

When the Stomach is Full but the Body Lacks Nutritio (Hidden Hunger): The School Nutrition Corner Program in Junior High Schools, Education for a Healthy and Prosperous Life

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ABSTRACT

ABSTRACT The success of a country in achieving the Sustainable Development Goals depends on the quality of its human resources, which is reflected in physical resilience and mental strength [1]. Achieving zero malnutrition and hunger by 2030 is one of the key goals among the seventeen pillars of sustainable development. Although society has advanced and awareness about the role of food in children's growth and development is increasing, many teenagers continue to suffer from malnutrition even though they do not feel hungry.[2] Hidden hunger is defined as a condition in which the body lacks certain essential micronutrients (particularly iron, zinc, iodine, and vitamin A), even in the absence of an energy intake deficit. This can occur when food portions are large but nutritionally poor. Long-term nutrient deficiencies make adolescents vulnerable to learning difficulties and weakened immune systems, increasing the risk of chronic illness at an early age. Malnutrition is often indicated by physical conditions such as wasting (being too thin) or underweight (having low body weight). According to the 2020 Global Hunger Index, the rate of malnutrition in Indonesia ranges from 20% to 40%. According to the World Health Organization (2020), an estimated 45.4 million children worldwide are affected by wasting [3]. According to the Ministry of Health (2019), the prevalence of hidden hunger among adolescents in Indonesia is 32%, ranking second after pregnant women, who have a prevalence rate of 48.9% [4]. Data from UNICEF and the Ministry of Health show that more than 30% of adolescents suffer from iron deficiency and anemia.[5]

A primary factor contributing to this problem is the insufficient provision of nutrition education at home and in educational institutions. Many parents and children are still unaware of the importance of balanced nutrition in every meal portion. A sustainable and easy-to-understand nutrition education program is urgently needed, especially in schools, which serve as the second environment after the home in shaping children's eating habits. The Nutrition Corner program implemented at SMP Negeri 3 Sugio serves as a platform for students to exchange information regarding their health conditions. Therefore, the solution to this problem is not merely to ensure that children eat enough, but also to pay close attention to what they eat. The national goals of Indonesia, as outlined in the 2030 SDGs, can be achieved by applying the principles of Zero Hunger and Good Health and Well-Being—ensuring an end to Eliminating hunger, encouraging healthy lifestyles, and supporting the overall well-being of every individual in the community [6].

Keywords: Hidden Hunger, Nutrition Corner Program, Junior High School

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59 Introduction

Hidden Hunger

Hidden hunger is a condition of deficiency in essential micronutrients such as vitamin A, iron, iodine, and zinc. UNICEF (2022) defines hidden hunger as a form of malnutrition that occurs when the quality of food does not meet nutritional requirements [5]. According to the World Health Organization (2020), hidden hunger can occur simultaneously with overnutrition or obesity. [7]. This means that someone who appears overweight can also suffer from micronutrient deficiencies due to consuming large amounts of food that are low in nutrition. Hidden hunger often occurs in adolescents due to inadequate food consumption and food insecurity. [8]

Nutrition Education

Nutrition education is designed to lower the likelihood of malnutrition, encourage the intake of nutritious foods, and reinforce the commitment to making positive changes toward a healthy lifestyle [9]. Nutrition education can be implemented through various approaches, one of which is the Empowerment Theory method. Empowerment Theory, in the context of nutrition education, is an approach that emphasizes giving control and opportunities to individuals to make decisions about choosing healthy foods and creating a supportive eating environment. The application of Empowerment Theory strongly supports programs like the 'Nutrition Corner' in schools. This is evident when students are not only recipients of information but also involved as agents of change—such as becoming nutrition cadres, participating in healthy food demonstrations, and voluntarily engaging in consultations.[10]

60 Literature Review

1. Research Subjects

This study involved all students from SMP Negeri 3 Sugio, selected through purposive sampling. The criteria used were students showing signs of hidden hunger, both based on visual observation and anthropometric examination. The total sample for this study consisted of 50 students.

2. Data Collection Procedure

The data used consists of both primary and secondary data. Secondary data were obtained from literature studies, including books and previous research journals. Meanwhile, primary data were collected using the Community-Based Research (CBR) method, which is an approach that involves active collaboration between researchers and research subjects, aiming to generate relevant, participatory knowledge that is directly beneficial to the community. [11]. A questionnaire was also utilized in this study to evaluate students' comprehension following nutrition education and consultations, monitored over a three-month period. The questionnaire consists of the following sections: (1) testing students' knowledge about general nutrition and hidden hunger, (2) assessing knowledge about nutrients and foods that should be consumed, (3) testing knowledge about the signs and symptoms of nutrient deficiencies, including vitamins, iron, calcium, zinc, and others. The questionnaire will be scored using the following categories: (a) Excellent (100-70), (b) Good (69-40), (c) Poor (below 40).

3. Data Analysis Procedure

The data obtained were analyzed by calculating the difference in the average percentage scores before and after the nutrition education on optimal nutrition for adolescents. The effectiveness of the Nutrition Corner program was analyzed using the Mann-Whitney U test with SPSS Statistics 25 software.

4. Procedures for Implementing the Nutrition Corner

- Displaying infographics related to nutritious foods that can be applied in daily life
- Anthropometric measurements
- Collaboration with nutrition consultants to provide consultation sessions for students categorized as experiencing hidden hunger
- Thematic activities such as healthy food demonstrations and other related events
- Periodic evaluation.

61 Research Methods

The Nutrition Corner program implemented at SMP Negeri 3 Sugio during the first quarterly period showed the following results:

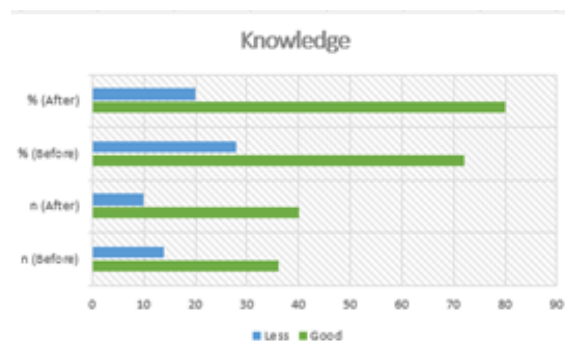


Figure 3: Difference in Knowledge Before and After Nutrition Education



Figure 4: Difference in Hidden Hunger Condition Before and After

Although still in its pilot phase, the nutrition program implemented at SMP Negeri 3 Sugio—specifically the Nutrition Corner—has been effective in increasing students’ knowledge about nutritious foods. Based on observations and questionnaire assessments, 72% of students did not understand the concept of balanced nutrition prior to the intervention. Anthropometric measurements also showed that 76% of students exhibited signs of hidden hunger. After re-

ceiving the Nutrition Corner education intervention, the results indicated that 80% of students demonstrated an understanding of balanced nutrition, as reflected in questionnaire responses categorized as good and excellent. Additionally, anthropometric measurements showed a decrease in hidden hunger cases to 60%, with some students exhibiting weight gain and more stable physical conditions.

Test Statistics^a

	skor
Mann-Whitney U	16.500
Wilcoxon W	1291.500
Z	-8.540
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: jenis

Figure 5: Results of the Mann-Whitney U Test

The analysis using the Mann-Whitney U test showed a significant difference between the pre-intervention and post-intervention phases of the Nutrition Corner implementation at SMP Negeri 3 Sugio. The significance value of $0.00 < 0.05$ indicates that the difference is statistically significant. This suggests that students' knowledge of balanced nutrition was considerably higher after receiving the education. Therefore, it can be concluded that the intervention had an impact on reducing the level of hidden hunger among the study participants.

The Nutrition Corner program contributes to the efforts toward achieving the second point of the Sustainable Development Goals (SDGs), which is to eliminate all forms of malnutrition by 2030. The program has also been implemented at SMA Yadika 12 Depok and MTsN 5 Bantul, where it received highly positive responses from students due to its fun and practical educational approach [12]. This study is also supported by the findings of Ibeanu et al. (2020) in Nigeria, which showed that community-based educational interventions can significantly improve adolescent nutrition literacy [13]. However, this program also faces challenges, including limited resources, minimal parental involvement, and reliance on external support such as nutrition experts from local health centers (puskesmas). To ensure the sustainability of the program, it is necessary to integrate the Nutrition Corner into the structure of the school health program (UKS) and the school curriculum, as well as to provide regular training for teachers to act as nutrition facilitators.

62 Result and Discussion

The Nutrition Corner program implemented at SMP Negeri 3 Sugio has proven effective in increasing students' nutrition knowledge and reducing the prevalence of hidden hunger among adolescents. Before the intervention, the majority of students had limited understanding of the importance of balanced nutrition and showed signs of micronutrient deficiencies. After the program had been running for 3 months, there was a significant improvement in nutrition knowledge (80%) and a reduction in the prevalence of hidden hunger from 76% to 60%. Statistical analysis also indicated that the difference before and after the intervention was significant. This program serves as one of the strategies supporting the achievement of the Sustainable

Development Goals (SDGs), particularly Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-Being).

63 Conclusion

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