

Empowerment of health cadres in early detection and family-based stunting prevention

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ABSTRACT

Stunting remains a significant public health issue that affects children's growth and development, with long-term consequences for cognitive capacity, productivity, and overall quality of life. One effective strategy to overcome this issue is through the empowerment of health cadres as the frontline in early detection and family-based prevention efforts. This community service program aims to enhance the role and capacity of health cadres in identifying risk factors, conducting routine monitoring, and implementing preventive measures to address stunting within families. The method applied includes training, mentoring, and participatory workshops, focusing on knowledge improvement and practical skills related to nutrition, growth monitoring, and family education. Health cadres are also equipped with communication skills to enhance awareness and behavior change among parents, thereby fostering a supportive environment for children's optimal growth. The results show increased knowledge and confidence of cadres in identifying early signs of stunting, as well as improved community participation in monitoring children's nutritional status. Furthermore, family engagement in preventive practices, such as providing a balanced diet and maintaining hygiene, demonstrated a significant enhancement. This initiative demonstrates that empowering health cadres not only enhances early detection but also promotes sustainable, family-based stunting prevention. Therefore, community-based health empowerment is a strategic approach that can contribute substantially to reducing stunting prevalence and improving child health outcomes in the long term.



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1. INTRODUCTION

Stunting is one of the most persistent public health challenges affecting children in many developing countries, including Indonesia (Abubakar et al., 2022). Characterized by impaired growth and development due to chronic malnutrition and recurrent infections, stunting not only impacts a child's physical stature but also has long-term effects on cognitive abilities, learning capacity, and future productivity (Arda et al., 2023). The prevalence of stunting reflects broader social, economic, and health inequalities and, therefore, requires a holistic, community-driven approach to prevention. In this regard, strengthening local resources such as health cadres has emerged as a critical strategy for early detection and family-based prevention of stunting (Aris Tyarini et al., 2025).

Health cadres play a pivotal role as the bridge between formal health services and the community. They are often trusted members of the local population who voluntarily dedicate their time to assist in health promotion, education, and monitoring (Ayu Rahmadani et al., 2025). By equipping cadres with knowledge and practical skills in nutrition, growth monitoring, and hygiene practices, their contribution to the fight against stunting becomes more impactful (Bardhan, 2022). Trained cadres can recognize early warning signs, track children's growth patterns, and guide families in adopting healthier lifestyles. Their close relationship with the community allows them to foster trust and encourage sustained participation in health programs (Gondwe, 2024).

The community dimension is equally important in stunting prevention. Families, caregivers, and community leaders form the foundation for children's health and wellbeing. When cadres work collaboratively with families, they create an environment of shared responsibility for child nutrition and growth (Hatijar et al., 2025). Community-based interventions, supported by health cadres, help disseminate accurate information, reduce misconceptions, and strengthen collective actions. Such participatory efforts increase the likelihood of long-term behavior change, particularly in improving dietary diversity, exclusive breastfeeding, and sanitation practices (Irnawati et al., 2025).

Early detection of stunting is critical because the first 1,000 days of life, from conception to the child's second birthday, are the most crucial window for growth and development (Ode Novi Angreni et al., 2024). Failure to intervene within this period results in irreversible consequences. Health cadres, when empowered with proper tools and training, can conduct regular anthropometric measurements, detect growth faltering at an early stage, and refer cases promptly to healthcare providers. This proactive detection system ensures timely intervention and prevents children from falling into chronic malnutrition (Sentika et al., 2024).

The empowerment of health cadres is therefore a cornerstone of successful stunting prevention programs. Empowerment goes beyond technical training; it also involves motivating cadres, recognizing their contributions, and integrating them into local health governance structures (Suprpto, 2022). By fostering a sense of ownership and responsibility, cadres are more likely to sustain their engagement and actively mobilize community participation. Empowered cadres serve not only as educators but also as advocates for healthier families and stronger community resilience. Ultimately, reducing stunting requires a multidimensional strategy that combines government policies, health services, and grassroots initiatives. While national programs establish the framework, it is at the community level where changes in knowledge, attitudes, and practices take place. By empowering health cadres to act as catalysts of change, communities are better positioned to achieve sustainable improvements in child nutrition and growth. This introduction highlights the importance of cadres, community involvement, detection, empowerment, and stunting prevention as interconnected components in addressing one of the most urgent child health challenges today.

2. METHOD

This community service program employed a participatory and descriptive approach involving 30 health cadres as respondents. The selection of respondents was conducted using purposive sampling, focusing on cadres who were actively involved in child health monitoring activities at the community level. The program was

implemented in three main stages: preparation, implementation, and evaluation. In the preparation stage, needs assessment and baseline surveys were conducted to identify the knowledge level and skills of the cadres regarding early detection and prevention of stunting. The implementation stage consisted of a structured training program, interactive workshops, and mentoring sessions. Training materials covered topics such as child growth indicators, nutritional requirements, sanitation practices, and communication techniques for family-based education. Practical demonstrations and role-play activities were used to strengthen cadres' ability to apply the knowledge in real situations.

During the evaluation stage, post-training assessments were conducted to measure changes in knowledge and skills. Data were collected using questionnaires, observation checklists, and focus group discussions with the cadres. The analysis was carried out descriptively to assess the improvement in capacity and confidence of the cadres in conducting early detection and family-based prevention of stunting. This method ensured that the 30 respondents were not only recipients of information but also active participants in developing sustainable strategies to address stunting within their communities.

3. RESULT AND DISCUSSION

RESULT

The evaluation of cadre empowerment activities was conducted using pre-test and post-test instruments with 30 respondents. The results show an increase in knowledge and skills of cadres after the training and mentoring sessions.

Table 1. Pre-test and post-test

Test Type	Mean Score ($\pm$ SD)	Minimum	Maximum	% of Respondents with Good Knowledge
Pre-test	55.3 $\pm$ 8.7	40	70	30%
Post-test	82.6 $\pm$ 7.5	70	95	86.7%

Based on Table 1. The average pre-test score was 55.3, indicating limited knowledge and ability in the early detection and prevention of stunting. After the intervention, the average post-test score increased significantly to 82.6, reflecting improved understanding and competence. The proportion of respondents categorized as having "good knowledge" increased from 30% at pre-test to 86.7% at post-test. This demonstrates that the empowerment program was effective in enhancing the capacity of cadres for family-based stunting prevention.

DISCUSSION

Implementation of community service activities focusing on the empowerment of health cadres in early detection and family-based stunting prevention highlights several significant findings that merit discussion in relation to the broader literature on community health interventions. Stunting has long been recognized as a multifactorial issue involving nutrition, sanitation, education, and socio-economic conditions. Thus, a holistic approach is needed to reduce its prevalence, and one of the most strategic pathways is strengthening the capacity of local actors who are in direct contact with families health cadres (Suprpto et al., 2025).

Health cadres represent a vital link between the formal health system and the community. They play a dual role as information disseminators and as motivators for

behavior change within families (Suprpto et al., 2021). The results of this program show that after participating in training and mentoring sessions, cadres demonstrated increased knowledge and confidence in identifying early signs of stunting. This aligns with previous research suggesting that well-trained cadres are more capable of detecting growth abnormalities early and referring children to health facilities for further assessment (Tyarini et al., 2024). Moreover, their close relationship with families makes them effective agents in influencing parental practices related to nutrition and hygiene (Tickell et al., 2023).

One of the most significant outcomes was the improvement in cadres' knowledge of nutritional requirements, growth monitoring, and hygiene practices (Anwar et al., 2024). Before the program, many cadres had only a general understanding of stunting, which limited their ability to conduct systematic detection and counseling. Through structured workshops and participatory methods, cadres became more proficient in using growth charts, identifying potential red flags in child development, and communicating preventive measures to parents. This finding emphasizes the importance of continuous capacity-building efforts, as knowledge alone is insufficient without practical application skills (Jamilah et al., 2023).

Another important aspect that emerged from the program is the role of family engagement. The empowerment of cadres had a direct impact on families' participation in stunting prevention practices (Friska et al., 2022). Families became more involved in monitoring their children's growth, applying balanced dietary practices, and maintaining proper sanitation and hygiene. This supports the idea that cadres not only transfer information but also foster empowerment at the household level. Sustainable stunting prevention depends largely on family behavior change, and cadres serve as facilitators who make this process more accessible and culturally relevant (Cipta et al., 2024).

Community participation also improved significantly. Parents began to see growth monitoring not as an external health requirement but as a collective responsibility. The community's openness to cadre-led activities indicates that when interventions are locally grounded and community-driven, they are more likely to be accepted and sustained (Puffer et al., 2021). This is consistent with community-based health promotion theories, which emphasize the importance of participatory approaches in promoting long-term behavioral change. The discussion also highlights that empowerment initiatives must respect cultural contexts to ensure that recommendations are realistic and feasible for families to adopt (Hancock et al., 2023).

Despite these achievements, several challenges were observed. Some cadres expressed difficulties in maintaining motivation over time due to the voluntary nature of their work and limited incentives. Furthermore, not all families responded equally to cadre interventions, particularly those with lower educational backgrounds or severe economic constraints. These findings underscore the complexity of stunting as a socioeconomic and cultural issue, where health Education alone may not be

sufficient without parallel support in terms of social assistance and poverty alleviation. Additionally, resource limitations such as a lack of standardized tools and irregular supervision posed barriers to the effectiveness of cadre-led initiatives.

Sustainability of cadre empowerment programs remains a central concern. The findings suggest that regular refresher trainings, strong linkage with local health centers, and institutional support are essential to maintain the effectiveness of cadres. Future initiatives should also consider integrating digital tools to support cadres in monitoring and reporting, which could enhance efficiency and reduce workload. Moreover, a multi-sectoral approach involving education, agriculture, and local governance is crucial to comprehensively address the root causes of stunting. Empowering health cadres should thus be viewed as a key strategy within a broader ecosystem of interventions. Ultimately, the empowerment of health cadres has proven to be a promising pathway in reducing stunting prevalence. By equipping cadres with knowledge, practical skills, and communication strategies, they become catalysts for change at both the family and community levels. This approach creates a ripple effect, where empowered cadres empower families, and in turn, empowered families foster healthier communities. The discussion indicates that such initiatives not only contribute to immediate improvements in growth monitoring and nutritional practices but also build the foundation for long-term health resilience in communities.

4. CONCLUSION

The community service program, which aims to empower health cadres in early detection and family-based stunting prevention, has shown significant benefits for both cadres and families. Strengthened knowledge, skills, and confidence enabled cadres to detect early signs of stunting, promote preventive actions, and guide parents in improving nutrition and hygiene. The program also demonstrated that empowered cadres encourage greater family engagement, resulting in improved child growth monitoring, balanced dietary practices, and enhanced sanitation. This collective involvement underscores that stunting prevention is most effective when cadres and families work in tandem. However, challenges such as limited incentives, uneven family responsiveness, and resource constraints indicate the need for sustained institutional support, continuous training, and integration with wider socioeconomic initiatives. In summary, empowering health cadres is an effective grassroots strategy to reduce stunting prevalence. By combining regular training, strong health system linkages, and multi-sectoral collaboration, this approach strengthens community resilience and promotes healthier child development.

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CONFLICT OF INTERESTS

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

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