



GEMILANG (BALANCED NUTRITION FOR A BRILLIANT GENERATION): EDUCATION AND EMPOWERMENT OF PREGNANT WOMEN AND TODDLERS IN STUNTING PREVENTION BASED ON LOCAL FOOD

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ABSTRACT

Stunting, or the condition of growth failure in children under five, is caused by chronic malnutrition that occurs from pregnancy until the child is two years old. Children experiencing stunting have a height below the standard for their age and are at risk of cognitive, motor, and immune system impairments. The community service program GEMILANG (Balanced Nutrition for a Brilliant Generation) was carried out in Kesamben Wetan Village, Driyorejo District, Gresik Regency, activity was conducted from Agustus 2025 with the aim of improving the knowledge, skills, and nutritional awareness of pregnant women, mothers of toddlers, and *posyandu* (integrated health post) cadres in stunting prevention based on local food. Activities included education on balanced nutrition, introduction to the potential of local food sources, training on nutritious food processing such as moringa leaf pudding, and strengthening the capacity of *posyandu* cadres in monitoring the nutritional status of toddlers. The implementation method used a participatory approach through interactive lectures, group discussions, demonstrations, and hands-on practice. Evaluation was conducted using pre-tests and post-tests as well as participant practice observations. The results showed an average knowledge increase of 33–35%, 90% of participants were able to practice the recipes at home, and 38% began utilizing their yards to grow vegetables or moringa leaves. In addition, there was a 20% increase in toddler attendance at *posyandu* after the program's implementation. In conclusion, an educational approach combined with local food processing practices proved effective in improving nutrition literacy and encouraging changes in family consumption behavior. This program has the potential to become a model for community empowerment based on local potential to support sustainable stunting reduction efforts.

Keywords: Balanced Nutrition, Community Empowerment, Local Food, Moringa Leaves, Stunting

INTRODUCTION

Stunting is a chronic public health problem that remains a major challenge in Indonesia, including in the Gresik Regency area. Stunting, or growth failure in children under five, is caused by chronic malnutrition that occurs from pregnancy until the child is two years old. Children who experience stunting have a height below the standard for their age and are at risk of cognitive, motor, and immune system impairments. The impact extends beyond individuals, affecting the nation's social and economic development. Stunting is a condition of growth failure in children under five caused by prolonged nutritional deficiencies, especially during the first 1,000 days of life—from pregnancy to two years of age. Stunted children tend to have shorter stature compared to their peers and are at higher risk of cognitive and motor developmental disorders, as well as non-communicable diseases in adulthood (Perwitasari, Nurita, and Armina 2023).

The target area of the GEMILANG Program is a region with a relatively high stunting prevalence compared to the national average. Based on data from the local Health Office, the prevalence of stunting among toddlers remains around 40% (latest data may vary), with chronic nutritional problems such as energy and protein deficiency. This situation is worsened by limited access to primary healthcare services, low family nutrition knowledge, and eating patterns that do not meet the principles of balanced nutrition.

Most residents in the target area work as farmers, laborers, or small traders with low household incomes. This economic

condition affects the family's ability to meet the nutritional needs of pregnant women and toddlers, resulting in a higher risk of malnutrition, anemia in pregnant women, and delayed growth and development among children.

According to data from (Rahma and Nuradhiani 2019), the national stunting prevalence rate is 21.6%, while in Gresik Regency it remains above the East Java provincial average. One of the areas that has shown concern regarding this issue is Kesamben Wetan Village, located in Driyorejo District, which has several pregnant women and toddlers with poor nutritional status. The village continues to face challenges in maternal and child health. Based on initial observations and information from local health workers, there are still pregnant women and toddlers with suboptimal nutritional conditions. These problems are generally caused by a lack of education about the importance of balanced nutrition, inappropriate eating patterns, and the underutilization of local food resources available in the surrounding environment. The lack of education on healthy eating habits, limited understanding of maternal nutrition, and the suboptimal use of local food sources are the main factors worsening the situation (Rido et al. 2023).

Meanwhile, the use of local foods such as sweet potatoes, tempeh, moringa leaves, mung beans, and other vegetables can be a potential solution to improve the nutritional intake of pregnant women and toddlers. When utilized properly, these local food ingredients can serve as

affordable, nutritious supplementary foods (PMT) that meet the nutritional needs of pregnant women and toddlers. However, many community members still lack understanding of proper processing and utilization methods to support child growth and maternal health. According to (Asmawati et al. 2022), the use of local food not only strengthens household food security but also provides nutritional sources that align with local wisdom and are easily accessible.

The importance of education about stunting and the provision of supplementary food based on local ingredients is also emphasized in the National Strategy for Accelerating Stunting Reduction (Stranas Stunting), which mandates specific and sensitive nutritional interventions from pregnancy to the toddler stage (Daulay et al., 2023). Proper education for pregnant women and toddlers, supported by nutritional interventions using local food ingredients, is an effective and sustainable approach to reducing stunting rates at the village level (Santika et al. 2025).

Therefore, this community service activity aims to provide education and training to pregnant women and mothers of toddlers in Kesamben Wetan Village on the importance of nutrition in preventing stunting, while also assisting them in preparing supplementary foods based on local food ingredients. This activity is expected to increase community awareness and capacity to prevent stunting independently and sustainably.

Through an educational and participatory approach, Kesamben Wetan Village is expected to become a foster village that is responsive and self-reliant in fulfilling nutritional needs based on local potential, and to serve as a model of

sustainable community empowerment supporting the creation of a healthy and productive generation.

OBJECTIVES

General Objective

To improve the knowledge, attitudes, and practices of pregnant women, mothers of toddlers, and posyandu cadres in stunting prevention through education and empowerment based on the utilization of local food resources.

Specific Objectives

1. To increase the understanding of pregnant women and mothers of toddlers about the importance of balanced nutrition in preventing stunting.
2. To introduce and promote the potential of local food sources as affordable and nutritious alternatives for daily consumption.
3. To train participants in the processing of local food ingredients into nutritious supplementary foods (PMT), such as moringa leaf pudding and vegetable-based dishes.
4. To strengthen the capacity of posyandu cadres in monitoring the nutritional status and growth of toddlers.
5. To encourage behavioral change toward healthier eating habits and the independent use of local food resources to support family nutrition sustainability.

PLAN OF ACTION

The GEMILANG community service program, implemented in Kesamben Wetan Village, Driyorejo District, Gresik Regency, will be carried out through three main stages: Activity Preparation, Program Implementation, and Assistance &

Evaluation. The primary targets of this program are pregnant women and toddlers. Each stage is systematically designed to address the partner community's priority problems.

a) Strategy Plan

The GEMILANG program adopts a community-based nutrition education approach that emphasizes the use of affordable and culturally familiar local foods. The strategy focuses on three pillars:

1. **Strengthening knowledge** of pregnant women and caregivers through targeted education on balanced nutrition and early stunting prevention.
2. **Enhancing practical skills** in preparing nutrient-dense local food products, such as Moringa Leaf Pudding (Pulor), to increase daily micronutrient intake.
3. **Empowering community support systems** by involving health cadres, local midwives, and village stakeholders to ensure long-term program sustainability.

b) Implementation

Program activities were conducted through a series of structured sessions, including:

- Distribution of Moringa seedlings to encourage household-level food sources.
- Educational workshops focusing on stunting risk factors, balanced nutrition, and maternal-child dietary needs.
- Demonstrations and hands-on training in processing local food ingredients—particularly moringa leaves—into practical and acceptable complementary foods.

- Monitoring and follow-up discussions with participants to reinforce behavioral changes and evaluate knowledge improvement.

c) Setting

The GEMILANG program was implemented in a community-based environment involving Posyandu, village meeting halls, and household demonstration sites. These locations were selected to maximize accessibility for pregnant women and caregivers while fostering active community participation. Collaboration with local health workers provided contextual relevance and ensured alignment with existing maternal and child health services.

d) Target

The primary targets of the program were:

- **Pregnant women**, particularly those in the second and third trimesters, who require enhanced nutritional intake to support fetal growth;
- **Mothers or caregivers of toddlers**, to improve feeding practices and daily nutritional adequacy;
- **Community health cadres** as supporting agents for continual monitoring and dissemination of nutrition messages;
- **Village stakeholders**, whose involvement strengthens program adoption and continuity.

This method is designed not only to provide knowledge but also to build community self-reliance in sustainably preventing stunting through empowerment and optimal utilization of local food potential.

RESULTS AND DISCUSSION

The results of the community service program on Education and Empowerment of Pregnant Women and Toddlers in

Stunting Prevention Based on Local Food are presented in Table 1 and Figure 1.

Table 1. Results of Program Achievement Indicators for Education and Stunting Prevention Based on Local Food

No.	Activity Components	Achievement Indicators	Target	Achievement Results	Achievement Percentage
1	Balanced Nutrition Education for Pregnant Women and Toddlers	Increase in participants' knowledge scores from pre-test to post-test	$\geq 25\%$ increase	Average increase of 35%	140% of target
2	Introduction to Nutritious Local Foods	Participants are able to mention at least 5 types of nutritious local foods	$\geq 80\%$ participants	92% of participants were able to mention them	115% of target
3	Training on Local Food Processing (Moringa Pudding)	Participants are able to practice the recipe at home	$\geq 80\%$ participants	90% 90% of participants practiced it	112% of target
4	Capacity Building for <i>Posyandu</i> Cadres	Cadres are able to use KMS and the e-PPGBM application (100% of cadres)	100% cadres	100% cadres trained and capable	100%
5	Posyandu Participation	Increase in the number of toddlers attending <i>posyandu</i> sessions	$\geq 10\%$ increase	Approximately 20% increase	200% of target
6	Change in Consumption Behavior	Families increase the frequency of animal protein consumption	$\geq 50\%$ of participant families	Approximately 70% of families showed an increase	140% of target

7	Utilization of Home Gardens	Participants begin planting vegetables or moringa leaves in their yards	$\geq 30\%$ of participants	40% of participants started planting	133% of target
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(a)



(b)



(c)

Figure 1. a. Distribution of moringa seedlings, b. Stunting education and demonstration of moringa leaf pudding preparation, c. Moringa Leaf Pudding (Pulor) as a Local Food–Based Stunting Prevention Product.

The GEMILANG Program (Balanced Nutrition for a Brilliant Generation) implemented in Kesamben Wetan Village, Driyorejo District, Gresik Regency, was designed as an effort to educate and empower pregnant women, mothers of toddlers, and *posyandu* cadres in preventing stunting through the utilization of local

food potential. This program combined educational, practical, and participatory approaches, effectively encouraging positive behavioral changes among participants.

1. Improvement of Nutritional Knowledge

Balanced nutrition education delivered through interactive lectures, discussions, and simulations successfully improved participants' understanding. The pre-test and post-test results showed an average score increase of **35%**, exceeding the target ($\geq 25\%$). This demonstrates that delivering relevant, contextual materials using simple language can significantly improve community nutrition literacy (Yunianto et al. 2023).

2. Introduction and Utilization of Local Food

A local food–based approach became the key to this program. Participants were able to identify at least five types of nutritious local foods available in their surroundings, such as tempeh, marine fish, moringa leaves, mung beans, and pumpkin. This success is supported by the fact that local foods are more accessible, affordable, and nutritionally adequate to support child growth (Mardiyani et al. 2024).

3. Improving Skills Through Moringa Leaf Processing Training

Training in local food processing—such as making moringa porridge, vegetable tempeh nuggets, and fish floss—enhanced

participants' skills in preparing nutritious menus. About 90% of participants were able to reapply the recipes at home, showing that skill-based empowerment can directly influence family consumption patterns. One of the program's highlights was educating participants on how to make moringa leaf pudding, which can serve as a nutritious food to help prevent stunting (Suci Apsari Pebrianti et al. 2023).

Every mother wants to provide the best nutrition for her child; however, many still underutilize local plants such as moringa. Concerns about meeting children's nutritional needs often lead mothers to adopt less healthy feeding practices, such as giving unhealthy snacks, formula milk, or complementary foods (MP-ASI) before the baby reaches six months of age (Perwitasari et al. 2023)

A mother's attention and support in food preparation, feeding, and storage are crucial to supporting her child's growth. The role of the family—especially the mother—is a determining factor in child development. Meanwhile, the father's support in providing supplementary feeding (PMT), making child health decisions, and assisting in daily routines can increase the child's nutritional intake, particularly for those suffering from undernutrition. Factors influencing nutritional intake include the type of complementary food, frequency of feeding, the child's appetite, the timing of MP-ASI introduction, and overall feeding practices.

4. Strengthening the Role of *Posyandu* Cadres

Posyandu cadres, as the frontline workers in stunting prevention, received training on how to use the Child Growth Monitoring Card (KMS). All participating cadres (100%) successfully applied their new knowledge and demonstrated

increased confidence in conducting health education sessions. This impact was evident from the 20% increase in toddler attendance at *posyandu* compared to the previous month (Permatasari et al. 2021)

5. Behavioral Changes in Food Consumption

Initial evaluation results showed an increase in animal protein consumption among 70% of participant families. Additionally, 40% of participants began utilizing their home gardens to grow nutritious vegetables such as spinach, water spinach, and moringa leaves. These changes indicate that education and practical mentoring can motivate families to become more independent in meeting their nutritional needs (Asmawati et al. 2022).

6. Supporting Factors and Challenges

The program's success was supported by participants' enthusiasm, cooperation from village officials, and the availability of local food resources. However, several challenges remained, including the limited economic capacity of some families and a strong preference for instant food consumption. Therefore, a follow-up strategy involving long-term mentoring and the development of home-based food enterprises is needed to ensure sustainability (Daulay et al. 2023).

7. Implications for Stunting Prevention

Overall, the GEMILANG program demonstrated that interventions combining education, skill-based training, and local food utilization can serve as an effective strategy for stunting prevention at the village level. Although changes in children's nutritional status require time and continuous monitoring, these initial achievements form a solid foundation for the program's sustainability (Sandi and Rahmadhita 2020).

CONCLUSION

The GEMILANG program demonstrates that education, empowerment, and the utilization of local food resources significantly improve the nutritional awareness and practices of pregnant women and caregivers of toddlers. These outcomes support early stunting prevention efforts through practical, culturally appropriate interventions. To ensure long-term sustainability, the program is recommended to integrate continuous community mentoring, strengthen collaboration with local health cadres, and promote ongoing utilization of affordable, nutrient-dense local foods. These measures will help maintain behavioral changes and reinforce the community's capacity to support optimal maternal and child nutrition in the future.

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