

Balanced Nutrition Education as an Effort to Prevent Stunting in Toddlers

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ABSTRACT Stunting is one of the health problems that is still highly prevalent in Indonesia, especially in toddlers. This condition has a long-term impact on children's physical growth, cognitive development, and productivity in the future. One of the main factors causing stunting is the ignorance of parents or caregivers about the importance of balanced nutrition in the child's growth period. This community service activity aims to increase public knowledge and awareness, especially among mothers with toddlers, about the importance of providing balanced nutrition to prevent stunting. The method used in this activity is education through counselling, interactive discussions, and distribution of educational media through leaflets and posters. The activity was conducted at the Posyandu and involved health cadres and nutritionists. The evaluation results showed an increase in participants' knowledge by 75% based on the pre-test and post-test. This activity shows that direct and contextual balanced nutrition education can effectively prevent stunting in toddlers.

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1. INTRODUCTION

Stunting is one of the key indicators of chronic nutritional problems that remains a serious challenge in Indonesia. Stunting is a condition of growth failure in toddlers due to chronic malnutrition, particularly during the first 1,000 days of life from conception until the child reaches two years of age (Ayu Rahmadani et al., 2025). Children who experience stunting have a height below the standard for their age, which can lead to long-term impacts on cognitive development, health, and future productivity. According to data from the World Health Organization (WHO) and the Ministry of Health of the Republic of Indonesia, stunting in Indonesia remains above the global threshold, making it a serious public health issue that requires comprehensive intervention (Tyarini, Setiawati, et al., 2024).

One of the main causes of stunting is the lack of parental knowledge, particularly among mothers, regarding fulfilling children's nutritional needs through a balanced diet (Tyarini, Akib, et al., 2024). Inadequate understanding of proper dietary patterns, the composition of nutritious foods, and the importance of exclusive breastfeeding and high-quality complementary feeding (MP-ASI) are contributing factors that worsen the nutritional status of toddlers (Suprpto et al., 2025). Therefore, nutrition education interventions within the community are essential as a preventive effort. A major contributing factor to the high stunting rate is the limited knowledge among parents, especially mothers, about the importance of providing balanced, nutritious food to children (Gupta et al., 2024). Ignorance of proper eating patterns, age-appropriate nutritional needs, and improper feeding practices can result in children not receiving adequate nutrition (Li et al., 2025).

The primary causes of stunting are multifaceted, ranging from inadequate maternal nutrition and poor infant feeding practices to limited access to quality healthcare and sanitation (Honda et al., 2023). However, one of the most addressable factors is the lack of knowledge among parents and caregivers regarding proper nutrition during critical growth periods (Kurnia et al., 2024). While national programs and policies have been implemented, the rate of reduction in stunting prevalence remains slow, underscoring the importance of community-level initiatives. One of the main causes of stunting is the lack of public understanding, especially among parents, regarding the importance of balanced nutrition during a child's growth period (Winarni et al., 2024). Education on healthy eating patterns, the importance of exclusive breastfeeding, and the selection of nutritious complementary foods (MP-ASI) are essential in preventing stunting. Therefore, nutrition-based educational interventions are necessary, particularly through direct approaches such as counselling and community assistance (Lucendo et al., 2024).

This community service activity was a tangible contribution to the university's support of the government's program to reduce the stunting rate. Through balanced nutrition education provided to mothers of toddlers and health cadres at the Posyandu (integrated health post), there is expected to be an increase in knowledge and behavioural changes in child feeding practices. A participatory and educational approach was chosen to ensure that the information delivered could be easily understood and applied daily.

2. METHOD

Based on data from the local Health Center, this community service activity was carried out at the Posyandu, one of the areas with a fairly high prevalence of stunting among toddlers. Before the implementation of the activity, field observations and initial interviews were carried out with Posyandu cadres and several mothers of toddlers to identify the level of knowledge and feeding practices for toddlers. The observations show that most mothers do not understand the concept of balanced nutrition and the importance of proper MP-ASI, and there are still misconceptions about nutritious food. The activity was carried out over one month, from January 10 to February 10, 2025, consisting of preparation, implementation, and evaluation phases. The target group was comprised of

30 mothers of toddlers aged 0–59 months, selected through purposive sampling based on their active participation in Posyandu activities and their availability to attend the sessions in full.

Data collection techniques included pre-tests and post-tests designed to measure participant knowledge changes before and after the educational intervention. The validity of the instruments was assessed through expert judgment involving lecturers and professional nutritionists. At the same time, reliability was tested using internal consistency analysis, yielding a Cronbach's alpha value greater than 0.7, indicating strong reliability. The program consisted of three main sessions: (1) health education on balanced nutrition and stunting, (2) interactive discussions on daily toddler feeding practices and common challenges, and (3) distribution of educational media in the form of leaflets and posters. The service team delivered the sessions with a nutritionist from the local health centre. Data were analyzed using descriptive quantitative analysis to compare pre-test and post-test scores and descriptive qualitative analysis based on discussion results and participant feedback. Initial conditions before the program revealed low community awareness of the importance of balanced nutrition and suboptimal feeding practices. This activity aimed to improve knowledge, encourage healthier feeding behaviours, and contribute meaningfully to stunting prevention efforts at the community level.

3. RESULT AND DISCUSSION

Community service activities through balanced nutrition education were successfully implemented at Posyandu. The activity involved 30 mothers of toddlers and several health cadres. Before the intervention, participants' knowledge levels were assessed through a pre-test of questions about stunting, balanced nutrition, exclusive breastfeeding, and appropriate complementary feeding (MP-ASI). The pre-test results showed that only 26.7% of participants had a good understanding of the material presented.

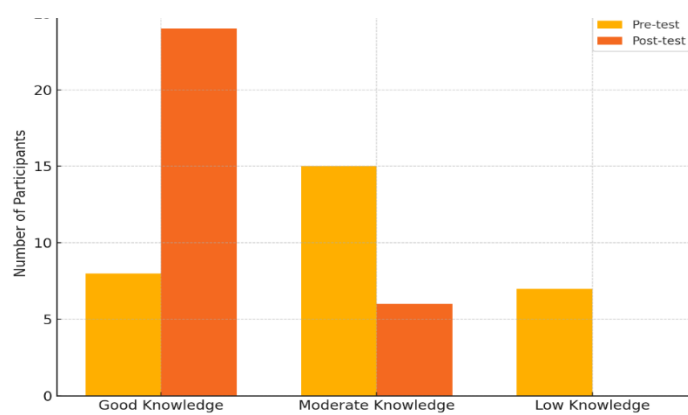


Figure 1. The following is a graph showing the comparison of participants' knowledge levels before and after balanced nutrition education activities

After the educational sessions, which included presentations, interactive discussions, and the distribution of educational leaflets and posters, a post-test was conducted using the same instrument. The results showed a significant improvement in

participants' knowledge, with 81.3% scoring in the "good" category. This indicates a 54.6% increase in understanding, demonstrating the effectiveness of the educational intervention. During the discussion sessions, many mothers shared their experiences and misconceptions about childfeeding, such as the belief that breast milk alone was insufficient after four months or that giving packaged snacks was acceptable for toddlers. These discussions allowed facilitators to clarify and correct these misconceptions directly, making the learning process more contextual and meaningful. The involvement of health cadres as local agents of change was also beneficial, as they could reinforce the messages given during the sessions and continue monitoring feeding practices in their respective communities. Participants responded positively to the materials and delivery methods, stating that the information was easy to understand and applicable daily (Wilschanski et al., 2024).

These results align with previous studies that highlight the importance of nutrition education in changing behaviour and increasing awareness about child nutrition (Dau et al., 2025). This program's participatory and interactive approach proved effective in delivering information and fostering engagement and retention of knowledge (Abate et al., 2024). In conclusion, this community service activity significantly improved maternal knowledge regarding balanced nutrition and child-feeding practices (Kurppa et al., 2024). The expected outcome enhanced awareness and behaviour change as part of a preventive effort against stunting was achieved. It is recommended that similar programs be sustained and expanded to other high-risk areas to support the national stunting reduction strategy further (Nadhiroh et al., 2024). The results of this community service activity show a significant improvement in participants' knowledge regarding balanced nutrition and stunting prevention. Before the intervention, most mothers had a limited understanding of appropriate feeding practices for toddlers, particularly regarding the importance of exclusive breastfeeding and the composition of nutritious complementary foods (MP-ASI) (Garina et al., 2024). After participating in the educational sessions, most participants demonstrated better comprehension and awareness, as reflected in the increased post-test scores (Siddiqa et al., 2024). This improvement highlights the importance of providing structured and contextual nutrition education, especially in communities with limited access to accurate health information (Gutiérrez-Romero, 2024). The participatory approach used in this program through interactive discussions, visual media, and two-way communication proved effective in facilitating understanding and correcting misconceptions. The involvement of local health cadres also played a strategic role in reinforcing key messages and ensuring follow-up in the community setting (Pahuja & Sanghvi, 2024).

Second, simple language, visual materials, and culturally appropriate examples made the information easier to digest and apply daily. Mothers appreciated the leaflets and posters, which were practical reminders at home (Sentika et al., 2024). Moreover, the involvement of local health cadres played a vital role in reinforcing the key messages. As trusted figures in the community, cadres can continue supporting and monitoring even after the formal educational sessions end (Schneider et al., 2023). This ongoing support

system helps ensure sustainability and the gradual transformation of family behaviour. These findings align with existing literature emphasizing the importance of nutrition education as a preventive strategy against stunting. Studies have shown that improving maternal knowledge through structured interventions can significantly influence feeding practices and reduce children's risk of malnutrition-related conditions (Erika et al., 2024). However, it is essential to note that knowledge alone does not always lead to immediate behavioural change. Environmental and socioeconomic factors, food availability, and family support influence nutritional practices. Therefore, while educational efforts are essential, they should be integrated with broader initiatives such as food security programs, maternal health services, and community empowerment. The increase in participants' knowledge after the intervention confirms that community-based nutrition education can support stunting prevention efforts effectively and practically. Future programs should consider incorporating regular follow-ups and multi-sectoral collaboration to enhance the impact and sustainability of such initiatives (Hossain et al., 2024).

The findings are consistent with previous studies that emphasize the effectiveness of educational interventions in changing maternal behavior and improving nutritional practices. Knowledge enhancement is a critical first step toward behaviour change, which can lead to improved child nutritional outcomes and reduced stunting prevalence over time. Furthermore, the fact that no participants remained in the "low knowledge" category after the program indicates that even short-term educational efforts can yield measurable benefits when delivered effectively. However, sustained impact requires continued reinforcement, follow-up monitoring, and integration with other health and nutrition programs at the community level. Higher education institutions can play a vital role in this context by collaborating with local health services to provide evidence-based education and community empowerment. This program demonstrates how university-led initiatives can complement government strategies in tackling public health challenges, particularly stunting.

4. CONCLUSION

This community service activity demonstrated that balanced nutrition education has a positive impact on increasing maternal knowledge regarding proper child-feeding practices as a preventive effort against stunting. The significant improvement in participants' understanding after the intervention reflects the effectiveness of direct, participatory, and context-based educational approaches. By involving mothers and local health cadres, the program not only succeeded in transferring knowledge but also empowered the community to make healthier decisions for their children's growth and development. The results suggest that providing accessible and practical nutrition education at the community level can contribute meaningfully to national stunting reduction efforts. However, to ensure long-term behavioural change, such interventions should be continuous and integrated with broader health and nutrition programs. It is

recommended that similar activities be expanded to other high-risk areas and supported through multi-sectoral collaboration.

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CONFLICT OF INTERESTS

All authors declare no conflict of interest in this community service program.

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