



Improving Maternal Knowledge Through Pocketbook-Based Health Education

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ABSTRACT

Stunting remains a major nutritional problem among children under five and requires preventive efforts through improving mothers' knowledge. In the target community, health education at the Integrated Health Service Post (Posyandu) was not supported by practical educational media that mothers could review independently. Therefore, the Preventing Stunting Matters pocketbook was introduced as a concise and portable educational medium. This community service program aimed to improve mothers' knowledge regarding stunting prevention. The program was conducted in Trimulyo Village, Sleman District, Special Region of Yogyakarta, Indonesia, involving 30 mothers with children aged 0–59 months. The intervention included pocketbook-based health education, interactive discussions, breastfeeding demonstrations, and pretest–posttest knowledge assessment. Data were analyzed descriptively using the Wilcoxon signed-rank test. The mean knowledge score increased from 94.80 ± 4.83 to 98.80 ± 2.14 , with a statistically significant improvement ($p < 0.001$) and a large effect size ($r = 0.70$). Although participants had good baseline knowledge, scores increased in 60.0% of participants, while 40.0% maintained their high baseline scores, indicating limited room for further improvement. These findings suggest that the pocketbook has the potential to reinforce maternal knowledge regarding stunting prevention and may serve as a practical educational medium for community-based health promotion.



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INTRODUCTION

Stunting is a chronic growth disorder characterized by impaired linear growth resulting from prolonged inadequate nutrition and recurrent infections during early childhood (Nasikhah & Margawati, 2021). Stunting remains a major global public health problem, affecting an estimated 150.2 million children under five (23.2%) worldwide in 2024 (UNICEF, World Health Organization, & World Bank Group, 2025). In Indonesia, the prevalence of stunting was 19.8% in 2024, indicating that stunting prevention remains a national priority (Muhawarman, 2025). In the Special Region of Yogyakarta, the prevalence of stunting decreased to 17.4% in 2024 and further declined to 9.69% in 2025 (Dinas Kesehatan Daerah Istimewa Yogyakarta, 2025; Pemerintah Daerah Daerah Istimewa Yogyakarta, 2025). As this community service program was conducted in Sleman Regency, local data are particularly relevant. Although the prevalence of stunting declined from 4.41% in 2024 to 4.29% in 2025, continuous efforts to strengthen maternal knowledge and appropriate child feeding practices remain necessary to sustain this progress (Dinas Kesehatan Kabupaten Sleman, 2025; Dinas Kesehatan Kota Yogyakarta, 2021).

Despite the declining prevalence of stunting in Sleman Regency, field observations in Trimulyo Village indicated that mothers attending Posyandu still required practical educational support on stunting prevention and exclusive breastfeeding. Health education activities primarily focused on monitoring children's growth, while educational media that mothers could review independently after Posyandu sessions were still limited. Therefore, strengthening maternal knowledge through accessible educational media remained an important community need. Stunting is influenced by multiple factors, including maternal education and knowledge, both of which affect infant feeding practices, growth monitoring, and healthcare utilization (Wati & Satriyandari, 2024). Exclusive breastfeeding during the first six months provides optimal nutrition and contributes to stunting prevention (Hikmahrachim, Gustada, Rohsiswatmo, & Ronoatmodjo, 2019). Therefore, strengthening maternal knowledge regarding exclusive breastfeeding remains an important preventive strategy.

In Posyandu services, health education often focuses on monitoring children's growth, while practical educational media that mothers can review independently remain limited (Ufthoni, Widjanark, Kartini, & Joko, 2022). Pocketbooks provide concise, portable, and easy-to-understand information that can be reviewed repeatedly, making them suitable educational media for community-based health promotion (Jatmika, Maulana, Kuntoro, & Martini, 2019). In Trimulyo Village, initial discussions with village officials and Posyandu cadres revealed that practical educational media on stunting prevention and exclusive breastfeeding were still unavailable. Prior to this program, Posyandu cadres had not yet used a specific pocketbook on stunting prevention as an educational medium. Health education was primarily delivered through verbal counseling without printed materials that mothers could retain for repeated learning. Consequently, mothers required concise and practical educational materials to reinforce health messages, while Posyandu cadres needed a standardized educational medium to support consistent health promotion.

Preliminary research conducted by the author in 2023 in the Turi Community Health Center area showed that the prevalence of stunting still reached 22.14%, with one of the problems found being the limited knowledge of mothers regarding stunting and exclusive breastfeeding. The findings from the preliminary study were used as the basis for developing the pocketbook *Preventing Stunting is Important*. Although the preliminary study was conducted in the Turi Community Health Center area, the educational needs identified were also relevant to Trimulyo Village, where Posyandu activities similarly required practical educational media to strengthen maternal knowledge regarding stunting prevention. Therefore, the pocketbook was selected as the educational medium for this community service program. Based on the findings of the preliminary study and the educational needs identified in Trimulyo Village, the pocketbook *Preventing Stunting Is Important* was developed to provide concise, practical, and evidence-based information regarding stunting prevention and exclusive breastfeeding. The pocketbook was designed to enable mothers to review key health messages independently after Posyandu activities and to support Posyandu cadres in delivering consistent health education. Its portable and user-friendly format allows repeated use, making it an effective educational medium for reinforcing health messages beyond routine counseling sessions.

Based on these conditions, this community service program aimed to improve mothers' knowledge regarding stunting prevention through pocketbook-based health education, strengthen mothers' understanding of appropriate exclusive breastfeeding practices through practical demonstrations, and reinforce educational messages

through follow-up communication via a WhatsApp Group in Trimulyo Village, Sleman Regency, Special Region of Yogyakarta, Indonesia. Program success was evaluated based on improvements in participants' knowledge scores before and after the intervention.

METHODS

The community service program was conducted from May to July 2026 in Trimulyo Village, Sleman Regency, Special Region of Yogyakarta, Indonesia. The program was implemented in four stages: (1) preparation (May 2026), (2) implementation of the educational intervention during the Posyandu session on 9 May 2026, (3) monitoring through a WhatsApp Group, and (4) evaluation until July 2026. The program involved 30 mothers with children aged 0–59 months. Participants were recruited from mothers attending the Posyandu who met the inclusion criteria of having children aged 0–59 months, being registered as Posyandu participants, providing written informed consent, and completing both the pretest and posttest questionnaires. Before participation, all participants received an explanation regarding the objectives, procedures, and voluntary nature of the community service program. Written informed consent was obtained from all participants prior to completing the questionnaires and participating in the educational activities. Participant confidentiality and anonymity were maintained throughout data collection and analysis. Mothers who withdrew during the activity or did not complete both questionnaires were excluded from the analysis.

Preparatory activities included coordination with village authorities and Posyandu cadres, participant recruitment, identification of participant characteristics (age, education, occupation, and breastfeeding history), preparation of the pocketbook *Preventing Stunting Is Important*, development of the pretest–posttest questionnaire using Google Forms accessed through QR codes, and preparation of the required facilities. The educational medium used in this program was a 14-page pocketbook entitled *Preventing Stunting Is Important*, developed based on the authors' preliminary study and current evidence on stunting prevention and exclusive breastfeeding. The pocketbook covered the definition and prevention of stunting, exclusive breastfeeding, appropriate breastfeeding techniques, complementary feeding (MP-ASI), child growth monitoring through Posyandu, and practical recommendations for the first 1,000 days of life. The content was reviewed by maternal and child health experts before implementation to ensure its relevance, clarity, and accuracy.

Knowledge evaluation was conducted using a structured pretest–posttest questionnaire administered through Google Forms accessed via QR codes. The questionnaire consisted of 25 multiple-choice questions assessing participants' knowledge regarding the definition of stunting, risk factors, consequences of stunting, child nutritional status, exclusive breastfeeding, breastfeeding techniques, complementary feeding (MP-ASI), the role of Posyandu, and stunting prevention strategies. Each correct answer was assigned one point and each incorrect answer zero points, with the total score converted into a percentage ranging from 0 to 100. Before implementation, the questionnaire underwent content validation by two experts in maternal and child health. The content validity assessment showed satisfactory validity (Aiken's $V = 0.92$). Instrument reliability testing demonstrated good internal consistency, with a Cronbach's alpha coefficient of 0.87.

The educational intervention was conducted during the Posyandu session in Trimulyo Village. Participants first completed the pretest to assess their baseline knowledge. Health education was then delivered using the pocketbook *Preventing Stunting Is Important*, supported by a Microsoft PowerPoint presentation, interactive

discussions, and a breastfeeding demonstration using an infant mannequin. Following the demonstration, participants practiced appropriate breastfeeding positioning and attachment under the guidance of the facilitators. Participants' practical skills were directly observed by the facilitators, who then provided immediate feedback to reinforce correct breastfeeding techniques. After completing all educational sessions, participants completed the posttest using the same questionnaire to evaluate changes in knowledge following the intervention.



Figure 1. Flowchart of the Community Service Activities

Monitoring and evaluation were conducted in two stages. The first stage involved an immediate evaluation by comparing participants' pretest and posttest knowledge scores. The second stage consisted of follow-up monitoring through a WhatsApp Group for one week after the educational session. The group included the implementation team, Posyandu cadres, and participants and served as a platform for consultation, discussion, educational reinforcement, and question-and-answer sessions. Educational messages and follow-up guidance were provided regularly throughout the monitoring period. Monitoring indicators included participant engagement, responsiveness to educational messages, participation in discussions, and participants' ability to clarify the educational content. Findings were summarized descriptively and used to improve subsequent health education activities.

Data were analyzed using IBM SPSS Statistics version 27.0. Descriptive statistics were used to summarize participant characteristics and knowledge scores before and after the intervention. The normality of the data was assessed using the Shapiro–Wilk test. Because the data were not normally distributed, differences between pretest and posttest scores were analyzed using the Wilcoxon Signed-Rank Test with a significance level of $p < 0.05$.

RESULT AND DISCUSSION

The community service activity was held on Saturday, May 9, 2026, in Trimulyo Village, Sleman Subdistrict, Sleman Regency, Yogyakarta Special Region. The activity was carried out in conjunction with the Integrated Health Service Post (Posyandu) and was attended by 30 mothers with toddlers aged 0–59 months. The implementation of the activity was supported by Posyandu cadres in each hamlet who assisted with participant coordination, registration, and the provision of facilities and infrastructure during the activity.

The activity began with participant registration and a pretest to measure mothers' knowledge of stunting, risk factors and impacts, child nutritional status, the importance of exclusive breastfeeding, the relationship between exclusive breastfeeding and stunting prevention, and proper breastfeeding practices. Health education was then delivered using the pocket book "Preventing Stunting is Important," followed by an interactive discussion and demonstration of proper breastfeeding practices. After the educational session, participants completed the same questionnaire as a posttest to evaluate changes in knowledge. Throughout the activity, participants demonstrated positive enthusiasm, as seen by their active participation in the briefing, discussions, and demonstrations.



Figure 2. Presentation of material "Preventing Stunting is Important"



Figure 3. Pocket book media "Preventing Stunting is Important"



Figure 4. Implementation of the Pre-Test and Post-Test "Preventing Stunting is Important"



Figure 5. Breastfeeding Demonstration

Figure 2 illustrates the delivery of educational materials using PowerPoint combined with the pocketbook as the primary educational medium. Figure 3 presents the pocketbook distributed to all participants. Figure 4 illustrates the implementation of the pretest and posttest used to evaluate changes in participants' knowledge before and after the educational intervention. Figure 5 illustrates the breastfeeding demonstration session. Facilitators explained correct breastfeeding positioning and attachment using PowerPoint slides and an infant mannequin, after which participants practiced the techniques under supervision and received immediate individualized feedback.

The effectiveness of the activity was then evaluated through analysis of pretest and posttest results. Descriptive statistics summarized participant characteristics and knowledge scores. Normality testing was performed using the Shapiro–Wilk test.

Because the data were not normally distributed, pretest and posttest scores were compared using the Wilcoxon Signed-Rank Test. The results of the analysis are presented in the following table.

Tabel 1. Characteristics of Community Service Activity Participants According to Changes in Knowledge Scores (n=30)

Characteristics	n (%) / Mean $\pm$ SD	Increased score (n = 18)	Unchanged score (n = 12). 0.0
Mother Characteristics			
Age (Years)	31.07 $\pm$ 5.589	30.61 $\pm$ 6.18	31.75 $\pm$ 4.75
Education			
Did not graduate/elementary school	1 (3.3%)	0 (0.0%)	1 (8.3%)
Graduated from elementary school/equivalent	1 (3.3%)	1 (5.6%)	0 (0.0%)
Graduated from junior high school/equivalent	4 (13.3%)	3 (16.7%)	1 (8.3%)
Graduated from high school/equivalent	21 (70.0%)	13 (72.2%)	8 (66.7%)
Diploma/College	3 (10%)	1 (5.6%)	2 (16.7%)
Work			
Private sector employee	1 (3.3%)	1 (5.6%)	0 (0.0%)
Self-employed	2 (6.7%)	2 (11.1%)	0 (0.0%)
Housewife/Unemployed	27 (90%)	15 (83.3%)	12 (100.0%)
Breastfeeding History			
Yes	29 (96.7%)	18 (100.0%)	11 (91.7%)
No	1 (3.3%)	0 (0.0%)	1 (8.3%)
Child Characteristics			
Child age			
0-5 months	7 (23.3%)	5 (27.8%)	2 (16.7%)
6-23 months	10 (33.3%)	5 (27.8%)	5 (41.7%)
24-59 months	13 (43.3%)	8 (44.4%)	5 (41.7%)
Nutritional status			
Normal	26 (86.7%)	14 (77.8%)	12 (100.0%)
Stunted	4 (13.3%)	4 (22.2%)	0 (0.0%)
Number of children			
One child	11 (36.7%)	7 (38.9%)	4 (33.3%)
Two children	12 (40.0%)	9 (50.0%)	3 (25.0%)
Three or more children	7 (23.3%)	2 (11.1%)	5 (41.7%)

Based on Table 1, the average age of participants was 31.07 $\pm$ 5.59 years. Most participants had a high school education or equivalent (70.0%), were housewives (90.0%), and almost all had a history of exclusive breastfeeding (96.7%). These characteristics indicate that most participants had a favorable educational background to receive and understand the health education provided during the community service program. Adult mothers tend to have higher health literacy, which then results in more appropriate health behaviors (Sangdang, Phahuwatanakorn, & Limruangrong, 2025).

The high proportion of participants with secondary education supports the ability to understand the educational material provided because education plays an important role in the process of receiving and applying health information (Darsini, Fahrurrozi, &

Cahyono, 2019). Higher education contributes to increased nutritional knowledge, better decision-making skills in childcare, and improved access to health services (Lina, Prapatti, Kurnia, Giri, & Permasutha, 2025). In addition, the majority of participants were housewives who have a primary role in childcare and fulfilling family nutritional needs (Widyawati, 2019). This condition may facilitate participants' engagement in educational activities and the application of the information in daily childcare practices (Lukitasari, Pratama, & Nurhidayah, 2025).

In addition to maternal characteristics, child-related characteristics were also described because they provide important contextual information for interpreting the implementation and relevance of the stunting prevention education program. Regarding child characteristics, the largest proportion of children were aged 24–59 months (43.3%), followed by those aged 6–23 months (33.3%) and 0–5 months (23.3%). Most children had normal nutritional status (86.7%), while 13.3% were classified as stunted. Regarding family characteristics, most mothers had two children (40.0%), followed by one child (36.7%) and three or more children (23.3%). These findings indicate that the program reached mothers caring for children across different developmental stages, including the first 1,000 days of life, a critical period for child growth, brain development, and stunting prevention (Sekretariat Wakil Presiden Republik Indonesia, 2019). The inclusion of mothers caring for both stunted and non-stunted children demonstrates that stunting prevention education is relevant for all caregivers, as preventive interventions should begin before growth faltering occurs and continue throughout early childhood (Suryaningsih, et.al 2024).

Table 1 also presents participants' characteristics according to changes in knowledge scores following the educational intervention. Of the 30 participants, 18 (60.0%) experienced increased knowledge scores, whereas 12 (40.0%) maintained the same scores. Overall, the maternal and child characteristics were generally comparable between the two groups. Mothers whose knowledge scores increased had a slightly younger mean age than those whose scores remained unchanged (30.61 ± 6.18 vs. 31.75 ± 4.75 years). High school education was the predominant educational level in both groups (72.2% and 66.7%, respectively), and most participants were housewives (83.3% and 100.0%, respectively). Exclusive breastfeeding history was almost universal in both groups. Regarding child characteristics, most children were aged 24–59 months, while normal nutritional status predominated in both groups. However, all mothers of stunted children were included in the increased-score group (22.2%), whereas no mothers of stunted children were observed in the unchanged-score group. Mothers with two children were more frequently represented in the increased-score group, whereas mothers with three or more children were more common in the unchanged-score group. These findings provide a descriptive overview of the characteristics of participants according to changes in knowledge scores following the educational intervention.

The descriptive comparison indicates that participants with increased and unchanged knowledge scores shared generally similar maternal and child characteristics, suggesting that the educational intervention was beneficial across diverse participant backgrounds. Although participants had comparable characteristics, some mothers showed no measurable improvement because their baseline knowledge was already close to the maximum score, suggesting a possible ceiling effect. Therefore, the unchanged scores should not be interpreted as a lack of intervention effectiveness but rather as evidence that the educational program successfully reinforced participants' existing knowledge. Reinforcing accurate knowledge is an important outcome of community-based health education because it

supports the maintenance of appropriate health practices and increases mothers' confidence in implementing stunting prevention behaviors.

Table 2. Distribution of Knowledge Scores Before and After Counseling (n = 30)

Variables	Mean $\pm$ SD	95% CI		Median	Min - Max
		Lower	Upper		
Pretest	94.80 $\pm$ 4.831	93.00	96.60	96.00	84 - 100
Post Test	98.80 $\pm$ 2.140	98.00	99.60	100.00	92 - 100

Based on Table 2, the average knowledge score of participants before receiving counseling using the "Preventing Stunting is Important" pocketbook was 94.80 $\pm$ 4.83 with a median of 96.00. After attending the counseling, the average knowledge score increased to 98.80 $\pm$ 2.14 with a median of 100.00. The minimum score increased from 84 to 92, while the maximum score remained at 100. In addition, the decrease in the standard deviation from 4.83 to 2.14 indicates that the level of knowledge of participants after the activity became more even. The high knowledge score before the counseling indicates that most participants already had good basic knowledge about stunting prevention. This condition may also be associated with the characteristics of the participants, most of whom had completed senior high school education and had previous experience with exclusive breastfeeding, both of which may contribute to better maternal knowledge regarding child nutrition and stunting prevention. Furthermore, education received through integrated health posts (Posyandu), community health centers (Puskesmas), and information media also contributed to participants' initial knowledge. Good knowledge before the intervention also indicates that stunting has become a concern for the community and health workers, making information on stunting prevention relatively accessible to mothers (Sekretariat Wakil Presiden Republik Indonesia, 2019).

The high baseline knowledge scores may also indicate a ceiling effect, whereby participants had already achieved scores close to the maximum possible value before the intervention. Consequently, the opportunity for large improvements in posttest scores was limited. Nevertheless, the statistically significant improvement together with the large effect size ($r = 0.70$) suggests that the pocketbook meaningfully reinforced participants' existing knowledge despite the limited room for score improvement. Although the mean knowledge score increased by only approximately four points, this finding should be interpreted in the context of the participants' very high baseline knowledge. With an average pretest score of 94.80 and all participants already classified as having good knowledge, there was limited opportunity for substantial numerical improvement. Therefore, the observed increase reflects reinforcement and consolidation of existing knowledge rather than the acquisition of entirely new information. Although the numerical improvement appears relatively small, its practical significance should not be underestimated because strengthening mothers' knowledge regarding exclusive breastfeeding, complementary feeding, and early stunting prevention is expected to support appropriate caregiving practices and reduce misconceptions related to child nutrition. Therefore, the value of this intervention lies not only in increasing test scores but also in reinforcing mothers' readiness to consistently apply appropriate health practices in everyday life. This finding is in line with research by Wati and Satriyandari (2024) and Munthe et al. (2023) which stated that maternal education and knowledge levels are related to stunting prevention efforts (Munthe, Atika, & Candra, 2024; Wati & Satriyandari, 2024).

Education influences an individual's ability to receive, understand, and apply health information (Ariesta, Simanullang, & Mustikaningrum, 2025). Although participants already demonstrated high baseline knowledge, counseling using the pocketbook still improved knowledge among most participants by reinforcing previously acquired information rather than introducing entirely new concepts. After participating in the counseling using the *Preventing Stunting Is Important* pocketbook, participants' knowledge scores increased. The improvement was reflected not only in the higher mean and minimum scores but also in the reduced variation of posttest scores, indicating a more consistent level of knowledge among participants. These findings suggest that the counseling successfully improved and standardized participants' understanding of stunting prevention, exclusive breastfeeding, and appropriate breastfeeding techniques. The improvement was likely supported by the concise and systematic organization of the pocketbook, complemented by illustrations that facilitated understanding. Because the pocketbook could be reviewed repeatedly after the educational session, it also reinforced the information provided and supported knowledge retention.

Printed educational media combining text and illustrations have been shown to facilitate information retention and support repeated learning, which may explain the improvement observed in this community service activity (Yayasan Administrasi Indonesia, 2024). The results of this activity indicate that counseling using pocket books has a positive impact on increasing participants' knowledge regarding optimal stunting prevention for children's health and well-being. This finding is in line with research by Kartini S et al. (2025), which shows that continuous health education through integrated health posts (posyandu) and community health centers (puskesmas) is associated with higher levels of maternal knowledge regarding stunting prevention (Kartini, Bagenda, & Hartati, 2025). This finding is supported by Indrasari and Husna (2023), who reported that nutrition education significantly improved mothers' knowledge regarding stunting prevention (Indrasari & Husna, 2023). Similarly, a literature review by Ufthoni et al. (2022) concluded that educational media are effective in improving mothers' knowledge about stunting prevention (Ufthoni et al., 2022). However, Ningrum and Rosanti (2024) found that although booklet-based education significantly improved mothers' knowledge, attitudes, and nutritional practices, video-based education produced greater improvements than booklet-based education ($p < 0.001$). This suggests that the effectiveness of educational interventions depends not only on the educational media itself but also on the delivery method, participant engagement, and educational context.

In the present community service program, the pocketbook was integrated with interactive discussions, breastfeeding demonstrations, and follow-up through a WhatsApp group. Therefore, the observed improvement in knowledge was likely attributable to the combination of multiple educational strategies rather than the pocketbook alone (Ningrum & Rosanti, 2024). Overall, these results indicate that the use of pocket books can be an effective alternative educational medium, reinforcing the importance of a planned and community-based educational approach as a key strategy in public health interventions, particularly in supporting stunting prevention programs (Kartini et al., 2025). These findings suggest that the educational intervention functioned primarily as a knowledge reinforcement strategy rather than a knowledge acquisition strategy. Since participants already possessed relatively high baseline knowledge, the pocketbook served to strengthen existing understanding and improve consistency in key messages regarding exclusive breastfeeding, complementary feeding, and stunting prevention. In community-based health promotion, reinforcing

accurate knowledge is equally important because sustained understanding is expected to increase mothers' confidence in applying recommended childcare practices in their daily lives.

Table 3. Distribution of Participants' Knowledge Categories Before and After Counseling (n = 30)

Knowledge	Pretest		Posttest	
	n	%	n	%
Good	30	100.0	30	100.0
Fair	0	0	0	0
Poor	0	0	0	0

As shown in Table 3, all participants were classified as having good knowledge both before and after counseling. Although the distribution of knowledge categories remained unchanged, the increase in the mean knowledge score and the improvement in the minimum score indicate that the counseling successfully reinforced participants' existing knowledge. This finding is consistent with the high baseline knowledge observed before the intervention, suggesting a possible ceiling effect in which participants had already achieved knowledge scores close to the maximum value. Consequently, opportunities for measurable improvements in knowledge categories were limited. Nevertheless, the statistically significant increase in the mean knowledge score and the large effect size ($r = 0.70$) demonstrate that the *Preventing Stunting Is Important* pocketbook effectively strengthened mothers' knowledge regarding stunting prevention rather than changing their knowledge category.

Tabel 4. Results of the Wilcoxon Signed Rank Test on Knowledge Scores Before and After Counseling

Variables	Z	p-Value	Effect Size (r)
Posttest – Pretest	-3,825	<0.001*	0.70

Based on Table 4, the Wilcoxon Signed Rank Test demonstrated a statistically significant difference between pretest and posttest knowledge scores ($Z = -3.825$; $p < 0.001$). Of the 30 participants, 18 (60.0%) showed increased knowledge scores, 12 (40.0%) maintained the same scores, and none experienced a decrease. As previously described in Table 1, participants with increased and unchanged scores had generally comparable maternal and child characteristics, suggesting that the intervention was beneficial across diverse participant backgrounds.

In addition to being statistically significant, the counseling activity demonstrated a large effect size ($r = 0.70$), indicating a meaningful educational impact beyond statistical significance. Although the numerical increase in the mean score was relatively small, the large effect size suggests that the pocketbook effectively reinforced participants' understanding of key stunting prevention messages. Participants whose scores remained unchanged had mostly achieved near-perfect pretest scores (96–100), leaving limited opportunity for measurable improvement and indicating a possible ceiling effect. Repeated exposure to health education through Posyandu, community health centers, and other health promotion activities may also have contributed to their high baseline knowledge. Therefore, the unchanged scores should be interpreted as successful reinforcement of existing knowledge rather than insufficient intervention effectiveness. Furthermore, the absence of any decline in posttest scores indicates that the intervention not only reinforced but also successfully maintained participants' knowledge.

The success of this activity was supported by the use of pocket books as a learning medium. Pocketbooks present information in a concise and systematic format, complemented by illustrations that facilitate understanding and improve information retention because participants can review the material repeatedly (Masmuri, Seprian, Limansyah, & Rusnaini, 2024). The results of this activity align with research conducted by Masmuri et al. (2024), which showed that health education using pocket books significantly increased mothers' knowledge about stunting prevention (Masmuri et al., 2024). Rahmawati et al. (2024) research also reported that the use of educational media in the form of booklets combined with videos can improve the knowledge and attitudes of mothers of toddlers regarding stunting prevention (Rahmawati, Mamlukah, & Iswarawanti, 2024). In addition, various health promotion studies show that print-based educational media, such as booklets and pocket books, are effective in increasing knowledge because the information can be reviewed according to the participants' needs (Jatmika et al., 2019; Pusat Promosi Kesehatan Kementerian Kesehatan RI, 2010).

As a follow-up to the activity, the implementation team conducted a second phase of monitoring and evaluation one week after the counseling through a WhatsApp group consisting of the implementation team, Posyandu cadres, and all participants. This activity aimed to maintain the knowledge gained by participants while also providing an opportunity for consultation regarding the educational materials. During the monitoring period, 22 of the 30 participants (73.3%) actively participated in the WhatsApp discussions. A total of 18 questions were submitted by participants, primarily concerning exclusive breastfeeding, appropriate breastfeeding techniques, complementary feeding (MP-ASI), and stunting prevention. In addition, 12 discussion sessions were conducted between participants and the implementation team to provide clarification and reinforce key educational messages. The implementation team also periodically shared educational reminders and answered participants' questions based on the content of the *Preventing Stunting Is Important* pocketbook. These findings indicate that the pocketbook remained useful beyond the face-to-face educational session by supporting continued learning, participant engagement, and sustained communication within the community. The successful implementation of this community service program was supported by the active involvement of Posyandu cadres, integration with routine Posyandu activities, support from village stakeholders, and participants' enthusiasm during educational sessions and follow-up discussions. These factors likely contributed to the successful implementation and sustainability of the intervention.

This community service program has several limitations. First, the activity involved only 30 participants from a single village, which may limit the generalizability of the findings. Second, the study employed a one-group pretest–posttest design without a comparison group; therefore, improvements in knowledge cannot be attributed solely to the intervention with complete certainty. Third, although follow-up communication and monitoring continued through the WhatsApp group after the educational session, the program did not formally evaluate long-term behavioral outcomes using standardized measurements, such as changes in exclusive breastfeeding practices, complementary feeding practices, or other stunting prevention behaviors. Future community service programs should include larger participant groups, comparison groups where feasible, and longer-term behavioral evaluations to assess the sustainability of educational outcomes.

Overall, this community service program demonstrated that the "Preventing Stunting Is Important" pocketbook effectively improved mothers' knowledge regarding

stunting prevention. Combined with follow-up monitoring through digital communication, the pocketbook has the potential to serve as a sustainable educational medium for Posyandu, community health centers, and other community-based health promotion programs.

CONCLUSION

Community service activities using the *Preventing Stunting Is Important* pocketbook were associated with improved mothers' knowledge regarding stunting prevention. Participants demonstrated a statistically significant increase in knowledge scores following the educational intervention ($p < 0.001$), with a large effect size ($r = 0.70$). Although the findings indicate that the pocketbook has strong potential as a practical educational medium to support community-based health promotion, they should be interpreted with consideration of the one-group pretest–posttest design used in this program.

The pocketbook is recommended for integration into routine Posyandu services, *Kelas Ibu Balita* (Toddler Mother Classes), and health promotion activities at community health centers (Puskesmas). Future community service programs should involve larger and more diverse participant groups, include comparison groups where feasible, conduct longer-term evaluations of behavioral outcomes, and develop interactive digital versions of the pocketbook to expand access and enhance the sustainability of community-based stunting prevention education.

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