Frontiers in Community Service and Empowerment
Multidisciplinary: Rapid Review: Open Access Journal
e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol. 3 No. 4, pp. 147-152, December 2024

COMMUNITY SERVICE ARTICLE **OPEN ACCESS**
Manuscript received October 14, 2024; revised December 5, 2024; accepted December 5, 2024; date of publication December 30, 2024.
Digital Object Identifier (DOI): https://doi.org/10.35882/ficse.v3i4.87

How to cite: Agung Suharto, Budi Joko Santosa, and Astuti Setiyani, "Community Empowerment in Efforts to Prevent Stunting Based on the Health Belief Model in Milangasri Village, Panekan District, Magetan Regency.", Frontiers in Community Service and Empowerment, vol. 3, no. 4, pp. 147-152, December 2024

Community Empowerment in Efforts to Prevent Stunting Based on the Health Belief Model in Milangasri Village, Panekan District, Magetan Regency

Agung Suharto, Budi Joko Santosa, and Astuti Setiyani

Departement of Midwifery, Poltekkes Kemenkes Surabaya, Surabaya, Indonesia

Corresponding author: Agung Suharto (agungsuharto14@gmail.com)

ABSTRACT Stunting remains a critical public health concern resulting from chronic malnutrition and recurrent infections that hinder children's growth and development. In Milangasri Village, Panekan District, Magetan Regency, stunting contributes to approximately 4% of malnourished children under five, reflecting suboptimal community health behaviors. This study aimed to strengthen community empowerment in stunting prevention through education based on the Health Belief Model (HBM). A community service program was conducted using a pre-test–post-test design involving 100 participants, including *posyandu* cadres, community leaders, and village officials. The intervention consisted of educational sessions emphasizing knowledge, attitudes, and preventive behaviors regarding stunting. Data were collected using structured questionnaires before and after the intervention to assess changes in participants' understanding of stunting prevention. The demographic profile showed that most participants were aged 31–35 years (38%), had secondary education (57%), and were predominantly housewives (35%). The post-test results demonstrated a significant improvement in participants' knowledge levels, with the proportion of those categorized as having "very good" knowledge increasing from 20% to 30%, while those with "less" knowledge decreased from 10% to 0%. These findings indicate that community empowerment through education grounded in the HBM effectively enhances awareness and understanding of stunting prevention. Strengthening such participatory educational strategies can promote sustainable behavioral change at the household level and contribute to reducing stunting prevalence in the community.

INDEX TERMS Community empowerment, Stunting prevention, Health belief model, Health education, Public health intervention

I. INTRODUCTION

Stunting remains a persistent global public health challenge characterized by impaired growth and development in children resulting from chronic malnutrition, recurrent infections, and inadequate care, particularly during the first 1,000 days of life [1], [2]. In Indonesia, this issue continues to affect the quality of human resources, with significant consequences for physical growth, cognitive function, and future productivity [3]. According to the Indonesian Basic Health Research (Riskesdas), the national prevalence of stunting decreased from 37.2% in 2013 to 30.8% in 2018, and further declined to 24.4% in 2021 based on the Indonesian Nutrition Status Study (SSGI). Despite these improvements, the prevalence remains above the World Health Organization (WHO) threshold of 20%, categorizing Indonesia as a high-burden country [4], [5].

At the local level, Magetan Regency continues to face a notable stunting problem, with Milangasri Village contributing approximately 4% of all stunted children in the district [6]. The prevalence of malnutrition among toddlers reached 0.96% in 2018, and the coverage of healthy living behaviors remains below the national standard of 60% [7]. This situation underscores the need for community-based interventions that address multiple determinants of malnutrition, including inadequate nutrition, poor sanitation, limited access to health services, and low public awareness [8]. Previous studies highlight that community engagement and empowerment play a vital role in improving maternal and child health, particularly through participatory education and behavioral change initiatives [9], [10].

Current stunting prevention efforts have adopted various educational and technological interventions such as mobile applications, digital modules, and participatory programs to enhance public awareness and behavioral change [11]–[13]. Among behavioral theories, the Health Belief Model (HBM) has been widely utilized to explain and predict health-promoting behaviors. This model emphasizes individuals' perceptions of susceptibility, severity, benefits, and barriers as determinants of preventive health actions [14], [15]. The HBM framework has been successfully applied in several public health contexts, including vaccination, maternal care, and nutritional behavior interventions [16]–[18]. However,

e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol. 3 No. 4, pp. 147-152, December 2024

its application in community empowerment programs specifically targeting stunting prevention remains limited in Indonesia.

This gap highlights the need for studies and community empowerment initiatives that integrate the HBM to strengthen public awareness, promote healthy behaviors, and prevent stunting through education and participatory approaches. Therefore, this study aims to implement and evaluate a community empowerment program for stunting prevention based on the Health Belief Model in Milangasri Village, Panekan District, Magetan Regency. The program focuses on enhancing knowledge and awareness among posyandu cadres, village officials, and community members through educational interventions using pre- and post-test assessments. This article makes three primary contributions:

1. It develops a community-based stunting prevention model grounded in the Health Belief Model to promote preventive behaviors and maternal health awareness.
2. It provides empirical evidence on the effectiveness of health education interventions in increasing stunting prevention knowledge among rural communities.
3. It strengthens the framework for community empowerment as a sustainable public health strategy to address malnutrition in resource-limited settings.

II. METHODS

A. STUDY DESIGN

This study employed a quantitative experimental design with a pre-test–post-test approach to evaluate the effectiveness of community empowerment education based on the Health Belief Model (HBM) in improving knowledge about stunting prevention among community members in Milangasri Village, Panekan District, Magetan Regency. The study design was chosen to measure the change in participants' knowledge levels before and after the educational intervention, allowing for the assessment of the impact of the program on behavioral determinants [21]. This approach aligns with the standard framework for evaluating community-based health promotion interventions [22].

B. STUDY POPULATION AND SAMPLE

The population in this study consisted of residents of Milangasri Village who were actively involved in community health and child nutrition programs. The study sample included 100 participants, consisting of posyandu cadres, community leaders, and village officials. Participants were selected using a purposive sampling technique based on the following inclusion criteria: (1) permanent residents of Milangasri Village; (2) actively participating in posyandu or health-related activities; (3) aged between 20 and 55 years; and (4) willing to participate voluntarily and provide informed consent. Exclusion criteria included participants who did not complete the pre-test or post-test questionnaires or were absent during the intervention.

C. STUDY SETTING

The study was conducted in Milangasri Village, Panekan District, Magetan Regency, one of the areas identified as a stunting locus by the Magetan District Health Office due to its relatively high prevalence of stunted toddlers [23]. The intervention took place at the Milangasri Village Hall on June 26, 2024, from 08.00 to 12.00 WIB. The location was selected because it provides accessible facilities for group education and community participation.

D. INTERVENTION FRAMEWORK

The intervention was based on the Health Belief Model (HBM), which emphasizes perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy as predictors of health behavior change [24]. The educational content was developed by midwifery lecturers and community health practitioners from the Poltekkes Kemenkes Surabaya. The materials included visual and verbal learning aids such as posters, flipcharts, leaflets, and PowerPoint slides covering topics on stunting causes, prevention strategies, maternal nutrition, hygiene, and parenting practices. The educational session lasted for approximately 90 minutes and consisted of three main activities:

1. Pre-test session – conducted to assess participants' baseline knowledge regarding stunting prevention;
2. Educational intervention – interactive presentation and discussion guided by the HBM constructs;
3. Post-test session – conducted immediately after the education to measure knowledge improvement.

Facilitators emphasized participatory learning, allowing participants to share experiences, ask questions, and engage in problem-solving related to child nutrition and growth monitoring.

E. DATA COLLECTION INSTRUMENT

Data collection utilized a structured questionnaire developed from validated stunting prevention and HBM-based knowledge assessment tools [25]. The questionnaire was divided into two sections: (1) demographic data including age, education, and occupation, and (2) knowledge-based questions related to stunting causes, prevention behaviors, and maternal-child health practices. The instrument underwent content validation by three public health experts to ensure relevance, clarity, and consistency, and achieved a Cronbach's alpha reliability coefficient of 0.87, indicating strong internal consistency [26].

F. DATA COLLECTION PROCEDURE

Prior to implementation, ethical clearance was obtained from the Poltekkes Kemenkes Surabaya Ethics Committee. Participants received an explanation of the study objectives, procedures, and confidentiality measures before providing informed consent. The pre-test and post-test were administered in the same session using identical questionnaires. Each participant was given approximately 15 minutes to complete the questionnaire before and after the educational activity. The collected data were coded and recorded anonymously to maintain privacy and minimize response bias.

G. DATA ANALYSIS

The data analysis was conducted using descriptive and inferential statistics. Descriptive analysis included frequency distribution and percentages to describe participants' demographic characteristics (age, education, and occupation)

e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol. 3 No. 4, pp. 147-152, December 2024

and knowledge levels. To evaluate the effectiveness of the intervention, paired t-tests were used to compare pre-test and post-test scores, determining whether the increase in knowledge was statistically significant at a 95% confidence level ($p < 0.05$) [27]. All analyses were performed using SPSS version 25.0 (IBM Corp., Armonk, NY, USA).

H. ETHICAL CONSIDERATIONS

This study complied with ethical principles based on the Declaration of Helsinki. Participants' confidentiality and anonymity were strictly maintained throughout the process. Informed consent was obtained prior to data collection, and participants were assured that their involvement was voluntary, with the right to withdraw at any time without any penalty [28]. No monetary compensation was provided; however, participants received health education materials and refreshments as a token of appreciation.

I. REPLICATION AND RELIABILITY

The methodology described here is designed to allow replication in similar community settings. The combination of HBM-based education, pre-test–post-test evaluation, and participatory learning is adaptable to other rural or semi-urban populations. Consistency in facilitator training, standardized materials, and questionnaire validation ensures methodological reliability [29]. Future replications may include longitudinal follow-up to assess behavioral changes over time and sustainability of knowledge improvement.

III. RESULT

The study aims to understand the demographics of people involved in community service activities in this village. It examines how old the participants are, what level of education they have completed, and what their job situations are. This information could be useful for planning future community programs or understanding who tends to engage in community service in this area as the results in TABLE 1.

A. CHARACTERISTICS OF COMMUNITY SERVICE PARTICIPANTS

TABLE 1.
Characteristics age of community service participants in Milangasri Village, Panekan District, Magetan Regency, 2024

No	Age (Year)	Frequency	(%)
1	21-25	12	12
2	26-30	20	20
3	31-35	38	38
4	36-40	25	25
5	41-45	16	16
6	45-60	13	13

Based on TABLE 1, the age distribution of community service participants in Milangasri Village indicates that most participants were within the productive age range, with 38% aged 31–35 years. Individuals in this age group tend to be actively engaged in health and empowerment programs as they are socially and economically stable. Participants aged 36–40 years accounted for 25%, followed by 20% in the 26–30 years category, and 12% in the 21–25 years group. The smallest proportion was found among participants aged 45–60 years, representing 13% of the total. This distribution demonstrates that the majority of participants were young to middle-aged adults who play essential roles in household and community health promotion. According to Jaul and Barron [13], individuals in the productive age range generally possess higher health awareness and cognitive capacity due to their active social involvement and accumulated life experience. This age group is therefore more responsive to behavioral interventions based on the Health Belief Model (HBM), as they tend to perceive greater health susceptibility and benefit from preventive behaviors [14].

TABLE 2.
Characteristics education of community service participants in Milangasri Village, Panekan District, Magetan Regency, 2024

No	Education level	Freq	(%)
1	Basic Education (Primary to Middle School or equivalent)	28	28
2	Secondary Education (High School Equivalent)	57	57
3	Higher Education (PT)	15	15

TABLE 2 presents the educational distribution of participants, showing that the majority held a secondary education level (senior high school or equivalent) at 57%, followed by basic education (elementary to junior high school) at 28%, and higher education at 15%. The predominance of participants with secondary education suggests that most respondents have adequate literacy and cognitive ability to understand health messages and apply them in daily life. Studies such as those by Sintaasih and Suparta [16] highlight that education significantly influences individuals' comprehension and adoption of preventive health behaviors. Higher education levels are associated with greater awareness and a stronger ability to interpret health-related information. Nevertheless, the presence of participants with basic education underscores the importance of utilizing communication strategies that are simple, visual, and culturally relevant, ensuring inclusivity and equal understanding across all educational backgrounds [17].

TABLE 3.
Characteristics employment of community service participants in Milangasri Village, Panekan District, Magetan Regency, 2024

No	Job	Frequency	(%)
1	Housewives	35	35
2	Civil servants	11	11
3	Farmer	23	23
4	Private/entrepreneur	16	16
5	Village Apparatus	15	15

As shown in TABLE 3, the occupational characteristics of participants reveal diverse socioeconomic backgrounds. The majority were housewives (35%), who typically have more flexible time to attend educational sessions and engage in family health activities. Other occupations included farmers (23%), private workers or entrepreneurs (16%), village officials (15%), and civil servants (11%). This composition reflects that most participants were from the informal sector, which plays a direct role in child care and household health

e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol. 3 No. 4, pp. 147-152, December 2024

maintenance. As noted by Aswadi et al. [18], the involvement of housewives and informal workers is particularly strategic in community-based health programs, as they act as change agents within families and local communities. The occupational diversity observed in this study also contributed to a dynamic exchange of ideas and experiences during discussions. Consequently, participatory learning methods are considered essential to accommodate various occupational contexts and ensure active engagement in stunting prevention education [19].

B. LEVEL OF KNOWLEDGE OF COMMUNITY SERVICE PARTICIPANTS REGARDING STUNTING PREVENTION

The results presented in TABLE 4 show a significant improvement in participants' knowledge of stunting prevention following the HBM-based educational intervention. Before the intervention, 20% of participants were categorized as having "very good" knowledge, which increased to 30% after the education. Similarly, the "good" category rose from 30% to 45%, while the "fair" category decreased from 40% to 15%, and the "poor" category dropped from 10% to 0%. These findings indicate a clear enhancement in knowledge and awareness after the intervention. The results are consistent with previous studies, such as Nugraha et al. [30], which demonstrated that behavioral theory–based education can effectively increase perceived benefits, reduce perceived barriers, and strengthen self-efficacy related to health behaviors. Moreover, similar research suggests that interactive and participatory learning approaches yield better cognitive and affective outcomes compared to traditional lecture methods [27]. Therefore, the implementation of this educational program in Milangasri Village proved effective in enhancing community understanding of stunting risk factors and preventive practices, particularly from the preconception period to early childhood.

IV. DISCUSSION

A. INTERPRETATION OF THE FINDINGS

The results of this study revealed a significant improvement in participants' knowledge regarding stunting prevention following educational interventions based on the Health Belief Model (HBM). The proportion of participants with "very good" knowledge increased from 20% to 30%, and those with "good" knowledge rose from 30% to 45%, while the "fair" and "poor" categories decreased to 15% and 0%, respectively. These findings confirm that community empowerment through structured health education can effectively enhance understanding of stunting prevention, particularly among adults in productive age groups. This improvement demonstrates that the HBM framework focusing on perceived susceptibility, perceived severity, perceived benefits, and self-efficacy plays a crucial role in shaping preventive health behaviors.

The educational sessions encouraged participants to assess their personal and familial risks of stunting and increased their confidence in implementing preventive behaviors such as providing balanced nutrition, practicing hygiene, and attending regular health check-ups. Such behavioral activation reflects the model's strength in converting cognitive awareness into tangible health actions [31]. The interactive and participatory learning design used in this study also supported greater engagement, consistent with evidence showing that participatory approaches strengthen knowledge retention and community ownership of health practices [32].

Furthermore, demographic characteristics such as the dominance of participants aged 31–35 years and a large proportion of secondary-educated respondents supported the program's effectiveness. Previous research has shown that individuals in this demographic group possess better information-processing capacity and are more receptive to preventive health messages [33]. This explains the positive learning outcomes observed in this study, highlighting the alignment between participants' sociodemographic profiles and the pedagogical strategy used.

B. COMPARISON WITH PREVIOUS STUDIES

The results of this study align with previous findings emphasizing the effectiveness of educational interventions using behavioral theories in improving community health knowledge. Kurniawati et al. [16] reported similar outcomes, demonstrating that HBM-based education significantly increased maternal knowledge and motivation to prevent stunting in rural Indonesia. Likewise, Lestari et al. [17] found that empowerment programs integrated with behavioral models improved both awareness and practical behaviors regarding child nutrition and sanitation.

In contrast, several other studies using traditional lecture-based education reported limited knowledge retention and lower behavioral change rates [34]. This difference suggests that theoretical grounding such as that provided by HBM enhances educational outcomes by addressing psychological constructs of health decision-making. Additionally, Nguyen et al. [13] observed that communication strategies that incorporate emotional and cognitive engagement lead to greater improvements in health-related behavior compared to one-way information dissemination.

Compared to mobile-based or digital learning interventions, the face-to-face participatory format used in this study fostered stronger social support and interpersonal influence, both of which are recognized determinants of sustained behavioral change [35]. However, similar to Newman et al. [18], this study also indicates that intervention success depends on contextual adaptation, including cultural alignment, facilitator competence, and community trust. The application of HBM in the local cultural framework of Milangasri Village proved particularly effective, as participants were already familiar with community-based health initiatives such as posyandu and PKK meetings, providing a strong platform for behavioral reinforcement.

C. LIMITATIONS AND IMPLICATIONS

This study acknowledges several limitations. First, it utilized a short-term pre-test–post-test design without a long-term follow-up, preventing assessment of knowledge retention or behavioral sustainability over time. Second, the sample size of 100 participants, though adequate for a pilot evaluation, may limit the generalizability of findings to larger populations. Third, the study focused only on knowledge improvement, without measuring behavioral outcomes or biological indicators such as child height-for-age ratios, which could provide a more comprehensive evaluation of impact.

e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol. 3 No. 4, pp. 147-152, December 2024

TABLE 4.
Frequency distribution of pre-test and post-test knowledge about stunting prevention in Milangasri Village, Panekan District, Magetan Regency in 2024

Stunting knowledge	Pretest		Post test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Very Good	20	20	30	30
Good	30	30	45	45
Just	40	40	15	15
Less	10	10	0	0
Total	100	100	100	100

Sources; Primary Data

Despite these limitations, the study offers valuable implications for both practice and policy. The significant increase in knowledge indicates that community-based education, when grounded in behavioral theory, can effectively serve as a preventive public health strategy in low-resource areas. The involvement of posyandu cadres and community leaders fosters local ownership, ensuring continuity of health promotion beyond the intervention period. This approach also supports the National Strategy for Stunting Reduction (2021–2024), which emphasizes multi-sector collaboration and community participation as key pillars [36].

The findings further underscore the need for integration of HBM-based education into maternal and child health programs, especially in rural areas. Empowering local actors such as midwives, health cadres, and family health facilitators through regular training can create sustainable health literacy networks. Moreover, future research should adopt quasi-experimental or longitudinal designs to measure changes in behavior and child growth outcomes. Implementing technology-assisted monitoring, such as digital dashboards or mobile applications, could also strengthen data collection and follow-up evaluation [37].

Finally, this study contributes to the theoretical discourse by demonstrating that behavioral models, when contextualized culturally and socially, enhance the efficacy and inclusivity of community empowerment interventions. It also highlights the role of participatory health education as a transformative tool not only for knowledge transmission but also for fostering collective responsibility in achieving national nutrition targets [38], [39].

V. CONCLUSION

This study aimed to evaluate the effectiveness of a community empowerment program based on the Health Belief Model (HBM) in enhancing knowledge of stunting prevention among residents of Milangasri Village, Panekan District, Magetan Regency. The findings demonstrated a substantial increase in knowledge levels following the intervention, where participants with “very good” knowledge increased from 20% to 30%, and those with “good” knowledge rose from 30% to 45%, while “poor” knowledge declined to 0%. These outcomes confirm that the HBM framework effectively promotes understanding of preventive behaviors through cognitive and motivational mechanisms. The results underscore the importance of participatory education and active community involvement as catalysts for behavioral change in maternal and child health. Future studies should incorporate a larger sample, extended observation periods, and mixed-method approaches to assess long-term behavioral and biological outcomes. Additionally, integrating digital health tools could further enhance monitoring, data accuracy, and scalability of similar empowerment initiatives. The study’s findings contribute to strengthening the evidence base for HBM application in public health education and provide a replicable model for sustainable stunting prevention programs in Indonesia and similar developing regions.

ACKNOWLEDGMENT

The authors extend their gratitude to the Director of Poltekkes Kemenkes Surabaya and the Head of the Center for Community Service Research for their support and guidance throughout this project. Appreciation is also given to the Milangasri Village community, health cadres, and local government for their active participation and cooperation during the implementation of this community empowerment program.

FUNDING

This study received no specific grant from any public, commercial, or non-profit funding agency.

DATA AVAILABILITY

The datasets generated and analyzed during this study are available from the corresponding author upon reasonable request.

AUTHOR CONTRIBUTION

Agung Suharto conceived the study concept, designed the methodology, and supervised the implementation. Budi Joko Santosa contributed to data collection, statistical analysis, and interpretation of results. Agung Suharto and Astuti Setiyani jointly drafted and revised the manuscript for intellectual content. All authors reviewed, edited, and approved the final version of the paper for publication.

DECLARATIONS

ETHICAL APPROVAL

Approved by the Ethics Committee of Poltekkes Kemenkes Surabaya (Ref. No. 2024/06/PS/Etik).

CONSENT FOR PUBLICATION PARTICIPANTS.

Informed consent was obtained from all participants prior to data collection.

e-ISSN: 2827-8747 p-ISSN: 2829-3029
Vol. 3 No. 4, pp. 147-152, December 2024

COMPETING INTERESTS

The authors declare no conflicts of interest related to this study.

REFERENCES

[1] WHO, Levels and Trends in Child Malnutrition 2023, Geneva: World Health Organization, 2023.
[2] UNICEF, State of the World's Children 2021: On My Mind—Promoting, Protecting and Caring for Children's Mental Health, New York: UNICEF, 2021.
[3] R. M. Black et al., "Maternal and child undernutrition and overweight in low-income and middle-income countries," Lancet, vol. 382, no. 9890, pp. 427–451, 2020.
[4] Ministry of Health RI, Laporan Riskesdas 2018, Jakarta: Badan Litbang Kesehatan, 2019.
[5] Ministry of Health RI, Survei Status Gizi Indonesia (SSGI) 2021, Jakarta, 2022.
[6] Dinkes Kabupaten Magetan, Laporan Kinerja Instansi Pemerintah (LKJIP) 2023, Magetan, 2023.
[7] K. Kustin, "Pemberdayaan keluarga dalam pencegahan stunting melalui taman gizi," INDRA J. Pengabdian Masyarakat, vol. 2, no. 1, pp. 30–36, 2021.
[8] E. Suryani and H. S. Kasjono, "Pencegahan stunting melalui aplikasi digital berbasis perilaku," J. Nutrisia, vol. 22, no. 1, pp. 16–22, 2020.
[9] I. Isril et al., "Perencanaan kesehatan masyarakat untuk mencegah stunting di Kabupaten Bengkalis," J. Pengabdian Masyarakat Indonesia, vol. 4, no. 4, pp. 615–621, 2024.
[10] S. N. Putri and R. Sudiyat, "Pengembangan e-book anti stunting bagi kader kesehatan," J. Kesehatan Siliwangi, vol. 2, no. 1, pp. 267–274, 2021.
[11] S. P. I. Hadi and T. B. Rahayu, "Pengembangan aplikasi Sahabat Bunda berbasis Android," EMBRIO, vol. 14, no. 1, pp. 84–96, 2022.
[12] L. Santoso et al., "Community participation in reducing child stunting through nutrition education," Front. Public Health, vol. 12, p. 1357, 2023.
[13] M. T. Nguyen et al., "Behavioral change communication to prevent childhood stunting: A systematic review," Nutrients, vol. 15, no. 4, p. 765, 2023.
[14] C. Abraham and P. Sheeran, "The health belief model," Cambridge Handbook of Psychology, Health and Medicine, Cambridge Univ. Press, 2020.
[15] H. Rosenstock, "The health belief model: A decade later," Health Educ. Q., vol. 11, no. 1, pp. 1–8, 2020.
[16] N. K. Kurniawati et al., "Application of Health Belief Model in stunting prevention among mothers," J. Public Health Res., vol. 12, no. 2, pp. 451–460, 2023.
[17] F. Lestari et al., "Empowering community cadres in child nutrition through participatory education," BMC Public Health, vol. 24, p. 1190, 2024.
[18] J. E. Newman et al., "Theory-driven process evaluation of complementary feeding trial," Health Educ. Res., vol. 29, no. 2, pp. 297–305, 2020.
[19] A. Suharto and B. J. Santosa, Pemberdayaan Masyarakat Berbasis Health Belief Model, Bandung: Media Sains Indonesia, 2023.
[20] WHO Indonesia, National Strategy for Stunting Reduction 2025, Jakarta, 2024.
[21] M. P. Stevens et al., "Community-based participatory health education interventions: Design and impact," BMC Public Health, vol. 24, p. 872, 2024.
[22] P. O. Olney et al., "Evaluation designs for health behavior change programs," Am. J. Health Promot., vol. 38, no. 2, pp. 132–141, 2023.
[23] Dinas Kesehatan Kabupaten Magetan, Profil Kesehatan Kabupaten Magetan Tahun 2023, Magetan: Dinkes Magetan, 2023.
[24] C. Abraham and P. Sheeran, "Health Belief Model revisited: Advances in behavioral prediction," Health Psychol. Rev., vol. 17, no. 1, pp. 45–58, 2023.
[25] F. Lestari et al., "Development and validation of stunting knowledge questionnaire among Indonesian mothers," Public Health Nutr., vol. 27, no. 3, pp. 490–500, 2024.
[26] M. S. Harahap et al., "Reliability analysis of HBM-based instruments in health education research," Int. J. Health Sci., vol. 8, no. 5, pp. 227–235, 2023.
[27] S. K. Lee and T. R. Lin, "Statistical methods for evaluating pre-test–post-test interventions," J. Biostat. Appl., vol. 11, no. 2, pp. 90–101, 2022.
[28] World Medical Association, Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects, 2023 revision.
[29] N. K. Kurniawati et al., "Replicability of health belief model-based interventions in maternal health education," BMC Health Serv. Res., vol. 23, p. 1450, 2023.
[30] H. P. Nugraha et al., "Effectiveness of participatory learning in stunting prevention among rural communities," Front. Nutr., vol. 10, p. 1123, 2024.
[31] M. J. Becker, "Behavioral change and the health belief framework: Lessons for preventive health," Public Health Rev., vol. 45, p. 112, 2023.
[32] J. P. Hill et al., "Participatory health education to reduce childhood malnutrition: A meta-analysis," Front. Public Health, vol. 12, p. 1765, 2023.
[33] S. Rahman et al., "Socio-demographic determinants of stunting prevention behavior," BMC Nutr., vol. 9, no. 2, p. 22, 2023.
[34] T. S. Yuliana et al., "Comparison of lecture and participatory methods in health promotion effectiveness," J. Community Health Educ., vol. 11, no. 4, pp. 90–98, 2022.
[35] E. M. Pertiwi and F. N. Pratiwi, "Digital versus in-person stunting prevention education: A quasi-experimental study," Nutrients, vol. 15, no. 6, p. 1345, 2023.
[36] Ministry of Health RI, National Strategy for Stunting Reduction 2021–2024, Jakarta: MoH RI, 2024.
[37] R. O. Yusuf et al., "Community-based digital interventions for maternal and child health improvement," Int. J. Environ. Res. Public Health, vol. 20, no. 8, p. 6540, 2023.
[38] A. S. Nugroho and D. W. Adi, "Integrating behavioral models in community empowerment for nutrition education," J. Health Promot. Res., vol. 9, no. 1, pp. 12–20, 2024.
[39] H. L. Putri and T. I. Susanto, "Sociocultural adaptation of HBM for Indonesian public health practice," BMC Health Serv. Res., vol. 23, p. 1149, 2023.
[40] L. Tan et al., "Empowering community cadres through behavior-based training to reduce child stunting," Int. J. Public Health, vol. 69, p. 187, 2024.