

Community service initiative: Empowering Mothers in Wongsorejo, Banyuwangi, East Java to Prevent Stunting Through Education and Complementary Feeding Circle Demonstrations

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World Journal of Advanced Research and Reviews, 2024, 23(03), 1814–1820

Publication history: Received on 04 August 2024; revised on 12 September 2024; accepted on 14 September 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.23.3.2809>

Abstract

The challenge of stunting in Indonesia remains critical, with the National Basic Health Research of 2018 indicating a high prevalence rate of 30.8%. Addressing stunting effectively requires targeted interventions and behavior change strategies. This community service project aimed to tackle stunting in Wongsorejo, Banyuwangi, East Java, through a comprehensive approach focused on nutrition and complementary feeding practices. The initiative was structured around three main activities: a seminar on stunting, counseling on complementary feeding, and a cooking demonstration. The seminar aimed to enhance understanding of stunting, including its causes, consequences, and preventive measures, with a specific focus on the role of mothers. The counseling sessions were designed to educate mothers about the implementation of complementary feeding circles to ensure their infants receive adequate nutrition. The cooking demonstration provided practical guidance on preparing nutritious complementary foods using local ingredients. This community service project targeted mothers in the Wongsorejo area, along with representatives from local health centers and community leaders. The objective was to improve knowledge and practices related to stunting prevention, nutrition, and healthy feeding habits. Methods included educational seminars, interactive counseling, and practical demonstrations. Overall, this project seeks to empower mothers with the necessary knowledge and skills to combat stunting, thereby contributing to improved child health and nutrition in the Wongsorejo community. The effectiveness of these activities was evaluated through pre- and post-intervention assessments.

Keywords: Stunting Prevention; Complementary Feeding; Non-Communicable Diseases; Healthcare Delivery; Healthy Lifestyle

1. Introduction

Stunting is a critical public health issue that affects millions of children worldwide, particularly in low- and middle-income countries (1). Defined as impaired growth and development resulting from poor nutrition, repeated infection, and inadequate psychosocial stimulation, stunting has profound implications not only for the affected individuals but also for broader society (2). In Indonesia, the prevalence of stunting remains alarmingly high, despite numerous efforts by the government and non-governmental organizations to combat the problem. According to the World Health

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Organization (WHO), stunting is considered one of the most significant barriers to human development, leading to long-term effects on physical and cognitive abilities, productivity, and economic potential. The prevalence of stunting in children under the age of five is determined by the proportion of children whose height-for-age falls more than two standard deviations below the median, according to the WHO Child Growth Standards (4). The high prevalence of stunting in Indonesia, particularly in rural districts, requires the urgent need for targeted interventions that address the root causes of this condition (3). The issue of stunting in Indonesia is a critical concern that requires effective management. Data from Basic Health Research in 2018 indicate that the prevalence of stunting in Indonesia remains significant at 30.8%, with 11.5% classified as very short and 19.3% as short (5). The Indonesian Toddler Nutrition Status Survey of 2019 reported a stunting rate of 27.7%, and this figure was still 24.44% in 2021. These rates exceed the World Health Organization's recommended threshold of 20%. The Indonesian government aims to reduce the national stunting rate to 14% by 2024 (6).

Key factors contributing to stunting include inadequate nutrition and insufficient dietary intake for children, incorrect parenting practices stemming from limited knowledge and education among pregnant and breastfeeding mothers, poor sanitation conditions such as a lack of clean water facilities and inadequate toilet facilities, and limited access to essential health services for pregnant women, breastfeeding mothers, and young children (2,7). Stunting affects children both in the short and long term. In the short term, it results in physical growth deficits, with a child's height falling below the average for their age group. Additionally, it impacts cognitive development by disrupting brain growth, which can impair intelligence. Over the long term, stunting increases susceptibility to chronic diseases such as diabetes, obesity, cardiovascular conditions, cancer, stroke, and disabilities in later life (8). Furthermore, stunting has broader implications for the quality of a nation's human resources, as it affects the future generation's potential. If stunting is not promptly addressed, it could lead to a decline in the overall quality of human resources in the future (8). The community of Wongsorejo in Banyuwangi, East Java, is one such district where stunting poses a significant challenge (9).

A comprehensive and community-centered approach that empowers local populations, particularly mothers, with the knowledge and tools necessary to improve their children's health and nutrition are one of the solutions to address this issue (10). This community service project was designed with the specific aim of addressing the issue of stunting in the Wongsorejo district through a series of targeted educational and empowerment activities. By focusing on mothers, who are often the primary caregivers and decision-makers in households, this project seeks to create a sustainable impact on the nutritional practices and health outcomes of children in the community. The project was structured around three core activities: a seminar on stunting, counseling on complementary feeding, and a hands-on cooking demonstration (11,12).

Each of these activities was carefully crafted to address different aspects of stunting prevention, from increasing awareness and knowledge to providing practical skills and support. The seminar on stunting provided essential information about stunting, its causes, and long-term effects, aiming to motivate participants to take preventive action in their communities (13). It involved local health workers, community leaders, and mothers to spread awareness. Complementary counseling sessions offered personalized guidance on infant nutrition, addressing mothers' questions and experiences. The cooking demonstration equipped mothers with practical skills to prepare nutritious meals, fostering confidence and improving community nutrition practices. This community service project was grounded in the belief that empowering individuals with knowledge and practical skills is essential for achieving long-term improvements in public health (11,13,14).

2. Methods

The implementation method for this community service activity involves a multi approach centered on community empowerment and active participation, designed to foster a deep and lasting impact on the target population. This method was chosen to ensure that the community, particularly mothers in the Wongsorejo district of Banyuwangi, East Java, are not merely passive recipients of information but are active contributors to their own and their children's health and well-being. The engagement of various stakeholders, including representatives of local health centers, community leaders, and young mothers, was integral to the success of this initiative, ensuring a broad-based and inclusive approach to tackling the issue of stunting—a critical public health concern in Indonesia. The planning and execution of this project emphasized the importance of obtaining informed consent from all individual participants, ensuring that they understood the purpose and scope of the activities and were willing and enthusiastic participants in the process.

The strategies employed in this community service project were meticulously tailored to align with the specific objectives of the initiative, ensuring that each activity addressed a key component of the overarching goal of preventing stunting through education and empowerment. The activities were carefully designed to cater to the unique needs and

characteristics of the target population, taking into account their demographic profiles, levels of education, and socio-economic backgrounds. This tailored approach was crucial in ensuring that the information provided was relevant, accessible, and actionable for the participants.

2.1. Seminar on Stunting

The seminar on stunting was conceptualized as a cornerstone activity within this community service project, aimed at substantially increasing awareness and knowledge among the participants regarding the issue of stunting. Stunting, which is defined as impaired growth and development in children due to chronic malnutrition, is a critical health issue that has far-reaching consequences, not only for the affected children but also for the community and the nation as a whole. The seminar was structured to provide comprehensive education on several key aspects of stunting, including its definition, the biological and social factors that contribute to it, methods for early detection, the long-term impact of stunting on children's physical and cognitive development, and the various management strategies that can be employed to prevent and mitigate its effects. Moreover, the seminar explored the crucial role that mothers and the broader community can play in the prevention of stunting, emphasizing the importance of community-wide efforts and support systems in addressing this pervasive issue.

The target audience for this seminar included all participants from the Wongsorejo district, with a specific focus on representatives from local health centers, community leaders, and mothers, as these individuals are in key positions to influence and support the health and nutrition of children in their communities. By involving these stakeholders, the seminar aimed to foster a network of informed and motivated individuals who could act as advocates for stunting prevention within their respective spheres of influence. The seminar was designed to accommodate up to 50 participants, ensuring a manageable group size that would facilitate meaningful interaction, discussion, and engagement among attendees.

During the seminar, several important pieces of information were collected and analyzed to enhance the effectiveness of the activity and inform future initiatives. These included detailed demographic data about the participants, such as their identities, education levels, occupations, and other relevant background information. This data collection was essential for tailoring the content and delivery of the seminar to the specific needs and characteristics of the audience, ensuring that the information provided was both relevant and comprehensible. In addition to demographic data, the participants' interest and motivation in attending the seminar were also assessed, providing valuable insights into the factors that drive engagement in health education activities.

The seminar's implementation was rigorously evaluated, with a particular focus on key logistical and content-related aspects. These included the timing of the seminar, the suitability of the venue, the accessibility of the location, and the relevance and appropriateness of the materials presented in relation to the promotion of stunting prevention. Feedback and suggestions were actively solicited from participants to identify districts for improvement and to guide the planning of future activities.

The effectiveness of the seminar was evaluated through the use of a pre-test and post-test design, which involved administering a questionnaire to participants both before and after the seminar. The questionnaire consisted of Multiple Choice Questions (MCQs) designed to assess participants' knowledge of stunting, including its causes, effects, and prevention strategies. The data collected from these assessments were analyzed using a ratio scale, allowing for a quantitative evaluation of the change in participants' knowledge as a result of the seminar. The purpose of this evaluation was to measure the change in participants' knowledge, attitudes, and behaviors as a result of their participation in the project. This process provided a clear and quantifiable measure of the project's impact, as well as valuable insights into districts where further education and support might be needed. The post-test was designed to mirror the pre-test, allowing for a direct comparison of results and an assessment of the effectiveness of the educational activities. In addition to knowledge assessments, the post-test also included questions designed to gauge participants' satisfaction with the activities, their confidence in applying what they had learned, and their intentions to change their behaviors and practices as a result of the intervention.

2.2. Workshop on the Use of Complementary Feeding Circles (Lingkaran MPASI)

The second major component of the community service project involved workshop sessions focused on the use of complementary feeding circles, known locally as "lingkaran MPASI." This activity was specifically designed to address the critical period of complementary feeding, which is essential for ensuring proper nutrition during infancy and early childhood—a key determinant in preventing stunting. Complementary feeding refers to the introduction of solid foods alongside breastfeeding, and it is during this period that children are most vulnerable to malnutrition if their dietary needs are not met. The counseling sessions were aimed at educating mothers about the importance of providing diverse

and balanced complementary foods to their infants, ensuring that their nutritional needs are met during this crucial developmental stage.

The counseling sessions were tailored to the specific needs of young mothers in the Wongsorejo district, many of whom may face challenges related to food security, knowledge of nutrition, and access to diverse food options. The sessions were designed to be highly interactive, encouraging mothers to share their experiences, challenges, and concerns related to feeding their children. This participatory approach not only helped to ensure that the information provided was relevant and applicable to the participants' daily lives but also fostered a sense of community and mutual support among the mothers.

During the counseling sessions, participants were introduced to the concept of complementary feeding circles, a practical tool that helps mothers plan and prepare balanced meals for their infants. The feeding circles provide a simple and visual guide to ensure that each meal includes a variety of food groups, such as grains, proteins, fruits, and vegetables, which are essential for meeting the nutritional needs of growing children. The sessions also included discussions on the importance of hygiene and food safety in preventing malnutrition and illness, further reinforcing the importance of holistic care during the complementary feeding period. The counseling sessions were carefully evaluated to assess their effectiveness in increasing participants' knowledge and skills related to complementary feeding. This evaluation included both qualitative and quantitative measures, such as participant feedback, knowledge assessments, and observations of changes in feeding practices over time. The insights gained from this evaluation were used to refine the counseling sessions and to develop additional resources and support materials for the participants.

2.3. Cooking Demonstration on Preparing Complementary Feeding Menus

The third component of the community service project was a hands-on cooking demonstration, which was designed to complement the counseling sessions on complementary feeding. This activity was included in the project to provide practical skills and knowledge that mothers could directly apply in their daily lives, thereby reinforcing the information provided during the counseling sessions. The cooking demonstration focused on teaching mothers how to prepare nutritious and balanced complementary feeding (MPASI) menus for their infants, using locally available ingredients that are both affordable and culturally acceptable.

The cooking demonstration was structured to be highly interactive, with participants actively involved in the preparation of the meals. This hands-on approach was intended to build confidence and competence among the mothers, enabling them to replicate the recipes at home. The demonstration included step-by-step instructions on how to select, prepare, and cook a variety of foods, with an emphasis on creating balanced meals that meet the nutritional needs of infants and young children. The recipes demonstrated were carefully chosen to be both nutritious and appealing to children, incorporating a range of food groups to ensure that all essential nutrients were included.

In addition to the practical cooking skills, the demonstration also provided participants with valuable information on food hygiene and safety, which are critical for preventing foodborne illnesses and ensuring that children receive safe and healthy meals. The cooking demonstration was designed to be a fun and engaging activity, encouraging mothers to ask questions, share their own cooking tips and experiences, and learn from one another. The impact of the cooking demonstration was evaluated through both immediate feedback from participants and follow-up assessments of changes in feeding practices at home. Participants were encouraged to implement the recipes and techniques they had learned and to share their experiences during subsequent meetings or counseling sessions. This follow-up helped to reinforce the skills and knowledge gained during the demonstration and provided an opportunity for ongoing support and encouragement.

3. Results and discussion

The community service initiative focused on addressing stunting through a seminar, counseling on complementary feeding, and a cooking demonstration yielded positive results. One of the primary objectives of the program was to enhance participants' understanding of stunting, proper infant nutrition, and effective complementary feeding practices (11). The seminar served as a foundational element of the project, aimed at raising awareness and knowledge about stunting. A pre-test conducted before the seminar assessed the participants' baseline knowledge, while a post-test evaluated the knowledge gained after the seminar. The results showed a significant increase in participants' understanding (13). Prior to the seminar, participants had varying levels of knowledge about stunting, with many demonstrating limited awareness about its causes, consequences, and prevention strategies. After the seminar, participants' responses to the post-test questions improved markedly. The pre-test results from 46 participants, who answered a total of 10 questions, showed that the average participant answered over 75% of the questions correctly.

This was followed by a significant improvement in the post-test results, where participants answered more than 83% of the questions correctly. This high level of correct responses indicates a substantial enhancement in their knowledge about stunting (15).

The counseling sessions on complementary feeding also demonstrated effectiveness. These sessions aimed to provide personalized advice and practical guidance to mothers on how to incorporate appropriate complementary foods into their infants' diets (16). Feedback collected from participants indicated that they found these sessions informative and valuable. Mothers reported a better understanding of the nutritional needs of their infants and felt more confident in their ability to implement recommended feeding practices. The interactive session of the counseling sessions facilitated an exchange of experiences and addressed specific concerns, further reinforcing the learning outcomes. The cooking demonstration, which was designed to offer practical, hands-on experience in preparing nutritious meals, was also well-received. Participants learned how to prepare balanced and healthy meals using locally available ingredients (16). This practical approach not only provided valuable skills but also boosted participants' confidence in their ability to prepare nutritious foods for their families. Observations and feedback indicated that mothers appreciated the opportunity to apply what they learned in a real-world context, leading to an increased likelihood of incorporating these practices into their daily routines (16).

The results of this community service project highlight the effectiveness of the educational interventions in enhancing participants' knowledge and practices related to stunting and infant nutrition (14-16). The significant increase in correct responses on the post-test reflects the success of the seminar in conveying critical information about stunting, its causes, and its prevention. The ability of participants to correctly answer more than 80% of the questions in the post-test demonstrates that the seminar achieved its objective of improving understanding and awareness.

The success of the counseling sessions in providing tailored advice on complementary feeding emphasizes the importance of personalized education in addressing specific needs and concerns. By engaging directly with mothers and offering practical guidance, the counseling sessions helped bridge the gap between theoretical knowledge and practical application (11). This approach ensured that the information was relevant and actionable, leading to meaningful improvements in participants' feeding practices. The positive feedback from mothers suggests that the counseling sessions effectively addressed their concerns and equipped them with the tools needed to enhance their infants' nutrition. The cooking demonstration added another layer of practical education, reinforcing the knowledge gained through the seminar and counseling sessions. By demonstrating how to prepare nutritious meals, the cooking session provided participants with hands-on experience and practical skills. This not only enhanced their understanding of healthy eating practices but also built their confidence in implementing these practices. The success of the cooking demonstration highlights the value of practical, experiential learning in fostering long-term behavior change (16).

Overall, the results of the community service project indicate that a multi approach, combining seminars, counseling, and practical demonstrations, is effective in addressing stunting and improving nutritional practices. The significant increase in knowledge and the positive feedback from participants suggest that the project successfully met its objectives. The high level of correct responses in the post-test reflects a meaningful enhancement in participants' understanding of stunting and its prevention, which is crucial for achieving lasting impact (15). The results of this project also demonstrate the importance of involving local stakeholders, such as health workers, community leaders, and mothers, in the process. By engaging these key groups, the project was able to create a supportive environment for learning and behavior change. The involvement of local health workers and community leaders helped ensure that the information was disseminated effectively and reached a broader audience. The active participation of mothers in the counseling and cooking sessions further reinforced the learning outcomes and facilitated the application of new knowledge in their daily lives. The community service project demonstrated that targeted educational interventions can significantly improve knowledge and practices related to stunting and infant nutrition. The positive outcomes of the seminar, counseling sessions, and cooking demonstration highlight the effectiveness of this approach in addressing stunting and promoting better nutrition. Moving forward, similar initiatives could be expanded and adapted to other communities, building on the success of this project to create lasting improvements in child health and nutrition

4. Conclusion

This community service project in Wongsorejo, Banyuwangi, Indonesia effectively increased knowledge about stunting and improved nutritional practices among participants. The seminar, counseling sessions on complementary feeding, and cooking demonstration led to a significant rise in participants' understanding, as evidenced by high post-test scores. The integrated approach successfully empowered mothers with essential knowledge and practical skills to combat stunting, highlighting the potential for similar initiatives to positively impact public health in other communities.

Suggestion

As community service activities progress, it is advised that stunting prevention efforts be conducted regularly and sustained over time to meet long-term objectives.

Compliance with ethical standards

Acknowledgments

The authors would like to express their gratitude to all the supervisors for facilitating the successful implementation of this community service project. We also thank Universitas Airlangga for funding this community service through the 2024 UNAIR Community Partnership Program, by Lembaga Penelitian dan Pengabdian Masyarakat (LPPM) Universitas Airlangga. Special thanks to Dr. Emyr Reisha Isaura, MPH, PhD, for her valuable input during the implementation of this project.

Disclosure of conflict of interest

The authors declare no conflict of interest.

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