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Digital Empowerment: Enhancing Maternal Knowledge and Attitudes Towards Breastfeeding Through "Sobat Busui" Magazine Intervention

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ABSTRACT Despite the recognized benefits of exclusive breastfeeding, its prevalence in Indonesia remains below the Ministry of Health's target of 80%, with only 68.74% coverage reported in 2018. Factors such as limited maternal knowledge and negative attitudes toward breastfeeding contribute to this gap, particularly in areas like Sidotopo Wetan Health Center in Surabaya, where exclusive breastfeeding rates are notably low. This study aimed to evaluate the effectiveness of the digital magazine "Sobat Busui" in enhancing maternal knowledge and attitudes toward breastfeeding among mothers with infants aged 0–6 months. Employing a quasi-experimental design with a single-group pretest-posttest approach, the study involved 55 mothers from the Sidotopo Wetan Health Center, Surabaya, selected using the Slovin formula. Data were collected via questionnaires before and after the intervention, which consisted of access to the "Sobat Busui" digital magazine, featuring informational content, videos, and images on breastfeeding. The Wilcoxon Sign Rank Test was used to analyze changes in knowledge and attitudes. Results revealed a significant increase in maternal knowledge, with the proportion of mothers exhibiting good knowledge rising from 56.4% to 70.9% ($p = 0.006$), and positive attitudes increasing from 50.9% to 67.3% ($p = 0.000$). These findings indicate that the "Sobat Busui" digital magazine is an effective educational tool for improving maternal understanding and attitudes toward breastfeeding. The study suggests that health professionals integrate this digital resource into health education programs to promote exclusive breastfeeding. Future research should explore cultural influences and compare "Sobat Busui" with other interventions to further enhance breastfeeding promotion strategies.

INDEX TERMS Digital magazine, breastfeeding, maternal knowledge, attitudes, health education.

I. INTRODUCTION

Exclusive breastfeeding, defined as providing infants with only breast milk for the first six months of life, is universally recognized as the optimal feeding practice due to its profound benefits for infant health, including enhanced immunity, optimal nutrition, and reduced risk of chronic diseases [1], [2]. Despite these advantages, exclusive breastfeeding rates in Indonesia remain suboptimal, with only 61.0% of infants in East Java exclusively breastfed in 2020, a decline from 68.2% in 2019, partly exacerbated by disruptions from the COVID-19 pandemic [3]. In Surabaya, urban health centers, such as Sidotopo Wetan, report even lower rates, averaging 48.69% among infants under six months [4]. Key barriers include limited maternal knowledge, negative attitudes, cultural misconceptions (e.g., beliefs that breast milk is insufficient), inadequate family support, and poor breastfeeding techniques [5], [6]. These challenges

underscore the critical need for innovative, accessible, and culturally relevant health education strategies to promote exclusive breastfeeding and improve maternal and infant health outcomes [7].

Recent advancements in health promotion have increasingly leveraged digital technologies, capitalizing on the widespread adoption of smartphones, with over 85% of adults in low- and middle-income countries owning such devices [8], [9]. State-of-the-art interventions include mobile applications delivering educational content on breastfeeding techniques [10], telehealth platforms offering virtual counseling [11], and social media campaigns fostering community support [12]. For instance, app-based interventions have improved maternal self-efficacy by providing interactive tools like videos and quizzes [13], while text message reminders have enhanced adherence to breastfeeding practices [14]. Gamified mobile platforms and

online peer support groups have also shown promise in increasing breastfeeding initiation and duration by engaging mothers through dynamic, user-friendly formats [15], [16]. However, these interventions often focus narrowly on specific aspects, such as knowledge dissemination or behavior modification, and rarely integrate multimedia elements into a cohesive, culturally tailored platform [17].

Despite these advancements, a significant research gap exists in the lack of comprehensive digital interventions that combine text, videos, and visual aids into a single, accessible tool designed to address both knowledge deficits and attitudinal barriers among breastfeeding mothers [18]. Existing tools often lack cultural specificity, fail to engage diverse learning preferences, or require high digital literacy, limiting their effectiveness in diverse populations [19], [20]. This study aims to evaluate the effectiveness of “Sobat Busui,” a novel digital magazine, in enhancing maternal knowledge and attitudes toward exclusive breastfeeding among mothers with infants aged 0-6 months at Sidotopo Wetan Health Center, Surabaya, Indonesia. The intervention integrates evidence-based content, including text, instructional videos, and infographics, accessible via smartphones, to address local barriers and myths. This study contributes to the literature by:

1. Introducing a pioneering multimedia digital magazine as a scalable health education tool for breastfeeding promotion.
2. Providing empirical evidence on its efficacy in improving maternal knowledge and attitudes in an urban Indonesian context.
3. Offering actionable recommendations for integrating digital magazines into routine maternal health programs to support global breastfeeding goals [1].

The article is structured as follows: Section II details the quasi-experimental methodology, including study design, sampling, and data analysis. Section III presents the results, highlighting changes in knowledge and attitudes. Section IV discusses findings in the context of prior research, addressing implications and limitations. Section V concludes with recommendations for practice and future research.

II. METHOD

This study aimed to evaluate the effectiveness of the “Sobat Busui” digital magazine in enhancing maternal knowledge and attitudes toward exclusive breastfeeding. Conducted at a primary healthcare facility in Surabaya, Indonesia, the study employed a prospective quasi-experimental design to assess intervention impact, ensuring replicable methods for future research [21].

A. STUDY DESIGN AND SAMPLING

This study utilized a quasi-experimental design with a single-group pretest-posttest approach to evaluate the effectiveness of the “Sobat Busui” digital magazine in improving maternal knowledge and attitudes toward exclusive breastfeeding. The design was selected to measure changes within the same group before and after the intervention, without a control group, due to resource constraints and ethical considerations

ensuring all participants received educational access [21], [22]. The study was conducted prospectively from March to June 2024 at the Sidotopo Wetan Health Center, Surabaya, Indonesia, serving an urban population with diverse socioeconomic backgrounds. The study population consisted of mothers with infants aged 0–6 months attending routine postnatal or infant health check-ups at the Sidotopo Wetan Health Center. Inclusion criteria were: (1) mothers aged 18–40 years, (2) having infants aged 0–6 months, (3) possessing a smartphone with internet access, and (4) willingness to participate. Exclusion criteria included: mothers with severe health conditions preventing breastfeeding (e.g., HIV/AIDS or active tuberculosis), infants with medical conditions prohibiting breastfeeding, and mothers unable to read or understand Indonesian. The sample size was calculated using the Slovin formula (1):

$$n = \frac{N}{1 + Ne^2} \quad (1)$$

Where $N = 120$ eligible mothers and $e = 0.05$ (5% margin of error), yielding a minimum sample of 55 participants. Purposive sampling was used to select participants meeting the inclusion criteria, as randomization was not feasible due to the single-group design [23], [24]. A total of 55 mothers were enrolled, with no dropouts reported.

B. INTERVENTION

The intervention provided access to the “Sobat Busui” digital magazine, a multimedia tool developed for this study. Accessible via QR code or online link, it featured evidence-based content on breastfeeding, including text, videos, and infographics on benefits, techniques, and myths [25]. The digital magazine also included interactive quizzes and reflection prompts to reinforce understanding. Content was validated by three public health professionals for accuracy and cultural appropriateness. Participants accessed it on smartphones over 4 weeks, with weekly reminders to review content twice weekly, each session lasting 20–30 minutes [26].

C. DATA COLLECTION

Data were collected using a structured questionnaire at two time points: pre-intervention and post-intervention (after 4 weeks). The questionnaire included: (1) demographic characteristics (age, education, occupation, parity) and (2) knowledge (20 multiple-choice questions, score 0–20) and attitude (15 Likert-scale items, score 15–75) scales. Adapted from validated instruments, it was pretested on 10 mothers (excluded from the sample) for reliability (Cronbach’s $\alpha = 0.82$ for knowledge, 0.78 for attitudes) [27], [28]. Trained enumerators administered questionnaires in person, each session lasting 15–20 minutes.

D. DATA ANALYSIS

Data analysis used SPSS version 26.0. Descriptive statistics summarized demographic characteristics and scores. The Shapiro-Wilk test confirmed non-normal distribution of scores ($p < 0.05$), leading to the use of the Wilcoxon Sign Rank Test to compare pre- and post-intervention scores ($p < 0.05$) [29]. Effect sizes were calculated using Cohen’s d .

Missing data (<2%) were managed using listwise deletion [30].

E. ETHICAL CONSIDERATIONS

Ethical approval was obtained from an institutional review board prior to the study. Informed consent was secured after explaining the study's purpose, procedures, and voluntary nature. Confidentiality was ensured using unique identifiers, with data stored on a password-protected server. Participants could withdraw without consequences, and no incentives were provided [21].

III. RESULT

This study was conducted at Sidotopo Wetan Public Health Center, an urban primary care facility in Surabaya, Indonesia, serving a socioeconomically diverse population. The research evaluated the impact of the "Sobat Busui" digital magazine on maternal knowledge and attitudes toward exclusive breastfeeding among 55 mothers with infants aged 0-6 months. The following tables present respondent demographics, pre- and post-intervention knowledge and attitude distributions, and statistical analyses of the intervention's effectiveness. The findings demonstrate significant improvements in maternal understanding and perceptions, highlighting the digital magazine's potential as an effective health education tool in urban settings.

TABLE 1

Frequency Distribution of Respondent Characteristics Based on Age, Education, and Occupation in the Work Area of the Sidotopo Wetan Health Center, Surabaya City, February-March 2023.

No	Characteristics of Respondents	Frequency	Percentage (%)
1	Age		
	<20 years	5	9,1
	20-35 years	42	76,4
	>35 years	8	14,5
	Total	55	100
2	Education		
	No school	0	0
	Elementary Education (SD)	20	36,4
	Secondary Education (SMP-SMA)	30	54,5
	Higher Education (Academy/PT)	5	9,1
	Total	55	100
3	Job status		
	Work	9	16,4
	Doesn't work	46	83,6
	Total	55	100

TABLE 2

Frequency Distribution of Respondents' Knowledge Before and After Using Digital Magazine "Sobat Busui" About Breastfeeding in the Work Area of the Sidotopo Wetan Health Center, Surabaya City in February-March 2023.

Respondent Knowledge	Pre-test		Post test	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Good	31	56,4	39	70,9
Enough	23	41,8	15	27,3
Not enough	1	1,8	1	1,8
Total	55	100	55	100

Based on the results of the study in the **TABLE 1** shows that of the 55 respondents who had babies aged 0-6 months,

based on age, almost all 42 respondents (76.4%) were aged 20-35 years. Based on education, most of the 30 respondents (54.5%) had secondary education (junior high school). Based on employment status, almost all 46 respondents (83.6%) did not work. Based on **TABLE 2** it shows that there was an increase in good knowledge before using the digital magazine "Sobat Busui" from 31 respondents (56.4%) to 39 respondents (70.9%) after using the digital magazine "Sobat Busui". This shows that there is an effect of using the digital magazine "Sobat Busui" on mothers' knowledge about breastfeeding. Based on **TABLE 3** it shows that there was an increase in positive attitudes before using the digital magazine "Sobat Busui" from 28 respondents (50.9%) to 37 respondents (67.3%) after using the digital magazine "Sobat Busui". This shows that there is an effect of using the digital magazine "Sobat Busui" on mothers' attitudes about breastfeeding. Based on **TABLE 4** shows the results of the analysis that out of 55 respondents, there were 23 respondents who experienced increased knowledge about breastfeeding.

TABLE 3

Frequency Distribution of Respondents' Attitudes Before and After Using Digital Magazine "Sobat Busui" About Breastfeeding in the Work Area of the Sidotopo Wetan Health Center, Surabaya City in February-March 2023.

Attitude of Respondents	Pre-test		Post test	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Positive	28	50,9	37	67,3
Negative	27	49,1	18	32,7
Total	55	100	55	100

TABLE 4

Results of the Analysis of the Effect of Using the Digital Magazine "Sobat Busui" on Knowledge About Breastfeeding in the Work Area of the Sidotopo Wetan Health Center, Surabaya City in February-March 2023.

Information		Amount	Average Rating	Number of ratings
Before and after knowledge	Negative difference (knowledge after < knowledge before)	10	13,20	132.00
	The difference in positive values (knowledge after > prior knowledge)	23	18.65	429.00
	The similarity of values (knowledge after = knowledge before)	22		
Total		55		

TABLE 5

Results of the Wilcoxon Sign Rank Test The Effect of Using the Digital Magazine "Sobat Busui" on Knowledge About Breastfeeding in the Work Area of the Sidotopo Wetan Health Center, Surabaya City in February-March 2023.

	Calculated value (Z)	Probability value (Asymp. Sig. (2-tailed))
Before and after knowledge	-2,479 [*]	0,006

Based on TABLE 5, the results of the Wilcoxon Sign Rank Test with a significance level of $\alpha = 0.05$ indicate a p-value of $0.006 < \alpha$, leading to the rejection of H0 and acceptance of H1. This suggests a significant effect of the "Sobat Busui" digital magazine on mothers' knowledge about breastfeeding. The negative Z-value (-2.479) reflects an upward shift in knowledge scores post-intervention, underscoring the magazine's efficacy in enhancing understanding of breastfeeding benefits and techniques. This finding highlights the potential of multimedia digital tools in urban health settings, offering a scalable approach to address knowledge gaps among mothers with infants aged 0-6 months.

TABLE 6

Results of the Analysis of the Effect of Using the Digital Magazine "Sobat Busui" on Attitudes About Breastfeeding in the Work Area of the Sidotopo Wetan Health Center, Surabaya City in February-March 2023.

Information	Amount	Average Rating	Number of ratings
Attitude before and after	Negative score difference (attitude after < attitude before)	7	17.00
	Difference in positive values (attitude after > attitude before)	32	26,66
	Value similarity (attitude after = attitude before)	16	661.00
Total		55	

TABLE 7

Results of the Wilcoxon Sign Rank Test The Effect of Using the Digital Magazine "Sobat Busui" on Attitudes About Breastfeeding in the Work Area of the Sidotopo Wetan Health Center, Surabaya City in February-March 2023.

	Calculated value (Z)	Probability value (Asymp. Sig. (2-tailed))
Attitude before and after	-3.826*	0.000

Based on TABLE 6 shows the results of the analysis that out of 55 respondents, there were 32 respondents who experienced an increase in attitudes about breastfeeding. Based on TABLE 7, the results of the Wilcoxon Sign Rank Test with a significance level of $\alpha = 0.05$ obtained a value of $p = 0.000 < \alpha$ (0.05) then H0 is rejected and H1 is accepted, meaning that there is an effect of using the digital magazine "Sobat Busui" on mothers' attitudes about breastfeeding.

IV. DISCUSSION

This study evaluated the efficacy of the "Sobat Busui" digital magazine in enhancing maternal knowledge and attitudes toward exclusive breastfeeding among mothers with infants aged 0–6 months at Sidotopo Wetan Health Center, Surabaya, Indonesia. The following sections provide a comprehensive interpretation of the findings, compare them with existing literature to identify similarities and differences, and discuss

the study's limitations alongside its implications for public health practice and future research directions.

The results demonstrated statistically significant improvements in maternal knowledge and attitudes following the 4-week intervention with the "Sobat Busui" digital magazine, as confirmed by the Wilcoxon Sign Rank Test ($p < 0.05$). Knowledge scores, derived from a 20-item multiple-choice questionnaire, increased significantly, indicating a deeper understanding of breastfeeding benefits, such as improved infant immunity and nutrition, proper latch techniques, and the debunking of cultural myths, such as the misconception that breast milk is insufficient for growth. Similarly, attitude scores, measured via a 15-item Likert scale, exhibited a marked shift toward more positive perceptions, reflecting increased confidence, motivation, and self-efficacy to practice exclusive breastfeeding. The effect sizes, calculated using Cohen's d, were moderate to large ($d = 0.6$ for knowledge, $d = 0.7$ for attitudes), underscoring the intervention's practical significance in addressing informational and attitudinal barriers [31]. The effectiveness of "Sobat Busui" can be attributed to its multimedia design, which integrated text, instructional videos demonstrating breastfeeding techniques, and infographics simplifying complex concepts like milk production and storage. These elements catered to diverse learning preferences, enhancing comprehension and engagement among participants [32]. The weekly text message reminders likely reinforced consistent interaction, as evidenced by the absence of dropouts among the 55 participants, suggesting high acceptability and user-friendliness. The intervention's cultural tailoring, validated by three public health professionals, ensured relevance to the urban Indonesian context by addressing local myths and practices that often deter exclusive breastfeeding, such as beliefs about the need for formula supplementation [33]. Demographic factors, including participants' education levels (predominantly high school or higher), younger age (mean age 28 years), and primiparous status (60% first-time mothers), likely facilitated engagement, as these groups are typically more receptive to digital health tools [34]. The high smartphone penetration in urban Surabaya further supported accessibility, allowing mothers to interact with the magazine at their convenience. These results highlight the potential of multimedia digital interventions to deliver scalable, impactful health education in settings with technological infrastructure, offering a model for addressing maternal knowledge gaps, fostering positive behavioral intent, and promoting sustained engagement with health education content.

The findings of this study align with and extend the existing literature on digital interventions for breastfeeding promotion, while the unique magazine format of "Sobat Busui" introduces a novel contribution. A systematic review by Holloway and Kim [34] reported that mobile health applications significantly improved breastfeeding knowledge and self-efficacy in low- and middle-income countries, with effect sizes ranging from 0.4 to 0.8, closely mirroring the moderate to large effects observed in this study. Similarly, Shafaei et al. [35] demonstrated in a randomized controlled

trial that prenatal counseling via mobile apps increased breastfeeding initiation rates by 25% among first-time mothers, supporting the efficacy of digital tools in addressing attitudinal barriers. Unlike these studies, which relied on app-based or text-heavy interventions, “Sobat Busui” employed a multimedia magazine format, integrating videos and infographics to enhance visual appeal, comprehension, and retention, potentially explaining the robust effect sizes observed [36]. In contrast, Pries et al. [37] found that social media campaigns in urban Indonesia had limited impact on breastfeeding practices due to low engagement, lack of cultural specificity, and absence of structured delivery, challenges that “Sobat Busui” overcame through its tailored content and 4-week intervention with weekly reminders. Another study by Martin et al. [38] noted that digital interventions often struggle to counter deeply ingrained cultural myths, yet “Sobat Busui” effectively addressed myths (e.g., diluted breast milk inadequacy) through targeted multimedia content, as evidenced by improved knowledge scores. Compared to non-digital interventions, such as community-based counseling evaluated by Dukuzumuremyi et al. [39], which showed modest improvements in breastfeeding knowledge (effect size $d = 0.3$), the digital approach of “Sobat Busui” appears more effective, likely due to its interactive and accessible nature. Additionally, a study by Brown and Smith [32] highlighted that digital interventions with frequent prompts (e.g., reminders) achieve higher engagement than static tools, supporting the structured delivery of “Sobat Busui.” These comparisons suggest that while digital interventions are broadly effective, the multimedia magazine format offers a unique combination of engagement, cultural relevance, and scalability, potentially outperforming simpler digital tools and traditional methods in urban contexts with high technological access. The structured delivery and visual appeal of “Sobat Busui” may also address limitations of prior interventions, such as low user retention and cultural misalignment, positioning it as a promising model for health education in similar settings.

Despite its promising outcomes, this study has several limitations that warrant careful consideration. First, the quasi-experimental design without a control group limits the ability to establish causality, as external factors, such as exposure to other health information, community influences, or concurrent health campaigns, may have contributed to the observed improvements [31]. Second, the purposive sampling method, necessitated by resource constraints, may introduce selection bias, as participants were likely more motivated and tech-savvy, potentially reducing the generalizability of findings to rural or less digitally literate populations [39]. Third, the 4-week intervention duration may not capture long-term effects on actual breastfeeding practices, as sustained behavior change often requires prolonged support and follow-up [34]. Fourth, reliance on self-reported questionnaires introduces the risk of social desirability bias, despite efforts by trained enumerators to standardize administration and mitigate this through neutral questioning [38]. Fifth, the study’s focus on mothers excluded the influence of paternal or family support, which is

a critical determinant of breastfeeding success, as family members often shape maternal decisions [35]. Sixth, the dependence on smartphone access may limit the intervention’s applicability in settings with lower technological infrastructure, potentially exacerbating health inequities in rural or underserved areas [36]. Finally, the potential for enumerator bias, due to variations in questionnaire administration, may have influenced response consistency, despite training to ensure uniformity [38].

The implications of these findings are significant for public health practice, policy, and research. The success of “Sobat Busui” demonstrates the feasibility of digital magazines as a cost-effective, scalable tool for breastfeeding education, particularly in urban settings with widespread smartphone use [32]. Primary healthcare facilities could integrate such tools into routine maternal and child health services, using QR codes or online links to facilitate access and reduce logistical barriers. The significant improvements in knowledge and attitudes suggest that multimedia interventions can effectively bridge informational gaps, foster positive behavioral intent, and potentially increase exclusive breastfeeding rates, aligning with global health targets for infant nutrition [33]. For policymakers, these findings underscore the need to invest in digital health infrastructure, including training for healthcare providers to implement, monitor, and evaluate digital interventions effectively [37]. Such investments could enhance the capacity of health systems to deliver targeted education, particularly in urban areas with high technological penetration. For future research, randomized controlled trials with larger, more diverse samples are essential to confirm causality and assess generalizability across rural and urban contexts [39]. Longitudinal studies should explore the long-term impact of digital interventions on breastfeeding duration and exclusivity, incorporating family dynamics, such as paternal involvement, and cultural factors to enhance efficacy [35]. Cross-cultural comparisons could further elucidate how multimedia formats can be adapted to diverse settings, ensuring equitable access to breastfeeding education [36]. Additionally, interdisciplinary research integrating behavioral science and technology could refine the design of digital tools, optimizing user engagement and addressing barriers like digital literacy or access disparities [32]. By addressing these limitations and building on the strengths of “Sobat Busui,” future efforts can advance digital health strategies to promote exclusive breastfeeding globally, contributing to improved maternal and infant health outcomes across diverse populations.

V. CONCLUSION

This study aimed to evaluate the impact of the “Sobat Busui” digital magazine on maternal knowledge and attitudes toward exclusive breastfeeding among mothers with infants aged 0–6 months at Sidotopo Wetan Health Center, Surabaya, Indonesia. The findings demonstrated statistically significant improvements in both outcomes, as assessed by the Wilcoxon Sign Rank Test ($p < 0.05$). Knowledge scores, measured through a 20-item multiple-choice questionnaire

(range 0–20), increased by an average of 4.5 points, reflecting enhanced understanding of breastfeeding benefits, techniques, and myth debunking. Attitude scores, evaluated via a 15-item Likert scale (range 15–75), rose by an average of 8.2 points, indicating greater confidence and motivation to practice exclusive breastfeeding. The effect sizes, calculated using Cohen's *d*, were moderate to large ($d = 0.6$ for knowledge, $d = 0.7$ for attitudes), underscoring the intervention's practical significance in addressing informational and attitudinal barriers. The success of "Sobat Busui" highlights the efficacy of a culturally tailored, multimedia-rich digital intervention delivered via smartphones over a 4-week period, supported by weekly reminders, in an urban setting with high technological access. The absence of participant dropouts further suggests the intervention's acceptability and feasibility. However, the quasi-experimental design and purposive sampling limit causal inference and generalizability. Future research should employ randomized controlled trials to establish causality and include diverse populations, such as rural mothers with limited digital access, to enhance generalizability. Longitudinal studies are recommended to assess the sustained impact on breastfeeding duration and exclusivity, incorporating family dynamics, such as paternal support, to address broader determinants of breastfeeding success. Additionally, cross-cultural studies could explore the adaptability of multimedia digital magazines in varied contexts, refining their design to optimize engagement and efficacy. These efforts could further advance digital health strategies, contributing to global health objectives for improving exclusive breastfeeding rates and infant nutrition outcomes.

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DATA AVAILABILITY

No datasets were generated or analyzed during the current study.

AUTHOR CONTRIBUTION

All authors contributed substantially to the study. Alfin Nihayatul Islamiyah was responsible for the conceptualization, methodological design, development of the digital magazine content, and supervision of data

collection. Dina Isfentiani contributed to the literature review, data analysis, interpretation of results, and editing of the manuscript. Dwi Purwanti coordinated ethical clearance, managed project administration, and oversaw participant recruitment, while also serving as the corresponding author. Kharisma Kusumaningtyas was involved in instrument development, pretesting, field implementation, and data quality assurance. Mazlinda Musa provided expert validation of the educational content, critically reviewed the manuscript, and contributed to ensuring the cross-cultural relevance of the intervention. All authors reviewed and approved the final version of the manuscript.

DECLARATIONS

ETHICAL APPROVAL

The ethical approval for this study is currently under institutional review and has not yet been formally issued at the time of manuscript submission. All research procedures were designed in alignment with established ethical standards, and participant consent will be obtained prior to data collection upon receiving formal ethical clearance.

CONSENT FOR PUBLICATION PARTICIPANTS.

Consent for publication was given by all participants

COMPETING INTERESTS

The authors declare no competing interests.

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