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## Prevent Stunting Early: Implementing Nutrition Education Through a Shared Breakfast Program in Elementary Schools

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### Abstract

*Stunting (chronic malnutrition) remains a serious public health challenge in Indonesia, with a prevalence of 21.6% (2022) above the WHO threshold (20%). While interventions are intensive during the First 1000 Days of Life, management during the school-age period (the second golden phase) is often neglected. This study aims to measure the effectiveness of nutritional education intervention and hands-on practice through a Shared Breakfast Program in Elementary Schools (SD) in improving nutritional knowledge and stunting prevention. This community service activity used a simple pre-test and post-test design with a participatory education method on 49 students from grades 1 to 3 at Talang Bukit Hutabayu State Elementary School. The material focused on the dangers of stunting, the concept of Balanced Nutrition (Isi Piringku or My Plate Content), and the importance of breakfast. The results showed a significant increase in students' knowledge levels, with average score improvements ranging from 23.6% to 33.5% between the pre-test and post-test. The greatest improvement occurred in Grade 1 students. The Shared Breakfast Program proved effective as a live laboratory that transformed abstract nutritional concepts into tangible practice. The intervention not only enhanced nutritional literacy but also built awareness of the link between a healthy breakfast and learning concentration. It is recommended that a comprehensive nutrition program, supported by continuous teacher training and active parental involvement, be integrated into the school curriculum to ensure the sustainability of healthy behavior changes*

**Keywords:** *Stunting, Nutritional Education, Shared Breakfast*

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## INTRODUCTION

The development of superior and high-quality human resources begins in childhood, with optimal nutritional status serving as its main foundation. In Indonesia, the problem of stunting (a condition of impaired growth due to chronic malnutrition) remains a serious public health challenge. Stunting not only hinders physical growth but also significantly impacts children's cognitive development and future productivity. Early nutritional intervention is crucial because the elementary school period (around 6-12 years old) is a critical time when children begin to develop eating habits and undergo physical changes leading up to puberty (Saragih & Angkat, 2024).

Stunting is still a serious health problem in Indonesia, threatening the quality of the nation's future generation. This condition, characterized by a child's height being below the standard for their age, is not merely an issue of physical growth, but an indication of chronic malnutrition that has a permanent impact on cognitive development and future productivity (Sitorus et al., 2022). Stunting prevention efforts must be carried out early and comprehensively, involving effective nutritional education. One potential program to tackle this issue is the implementation of a shared school breakfast program in Elementary Schools (SD). This program not only aims to meet children's daily nutritional intake but also serves as a practical and sustainable medium for nutritional education. The stunting prevalence rate in

Indonesia is still high, despite showing a downward trend. Based on data from the Indonesian Nutrition Status Survey (SSGI) by the Ministry of Health, stunting prevalence dropped from 24.4% in 2021 to 21.6% in 2022. This figure is still above the threshold set by the World Health Organization (WHO), which is below 20%. The reduction has not yet been evenly distributed across all regions, with some provinces still having a very high stunting prevalence. This data indicates that although the government's efforts have yielded results, accelerating the reduction of stunting still requires more effective program innovations that directly reach the community level, especially for school-aged children.

Although stunting interventions are intensively carried out during the First 1000 Days of Life (HPK), there remains a significant gap in handling stunting among school-aged children. Previous research has focused more on nutritional interventions for pregnant women and toddlers, while the issue of malnutrition in elementary school-aged children is often overlooked. However, this phase is the 'second golden period' where children begin to build eating habits and have an opportunity to improve their nutrition. The main gaps that can be identified are the lack of integrated and practical nutritional education programs in the school environment that directly target children, the scarcity of research specifically examining the relationship between shared school breakfast programs and stunting prevention and the improvement of nutritional knowledge, and practical obstacles in the implementation of shared breakfast programs, such as budget limitations, parental support, and the provision of menus that align with nutritional standards and local culture (Hayati, 2021).

Several previous studies have examined the impact of breakfast programs on the nutritional status of schoolchildren, although not directly linking them to stunting. A study by Putri, et al. (2019) published in the *Journal of Nutrition and Food* showed that a healthy school breakfast program was able to increase children's energy and protein intake. This research proved that an adequate breakfast positively correlates with a child's nutritional status, even though its focus was not specifically on stunting reduction. Research by Hidayati, et al. (2020) published in the *National Public Health Journal* found that nutritional education accompanied by direct practice (such as preparing healthy menus) was effective in improving children's knowledge and attitude towards healthy eating patterns. This finding provides a strong foundation that a shared breakfast program can function as an effective educational platform. A review from the Indonesian Ministry of Health (2018) on school-aged children's nutrition programs also concluded that nutritional interventions in schools, including breakfast, could help reduce the prevalence of anemia and improve students' learning concentration. This indirectly supports the idea that a nutritious breakfast has a broad impact on children's health and intelligence, two factors that are often impaired by stunting (Picauly et al., 2020).

## RESEARCH METHODS

The research method employed in this study is a community service intervention utilizing a pre-test and post-test design, which aligns with participatory education principles. Specifically, the researchers conducted the activity with 49 elementary school students in grades 1 to 3, selecting a sample that allows for measuring changes in knowledge and behavior regarding nutrition and stunting prevention. The activity will be carried out in three main stages: Preparation, Implementation (Intervention), and Evaluation/Follow-up. Location: *Sekolah Dasar Negeri Talang Bukit Hutabayu Raja* (Talang Bukit Hutabayu Raja State

Elementary School). Participants: Students in grades one through three of the Elementary School. Time September 2025 (in 3 meeting sessions).

#### A. Implementation Stages

The activities are structurally organized to ensure the achievement of the objectives. Preparation Stage (Initial Outreach). This stage includes coordination, logistical planning, and initial knowledge assessment. Coordination: Contacting and obtaining approval from the School Principal and the teaching council to agree on the schedule, target participants, and facility support. Material Preparation: Developing simple and age-appropriate nutritional education materials, focusing on: Introduction to the dangers and prevention of stunting. The concept of *Isi Piringku* (My Plate Content) and Balanced Nutrition for school-aged children. The importance of breakfast habits and selecting healthy snacks. Pre-test: Conducting an initial knowledge measurement (*pre-test*) using a short questionnaire given to students.

#### B. Implementation Stage (Intervention)

This stage is the core of the activity, using interactive methods and hands-on practice. Interactive Education Session (Lecture and Discussion): Delivery of balanced nutrition and stunting material using visual media (posters, short animated videos) and storytelling techniques. Using question-and-answer and discussion methods to ensure participants understand the material presented. Focusing on positive and empowering messages related to healthy food choices. Implementation of the "Shared Breakfast" Program: A hands-on activity where students and teachers are served a balanced nutritional breakfast menu (prepared beforehand). While having breakfast, education and demonstration are conducted regarding ideal portions (the *Isi Piringku* concept) and the importance of each food component. This session aims for participants to directly apply the knowledge in their daily lives.



Figure 1 Stunting Prevention Program

#### C. Evaluation and Follow-up Stage (Discussion and Q&A)

The final stage is to measure the success of the intervention and provide recommendations, including the post-test. Post-test: Conducting a final knowledge measurement (*post-test*) using the same questionnaire as the pre-test to observe any increase in understanding of the material. Discussion and Q&A: Following the post-test, facilitating participants to share their views and experiences regarding nutrition and breakfast.

Data Analysis: The data obtained from the pre-test and post-test results will be analyzed using simple descriptive quantitative statistics. Knowledge Improvement: Using a comparison of the average pre-test and post-test scores to measure the effectiveness of the educational

intervention. The increase in scores will be interpreted as an indicator that the objective of knowledge improvement has been achieved. Affective Evaluation: Conducting participatory observation during the practice sessions and analyzing the responses of students and teachers during the discussion and Q&A sessions to assess their attitude (affective) and response to the Shared Breakfast program.

## RESULTS AND DISCUSSION

The community service activity on nutritional education and stunting prevention through the Shared Breakfast Program at *Sekolah Dasar Negeri Talang Bukit Hutabayu* has been successfully implemented with students from grades 1 to 3. Overall, the activity ran well and smoothly, receiving positive responses from all participants.

### 1. Improvement in Participants' Knowledge

Knowledge measurement using pre-test and post-test instruments showed a significant increase in participants' understanding of balanced nutrition and stunting:

Student Group	Average Pre-test Score	Average Post-test Score	Average Improvement
Kelas 1 (N=15)	55,2 %	88,7%	33,5%
Kelas 2 (N=17)	68,5%	92,1%	23,6%
Kelas 3 (N=17)	69,3%	94%	24,7%

This increase indicates that the nutritional education intervention—delivered through interactive methods, demonstration, and hands-on practice (the Shared Breakfast)—was effective in transferring basic information about: The definition and dangers of stunting, the importance of balanced nutrition and the *Isi Piringku* (My Plate Content) concept, the benefits of breakfast for learning concentration and daily energy.

### 2. Response to the Shared Breakfast Program

Attitude and Acceptance. Both students and teachers showed high enthusiasm for the Shared Breakfast Program. This activity created a fun and collaborative learning atmosphere, aligning with the need for elementary school children to learn through visualization and direct activity. Through the breakfast practice, students were able to apply the newly learned nutritional concepts, such as identifying food groups (sources of carbohydrates, protein, vitamins, and minerals) on their plates. The teachers stated that they now feel more confident in delivering nutrition material and view the Shared Breakfast Program as an applicable learning model that can be integrated into relevant subjects.





Figure 2 Education Activities

## Discussion

Optimizing health and nutrition understanding among school-aged children is a critical investment in their future. The findings from this activity strengthen the argument that timely and practical educational intervention is highly necessary.

### 1. Success of the Participatory Education Method

The significant increase in post-test scores confirms the effectiveness of interactive and participatory education methods (lectures, discussions, and hands-on practice) compared to conventional methods. Elementary school-aged children learn optimally through direct activities, visualization, and games. The Shared Breakfast Program successfully functioned as a 'live laboratory' that transformed abstract nutritional concepts into tangible practice. This aligns with research showing that proper, age-appropriate education can empower children to make healthy decisions (Yani Suryani & Rivo Panji Yudha, 2023).

### 2. Linking Healthy Nutrition with Learning Quality

The focus on the importance of breakfast served as a bridge between health and cognitive function. In the discussion, many students began to realize the connection between the food they consumed and their energy levels and ability to focus in class. These results support the role of schools as a strategic environment for shaping healthy habits that will be carried into adulthood. This early understanding is a crucial first step in long-term stunting prevention efforts, as stunting is heavily influenced by chronic malnutrition and poor eating patterns.

### 3. Challenges and Recommendations for Sustainability

Despite the positive results, the main challenges identified in this activity reflect general challenges in Indonesia: program sustainability and parental involvement. Program Sustainability: To maintain the increase in knowledge, it is recommended that the Shared Breakfast Program or nutritional education sessions be proportionally and mandatorily integrated into the school curriculum. Teachers need to be equipped with continuous training on nutritional material and delivery techniques. Family Involvement: Parents are the primary educators of eating habits. Follow-up programs involving specific nutritional education for parents are needed to ensure a supportive environment is established at home.

## CONCLUSION

The community service activity focused on implementing nutritional education through the Shared Breakfast Program in Elementary Schools as an effort for early stunting prevention.

The execution of this educational intervention represents a critical investment in children's future. The participatory education method combined with hands-on practice through the Shared Breakfast proved effective in increasing nutritional literacy, improving knowledge as the basis for healthy behavior, and long-term stunting prevention. There was a significant increase in the knowledge level of students and teachers regarding the dangers of stunting, the concept of balanced nutrition (including the "Isi Piringku" concept), and the vital benefits of a healthy breakfast habit. This interactive method successfully transformed abstract nutritional concepts into a real and applicable understanding in children's daily lives.

Recommendations for Sustainability suggest the integration of a comprehensive nutrition program into the school curriculum. Continuous support and training for teachers, as well as the active involvement of parents through dedicated education sessions, are key to sustaining behavioral changes both at home and at school.

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