systems, introducing caregiver support groups, and encouraging professional help-seeking, caregivers are empowered to navigate the challenges associated with stigma and access the support they need. This chapter fosters a sense of community, reduces the impact of stigma, and promotes self-care and well-being among informal caregivers. By acknowledging the importance of social support and challenging self-stigmatizing beliefs, caregivers can enhance their resilience, gain valuable insights from peers, and foster a supportive network that positively impacts their caregiving journey. Additionally, the emphasis on these elements highlights their transformative potential in enhancing caregivers' overall mental health and quality of life (Yen & Valentine 2023).

In bringing it all together, the module effectively addresses various aspects of caregiving for individuals with depression, equipping informal caregivers with the necessary knowledge, skills, and support to provide optimal care. Recent studies emphasize that caregivers often encounter unique stresses that can lead to burnout, thereby underlining the necessity for comprehensive support systems (Zeeshan et al. 2021; Jawahir et al. 2021). By fostering self-awareness, communication skills, and emotional well-being, caregivers can navigate the challenges of caregiving and enhance the quality of life for both themselves and their loved ones. The innovative approach of this research, utilizing the FDM to achieve expert consensus, reflects a rigorous process in developing a module that specifically addresses these needs. The emphasis on reducing burnout risk and promoting social support demonstrates the module's comprehensive approach to supporting caregivers throughout their caregiving journey.

The identification of nineteen key elements encapsulates emotional, communicative, and practical aspects of caregiving, aligning with the findings of Riches et al. (2022) and Rexhaj et al. (2017), who advocate for tailored interventions. Furthermore, integrating evidence-based strategies, resources, and practical tools within the module ensures that caregivers can implement effective techniques in real-time, ultimately leading to sustained improvements in their overall mental health and resilience in their caregiving roles.

CONCLUSION

This study provided a comprehensive and in-depth understanding of the personal experiences and psychological needs of informal caregivers of individuals with depression. To mitigate the personal experiences and psychological needs of the caregivers, it is crucial for informal caregivers to receive education and training on depression, including awareness and knowledge of the changes in behaviour and personality of family members with depression, emotional difficulties, communication skills, balancing personal needs and the needs of family members with depression, and stigma and social support.

The literature highlights the pressing need for dedicated modules that address these challenges. As noted, modules are increasingly recognized as pivotal components in educational settings, significantly enhancing teaching and learning. However, there is a notable scarcity of resources specifically tailored for informal caregivers.

Additionally, the focus on mobile application technology aligns with current trends in digital health, offering a scalable and accessible solution for burnout prevention. This forward-thinking approach positions the research as a valuable contribution to the field, setting the stage for future studies and practical applications aimed at improving the well-being of informal caregivers. The literature underscores that improving caregiver well-being enhances the quality of care provided to individuals with disabilities or illnesses, further validating the relevance of this study's objectives.

It is important to acknowledge that, due to the methodological nature of the FDM, the sample size was limited. Despite this constraint, the findings offer valuable insights for developing future burnout prevention interventions for caregivers and may stimulate further in-depth research in this area. The relatively sparse body of research on informal caregivers of individuals with depression underscores the need to build upon these initial findings to advance understanding and improve support strategies in this field. This study paves the way for subsequent investigations to explore the effectiveness of the proposed burnout prevention module and its potential impact on enhancing caregiver resilience, coping strategies, and overall mental health. Future research should consider incorporating a larger and more diverse sample to enrich the data and better inform the development of targeted interventions that address the varied experiences of caregivers across different contexts.

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AUTHOR'S CONTRIBUTIONS

Conceptualization: Syafiqa Hazira and Akif Basri; Methodology: Syafiqa Hazira, Akif Basri and Rozainee Khairudin; Software: Syafiqa Hazira and Akif Basri; Validation: Syafiqa Hazira, Rozainee Khairudin and Akif Basri; Formal analysis: Syafiqa Hazira, Akif Basri, and Rozainee Khairudin; Investigation: Syafiqa Hazira, Akif Basri, and Rozainee Khairudin; Resources: Syafiqa Hazira; Data curation: Syafiqa Hazira; Writing—original draft preparation: Syafiqa Hazira; Writing—review and editing: Syafiqa Hazira, Akif Basri, and Rozainee Khairudin; Supervision: Rozainee Khairudin. All authors have read and agreed to the published version of the manuscript.

CONFLICT OF INTEREST

The authors declare(s) that there is no conflict of interest.

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