

Importance of the role of mothers in stunting prevention efforts

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ABSTRACT

Stunting is a growth and developmental disorder in children caused primarily by chronic malnutrition and inadequate access to essential nutrients during critical early childhood. Mothers with adequate nutritional knowledge tend to prioritise their children's dietary needs, enabling optimal growth and development. Preventing stunting is vital due to its long-term impacts on physical, cognitive, and economic potential. This community service activity aimed to enhance mothers' and families' knowledge, awareness, and skills in stunting prevention from an early stage. The program involved 20 women of reproductive age in the working area of Pattingalloang Health Center, Makassar. Activities included health education through socialization, discussions, and distribution of leaflets covering definitions, causes, prevention, and management of stunting. Interactive counseling sessions emphasized the importance of the First 1,000 Days of Life, balanced nutrition, exclusive breastfeeding, and appropriate complementary feeding practices. The high participation and engagement rates reflected increased enthusiasm and awareness regarding stunting, an issue often underestimated in the community. Key supporting factors included active participation, health worker collaboration, and adequate facilities, while limiting factors involved time constraints and fewer participants than targeted. The program significantly improved mothers' understanding of their crucial role in stunting prevention and demonstrated that community-based, participatory interventions effectively support national stunting reduction goals.

Keywords: Balanced Nutrition, Breastfeeding, Mothers' Role, Public Health Education, Stunting Prevention.



INTRODUCTION

Stunting is characterised by impaired growth and development in children, often resulting from chronic malnutrition and inadequate access to essential nutrients during critical early childhood stages, particularly within the first 1,000 days of life [1]. Children who experience nutritional deficiencies during this crucial period are at high risk of developing neurological problems, reduced learning capacity, increased risk of dropping out of school, decreased productivity and earning potential, and diminished ability to provide adequate nutrition and care for the next generation [2] [3].

Maternal factors play a pivotal role in determining a child's nutritional status and risk of stunting. Mothers with adequate nutritional knowledge are more likely to prioritise their children's dietary needs, ensuring optimal growth and development [4]. Conversely, poor maternal nutrition during preconception, pregnancy, and lactation, coupled with biological factors such as short maternal stature, young or advanced maternal age, history of infection, low birth weight, intrauterine growth restriction (IUGR), preterm birth, short birth intervals, and pregnancy complications, significantly increase the likelihood of stunting [5]. Maternal stunting, in particular, can result in reduced blood flow to the fetus, restricted uterine and placental growth, and complications during childbirth due to a narrower pelvic structure, ultimately heightening the risk of stillbirth or birth trauma [6].

Socioeconomic factors also have a substantial influence. Research indicates that children from low-income families are more vulnerable to stunting [7]. Low parental education, especially maternal education, exacerbates the problem, as limited access to health services and insufficient understanding of balanced nutrition hinder early intervention [8]. The 2022 Indonesia Nutritional Status Survey (SSGI) reported a stunting prevalence of 27.2% in South Sulawesi, a decline from 27.4% in 2021 and 30.5% in 2020. In Makassar City, the prevalence decreased significantly from 24.2% in 2021 to 18.4% in 2022. While these improvements are encouraging, the prevalence remains above the WHO-recommended threshold, necessitating sustained and targeted prevention strategies [9].

Nutritional transition in Indonesia has further complicated the issue. As a developing nation, Indonesia has shifted from a traditional diet high in carbohydrates and fiber to one rich in sugar, animal proteins, and fats, driven largely by trade liberalization and increased access to processed foods [10]. While dietary diversity has improved, uncontrolled changes in eating patterns have contributed to rising rates of chronic diseases and poor child nutrition. Preventing stunting is critical due to its long-term impact on children's health, cognitive abilities, and future productivity. Beyond physical growth, stunting impairs brain development, weakens immunity, and reduces educational attainment, ultimately influencing a nation's human capital [11]. Maternal knowledge, nutritional status, and caregiving practices are central to effective prevention. Key measures include promoting exclusive breastfeeding, appropriate complementary feeding, regular health check-ups, and community-based nutritional education [12].

This community service program aims to improve mothers' knowledge, awareness, and skills in preventing and managing stunting from an early stage. By integrating interactive counseling with culturally appropriate educational materials, the initiative seeks to shift perceptions about stunting from merely a matter of height to recognising it as a serious developmental threat. Strengthening maternal capacity through education benefits individual households and supports national efforts toward achieving a stunting-free generation.

METHODS

This community service program was carried out through a series of systematically planned stages, starting with the preparation phase. Preparatory activities included site observation, submission of an activity proposal, consultation with the village midwife, identification of key problems, determination of the theme and counseling methods, and preparation of correspondence and the necessary tools and materials: the activity involved 20 participants, all women of reproductive age. The implementation method consisted of socialisation and group discussion. Participants actively listened to and engaged with the material presented during the session. The moderator facilitated A question-and-answer session, allowing participants to raise issues related to stunting and discuss strategies for prevention, particularly in the context of the widespread availability of low-nutrient fast food.

Educational media in leaflets were used, containing information on the definition of stunting, its causes, prevention strategies, and management. The leaflets served as a visual aid to reinforce the verbal counseling, ensuring participants could take home and review the information. The program emphasized participatory engagement, with two-way communication to enhance knowledge retention and encourage behavioral change toward improved nutrition practices.

RESULT

The survey conducted in Pattingalloang Public Health Center, Makassar's working area, revealed that community understanding of stunting among children was still relatively low. To address this gap, the Community Service Team organized a health education and empowerment program to improve mothers' knowledge regarding stunting, its causes, prevention strategies, and management. The activity occurred on Monday, January 20, 2025, at the Posyandu within the Pattingalloang Public Health Centre's jurisdiction. 20 participants attended it, all women of reproductive age. The intervention was conducted through socialization and discussion sessions, supported by educational leaflets containing comprehensive information on stunting.

During the sessions, participants actively engaged with the material, asked relevant questions, and shared personal experiences related to child nutrition. The discussions addressed practical steps in preventing stunting, including the importance of exclusive breastfeeding, balanced complementary feeding, and healthy eating habits amidst the rising trend of low-nutrient fast food consumption. Observations indicated a noticeable improvement in participants' comprehension by the end of the activity, as reflected in their ability to correctly explain the definition, risk factors, and prevention methods of stunting. This outcome demonstrated the effectiveness of interactive education combined with printed media in enhancing mothers' awareness and readiness to act as the first line of defence against stunting in the household.



Figure 1. Shows the Community Service Team together with the participants during the program implementation.

This community service activity increased mothers' knowledge and awareness regarding the definition, causes, prevention, and management of stunting. Through interactive counseling sessions and educational leaflets, participants better understood the importance of the First 1,000 Days of Life, exclusive breastfeeding, balanced complementary feeding, and healthy dietary habits. Active participation from the mothers, combined with strong support from local health workers and adequate facilities, contributed to the program's success.

Despite the limited number of participants and time constraints, the activity effectively empowered mothers as key agents in stunting prevention at the household level. The outcomes highlight the potential of community-based, participatory interventions to support the national program for accelerating stunting reduction. Future programs are encouraged to involve a wider target audience and extend the duration of sessions to maximise impact.

DISCUSSION

The results of this community service activity indicate that mothers' understanding of stunting, its definition, causes, prevention, and management was initially low but improved significantly after the intervention. This finding is consistent with studies showing that targeted health education can effectively increase parental awareness and knowledge about child nutrition and growth monitoring [13] [14]. Before the counseling session, limited knowledge among participants likely reflected the broader gap in public awareness about stunting as more than just a matter of height, but as a chronic condition with long-term cognitive, physical, and socio-economic consequences [15].

Interactive counselling and printed educational materials (leaflets) effectively delivered key messages. The participatory nature of the session encouraged mothers to actively engage, ask questions, and share experiences [16]. This approach aligns with previous findings that community-based participatory methods enhance information retention and empower participants to adopt healthier practices [17]. Furthermore, the presence of health workers, including midwives and community cadres, played a crucial role in building trust and reinforcing the credibility of the information provided [18].

One of the most notable outcomes was the increased awareness among mothers about the importance of the First 1,000 Days of Life (HPK). From conception to the

child's second birthday, this period is critical for preventing stunting and ensuring optimal brain development [19]. During the discussion, participants demonstrated improved understanding of the role of exclusive breastfeeding, appropriate complementary feeding (MP-ASI), and balanced nutrition in supporting healthy growth. These behavioral determinants align with the Ministry of Health's national strategy for stunting prevention, emphasising maternal nutrition, breastfeeding support, and early childhood care as priority interventions [20].

However, despite the success in improving knowledge, the activity faced certain limitations that could affect its long-term impact. The small number of participants (20 out of the targeted 35) limits the immediate reach of the intervention. While the session was practical for those who attended, the overall coverage in the community remains limited. This reflects a common challenge in public health outreach, where logistical constraints, time availability, and competing priorities can hinder participation [21]. Additionally, the short duration of the intervention means that behavioural change was not directly measured; knowledge gains do not always translate into sustained practice without follow-up support [22].

Environmental and socio-economic factors also remain significant barriers to stunting prevention in this setting. As highlighted in the introduction, low household income, maternal education levels, and limited access to health services are strong predictors of stunting prevalence [23]. While education can address knowledge gaps, structural challenges such as food insecurity, poor sanitation, and limited maternal healthcare access require multi-sectoral interventions. For example, without economic support or community-level food programs, mothers may struggle to provide nutrient-rich meals, even with adequate knowledge.

In terms of program implementation, the strong support from local health workers and community leaders was a major enabling factor. Collaboration with the puskesmas (primary health centre) ensured logistical readiness and increased program legitimacy [24]. This mirrors evidence from other community health programs showing that integrating educational interventions into existing health service structures increases sustainability and acceptance [25]. The distribution of leaflets also adds value as a take-home resource that participants can revisit and share with other family members, potentially extending the intervention's reach beyond direct participants.

Looking ahead, sustainability will be key to ensuring the long-term benefits of this intervention. Periodic follow-up sessions, home visits by cadres, and integration of stunting education into routine maternal and child health services could reinforce the knowledge gained and promote consistent healthy practices. Furthermore, expanding participation through targeted outreach such as flexible session scheduling, mobile counseling units, or integrating sessions into existing community gatherings could address the participation gap experienced in this program.

Another important consideration is integrating nutrition education with other public health measures, including sanitation campaigns, micronutrient supplementation, and maternal health services. Stunting is a multifactorial problem that requires an integrated approach, combining behavioral change communication with structural interventions to address underlying determinants. Adopting a holistic strategy makes it possible to create a supportive environment where mothers are informed and empowered to act. This activity demonstrated that community-based, participatory health education significantly improves maternal knowledge on stunting prevention. Despite limitations in participant numbers and time constraints, the program successfully engaged mothers and

strengthened their role as key agents in household-level nutrition and child growth promotion. Building on this foundation, future efforts should focus on scaling participation, ensuring sustained engagement, and integrating stunting prevention into broader health and social programs. It is possible to contribute meaningfully to national efforts to reduce stunting prevalence and improve future generations' health through sustained community empowerment.

CONCLUSIONS

This community service activity successfully increased mothers' knowledge and awareness regarding the importance of their role in preventing stunting. Through interactive counseling, discussions, and educational media, participants better understood balanced nutrition, exclusive breastfeeding, and appropriate complementary feeding during the First 1,000 Days of Life. Active participation and support from health workers contributed to the smooth implementation of the program, although limitations in participant numbers and time availability were noted. These constraints present opportunities for expanding the scope and frequency of future activities to reach a broader audience. Strengthening community-based, participatory interventions is essential for sustaining behavior change and supporting national efforts to reduce stunting prevalence.

REFERENCES

- [1] N. Adam, J. Fitriarningsih, and M. Basir, "The role of knowledge in improving attitudes and behaviors of stunting prevention in pregnant women," *J. Ilm. Kesehat. Sandi Husada*, vol. 13, no. 2, pp. 403–410, Dec. 2024, doi: <https://doi.org/10.35816/jiskh.v13i2.1230>.
- [2] H. Ashar *et al.*, "A qualitative study in Magelang Central Java Indonesia: Mothers' knowledge, parenting styles and national priority programs managing of stunting in toddlers," *Soc. Sci. Humanit. Open*, vol. 12, p. 101874, 2025, doi: <https://doi.org/10.1016/j.ssaho.2025.101874>.
- [3] R. Ayu Rahmadani, A. Setiawati, I. Aris, A. Lontaan, and P. Prasetyowati, "Effectiveness of nutrition education on stunting prevention behavior in mothers under five," *J. Edukasi Ilm. Kesehat.*, vol. 3, no. 1, pp. 01–08, Mar. 2025, doi: <https://doi.org/10.61099/junedik.v3i1.68>.
- [4] S. Baulia, "Is household shock a boon or bane to the utilisation of preventive healthcare for children? Evidence from Uganda," *Econ. Hum. Biol.*, vol. 52, p. 101333, 2024, doi: <https://doi.org/10.1016/j.ehb.2023.101333>.
- [5] D. Durevall and A.-S. Isaksson, "Aid and child health: A disaggregated analysis of the effects of aid on impaired growth," *World Dev.*, vol. 182, p. 106689, Oct. 2024, doi: <https://dx.doi.org/10.1016/j.worlddev.2024.106689>.
- [6] K. A. Erika *et al.*, "Stunting Super App as an Effort Toward Stunting Management in Indonesia: Delphi and Pilot Study," *JMIR Hum. Factors*, vol. 11, pp. e54862–e54862, Dec. 2024, doi: <https://dx.doi.org/10.2196/54862>.
- [7] M. O. Feiler, E. R. Kulick, K. Sinclair, N. Spiegel, S. Habel, and O. G. Castello, "Toxic metals and pediatric clinical immune dysfunction: A systematic review of the epidemiological evidence," *Sci. Total Environ.*, vol. 927, p. 172303, 2024, doi: <https://doi.org/10.1016/j.scitotenv.2024.172303>.
- [8] L. A. Garina *et al.*, "Maternal, Child, and Household Risk Factors for Children with Stunting," *Open Public Health J.*, vol. 17, no. 1, Sep. 2024, doi: <https://dx.doi.org/10.2174/0118749445321448240823112908>.
- [9] G. Gunasekaran, D. K. Thirugnanam, A. Balasubramaniam, N. N. Jayanthi, and K. V. Leela, "Acute Respiratory Tract Infections in Pediatric Populations of Slum Areas: Navigating Challenges and Dynamics of Immune Responses," *Curr. Pediatr. Rev.*, vol.

- 21, no. 3, pp. 245–267, 2025, doi: <https://doi.org/10.2174/0115733963309043240703115735>.
- [10] M. P. Herrero Jiménez, S. del Pozo de la Calle, C. Cuadrado Vives, and D. Escobar Sáez, “Nutritional supplementation in pregnant, lactating women and young children following a plant-based diet: A narrative review of the evidence,” *Nutrition*, vol. 136, p. 112778, 2025, doi: <https://doi.org/10.1016/j.nut.2025.112778>.
- [11] J. S. Kshatri *et al.*, “A comprehensive assessment of health indicators among tribal populations in Odisha, India (Odisha Tribal Family Health Survey): a community-based, cross-sectional study,” *Lancet Reg. Heal. - Southeast Asia*, vol. 38, p. 100611, 2025, doi: <https://doi.org/10.1016/j.lansea.2025.100611>.
- [12] C. Madziva, M. J. Chinouya, and K. Njoroge, “Experiences of geophagy during pregnancy among African migrant women in London: Implications for public health interventions,” *SSM - Qual. Res. Heal.*, vol. 5, p. 100431, 2024, doi: <https://doi.org/10.1016/j.ssmqr.2024.100431>.
- [13] R. Millati, A. Setyawati, I. Aris Tyarini, and I. Daiyah, “Capacity building of posyandu cadres through education and training in stunting prevention,” *Abdimas Polsaka*, vol. 4, no. 1, pp. 08–14, Mar. 2025, doi: <https://doi.org/10.35816/abdimpolsaka.v4i1.84>.
- [14] N. Muna, S. Misba, T. Taamu, and N. Nurfatima, “The Relationship between Processed Food Consumption and Animal Protein Intake with the Incidence of Stunting in Toddlers,” *J. Ilm. Kesehat. Sandi Husada*, vol. 12, no. 2 SE-Book Review, Dec. 2023, doi: <https://doi.org/10.35816/jiskh.v12i2.1172>.
- [15] N. Nordianiwati, N. Gilang Fitriana, L. Situmean, I. Aris Tyarini, and A. Setyawati, “Education on the role of family in stunting prevention in toddlers,” *Abdimas Polsaka*, vol. 3, no. 1, pp. 14–19, Jan. 2024, doi: <https://doi.org/10.35816/abdimpolsaka.v3i1.62>.
- [16] M. M. Pasqualino *et al.*, “Complementary Food Supplements Fill Energy and Protein Gaps among Children with Dietary Inadequacy in a Complementary Feeding Trial in Rural Bangladesh,” *J. Nutr.*, vol. 155, no. 2, pp. 602–611, 2025, doi: <https://doi.org/10.1016/j.tjnut.2024.12.001>.
- [17] M. J. Nyarko, W. ten Ham-Baloyi, and D. (R. M. . van Rooyen, “Qualitative Exploration of Health Professionals’ Perceptions of Addressing Malnutrition Within the First 1,000 Days,” *J. Nutr. Educ. Behav.*, vol. 56, no. 7, pp. 442–451, Jul. 2024, doi: <https://dx.doi.org/10.1016/j.jneb.2024.03.010>.
- [18] G. V Proaño *et al.*, “Effectiveness, barriers, and facilitators of overweight and obesity prevention strategies in Latin America; a scoping review and qualitative study in Colombia,” *Lancet Reg. Heal. - Am.*, vol. 29, p. 100656, 2024, doi: <https://doi.org/10.1016/j.lana.2023.100656>.
- [19] G. Rezaeizadeh *et al.*, “Maternal education and its influence on child growth and nutritional status during the first two years of life: a systematic review and meta-analysis,” *eClinicalMedicine*, vol. 71, p. 102574, May 2024, doi: <https://doi.org/10.1016/j.eclinm.2024.102574>.
- [20] P. M. Sawadogo, N. H. Ugwu, M. Phiri, and C. Arnaldo, “Prevalence and Factors Associated with Chronic Energy Deficiency among Adolescent Girls and Young Mothers in Sub-Saharan Africa,” *Open Public Health J.*, vol. 17, 2024, doi: <https://doi.org/10.2174/0118749445360112241205070152>.
- [21] R. Sentika *et al.*, “Expert Consensus on Interprofessional Collaboration (IPC) Guidelines on Stunting Management in Indonesian Primary Healthcare (Puskesmas),” *Open Public Health J.*, vol. 17, no. 1, Dec. 2024, doi: <https://doi.org/10.2174/0118749445352608241119164446>.
- [22] S. D. Shanthi, “Impact of integrated child development scheme on nutritional and health status of children,” *Child. Youth Serv. Rev.*, vol. 163, p. 107792, Aug. 2024, doi: <https://doi.org/10.1016/j.childyouth.2024.107792>.
- [23] M. Siddiq, A. Zubair, A. Kamal, M. Ijaz, and S. M. A. Aljeddani, “Risk factors of child malnutrition under 5 years: Evidence from Pakistan using the Composite Index of

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- Anthropometric Failure,” *Nutrition*, vol. 127, p. 112523, Nov. 2024, doi: <https://doi.org/10.1016/j.nut.2024.112523>.
- [24] I. A. Tyarini, A. Setiawati, R. Rahagia, and Y. Maidelwita, “Community empowerment in stunting prevention and control to build a healthy and productive generation,” *J. Pengabd. Masy. Edukasi Indones.*, vol. 1, no. 3, pp. 100–106, Sep. 2024, doi: <https://doi.org/10.61099/jpmei.v1i3.56>.
- [25] S. Suprpto, “Pengaruh Edukasi Media Kartun Terhadap Peningkatan Pengetahuan Ibu dan Status Gizi Anak,” *J. Heal.*, vol. 9, no. 2, pp. 81–87, Jul. 2022, doi: <https://dx.doi.org/10.30590/joh.v9n2.500>.