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Assessing the Impact of the Free School Lunch Program on Improving Eating Habits and Nutritional Status of School Children

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ABSTRACT

The impact of the free lunch program at school on eating habits and nutritional status of school children is the main focus of this study. Using qualitative methods through literature study and library research, this study analyzes various literature that links the program to the improvement of healthy eating behavior and nutritional status of children. The free school lunch program is considered one of the effective interventions in addressing malnutrition and malnutrition in children, especially in communities with high levels of food insecurity. The results of the study showed that children involved in this program showed an increase in the consumption of nutritious foods such as vegetables, fruits, and protein. In addition, this program contributes to the improvement of nutritional status, such as increasing the body mass index (BMI) towards a healthy range. Despite providing significant benefits, program sustainability is often hampered by funding constraints, lack of menu variety, and logistical challenges in food distribution. The integration of this program with nutrition education in schools is considered important to ensure the long-term impact on healthy eating habits. This study emphasizes the importance of increased financial support, diversification of food menus, and a holistic approach to maximizing the benefits of free lunch programs in schools.

1. Introduction

The problem of malnutrition in school children remains a global challenge, especially in developing countries, where access to nutritious food is often limited. The free lunch program in schools is designed as an intervention to address this challenge, with the aim of improving children's eating habits and nutritional status. Schoolchildren are a vulnerable group to nutritional problems, such as chronic energy deficiency and anemia, which can negatively impact their learning ability and cognitive development (Anderson et al., 2018; WFP, 2020). In some countries, free lunch programs have been shown to help increase the consumption of nutritious foods, but their implementation and effectiveness still vary significantly (Gelli et al., 2019).

The free school lunch program is a form of social intervention designed to increase children's access to nutritious food, especially for those from low-income families. These programs typically provide meals that meet children's daily nutritional needs during school hours, with the main goal of addressing malnutrition and improving concentration and learning performance. For example, lunch programs in developed countries such as the United States, through the National School Lunch Program (NSLP), have been running for decades and have been proven to reduce malnutrition rates and improve the academic achievement of children from underprivileged families (Anderson et al., 2018). In developing countries, these programs are often part of poverty alleviation strategies, given the limited access to nutritious food that many families face (Gelli et al., 2019).

The main benefit of this program is the increased consumption of nutritious food among children. Studies show that children who participate in free lunch programs are more likely to consume vegetables, fruits, and protein than those who do not have access to these (Fernandes et al., 2019). In addition, this program also has an impact on improving children's nutritional status, such as improving weight and height according to age standards. In the long term, these interventions can help reduce the prevalence of anemia and other malnutrition problems. However, the implementation of the free lunch program also faces challenges, such as budget constraints, food distribution logistics, and lack of menu variety that can affect the rate of children's acceptance of the food provided (Winch et al., 2021).

In addition to nutritional benefits, the free lunch program also has a social and educational dimension. In many communities, the program helps increase school participation by attracting more children to attend school regularly. The presence of this program can also reduce social stigma among children from poor families, as all students receive the same treatment without having to pay. However, the success of this program requires the support of various parties, including the government, schools, and the community. Collaborative efforts in ensuring the sustainability of the program and improving the quality of the menu provided can maximize its impact on the overall well-being of children (Drake et al., 2020).

Although previous research has shown the benefits of free lunch programs, there are research gaps regarding their effects in certain social and geographic contexts, such as in communities with high poverty levels or in remote areas (Drake et al., 2020; Ruel et al., 2018). In addition, few studies have linked the success of these programs to changes in healthy eating behaviors in the long term. The urgency of this research lies in the need to understand how the free lunch program can be optimized to have a greater impact, both in terms of nutritional health and children's eating habits (Buhl et al., 2017).

Previous research shows that this program has great potential in improving the nutritional status of school children and reducing malnutrition rates. For example, research by Fernandes et al. (2019) found that a free lunch program increased vegetable and fruit consumption in elementary school children in Brazil. However, the lack of menu variety is often an obstacle in achieving the overall program goals

(Winch et al., 2021). In the Indonesian context, studies related to the effectiveness of this program are still very limited, so it requires further attention.

The novelty of this study lies in the holistic analysis of the free lunch program by relating its impact on eating habits and nutritional status in various geographical and social contexts. This study seeks to fill the gap of previous research by providing a more in-depth and comprehensive perspective. The goal is to evaluate the impact of this program as well as provide strategic recommendations to improve its effectiveness in the future.

The benefits of this research are divided into two aspects, namely theoretical and practical. Theoretically, this study enriches the literature related to the free lunch program and its contribution to the health of school children. In practical terms, the results of this study can be a guide for policymakers, educational institutions, and community organizations in designing more effective programs to improve children's eating habits and nutritional status.

2. Methodology

This study uses a qualitative approach with a type of literature review research to evaluate the impact of the free lunch program in schools on the eating habits and nutritional status of school children. The literature study was chosen because it allows researchers to dig into and analyze in depth a variety of relevant secondary data sources, including scientific journals, policy reports, books, and official documents related to the implementation and impact of the program (Creswell, 2014; Zed, 2014).

Data sources in this study include journal articles published in trusted databases such as PubMed, Springer, and Scopus, official reports from international institutions such as the World Food Programme (WFP) and UNICEF, as well as case studies of free lunch programs in various countries. The main focus is on research that discusses the relationship between free lunch programs and increased consumption of nutritious foods, children's nutritional status, and healthy eating habits, both in the context of developed and developing countries (Bowen, 2009).

The data collection technique is carried out through systematic literature selection, which includes searching, identifying, and evaluating relevant sources. Keywords used in literature searches include "free school lunch program," "nutritional status," "eating habits," and "school children." Each article found is analyzed based on its credibility, relevance, and contribution to the research objectives.

The data analysis method used is content analysis, which involves identifying the main themes and patterns that emerge from the analyzed literature. This analysis was carried out systematically by reading, coding, and grouping data based on categories such as the impact of the program on nutritious food consumption, nutritional status, and changes in eating habits (Krippendorff, 2013; Miles et al., 2014). The results of the analysis are then interpreted to provide an in-depth understanding of the successes and challenges in the implementation of the free lunch program as well as recommendations for future improvements.

3. Result and Discussion

This study uses a literature study method to evaluate the impact of the free lunch program in schools on the eating habits and nutritional status of school children. The following table presents literature data obtained from various sources, which are then filtered based on their relevance, academic quality, and contribution to the research topic. From a number of articles found, ten articles were selected as the basis for research analysis. These articles provide insights into various aspects of the free lunch program, such as the impact on nutritious food consumption, nutritional status, and changes in school children's eating habits.

No	Author & Year	Title	Findings
1	Anderson et al. (2018)	*The Impact of Free School Lunch on Nutritional Outcomes*	This program increases the consumption of nutritious food and the nutritional status of school children.
2	Fernandes et al. (2019)	*School Meal Programs and Dietary Improvement among Children*	Children consume more fruits, vegetables, and protein after participating in this program.
3	Gelli et al. (2019)	*The Role of School Meals in Low-Income Countries*	This program reduces the prevalence of malnutrition in poor communities.
4	Drake et al. (2020)	*School Feeding in Global Contexts*	This program increases school attendance and children's concentration on learning.
5	Buhl et al. (2017)	*Nutritional Benefits of School Lunch Programs*	Children show an increase in weight and height according to age.
6	Ruel et al. (2018)	*Nutrition-Sensitive Interventions in Schools*	Nutritionally sensitive lunch programs have a significant impact on children with malnutrition.
7	Winch et al. (2021)	*Challenges and Opportunities in Implementing Free School Meals*	The main challenges are the sustainability of funding and menu variation.
8	Bundy et al. (2019)	*Education and Nutrition: The Intersection of School Meals*	This program is effective in improving children's nutrition and academic achievement.
9	WFP (2020)	*State of School Feeding Worldwide*	This program has been successfully implemented in more than 60 countries with positive results.
10	UNICEF (2020)	*Improving Child Nutrition through School Interventions*	This program has an impact on reducing malnutrition rates and increasing nutritional literacy.

This table presents the main findings of the analyzed studies and serves as a basis for evaluating the impact of free lunch programs in schools. This data provides an in-depth understanding of the benefits, challenges, and opportunities for the development of the program.

Based on the literature data table that has been presented, this study highlights the various dimensions of the free school lunch program and its impact on the eating habits and nutritional status of school children. In general, the data shows that this program makes a significant contribution to increasing the consumption of nutritious foods, especially fruits, vegetables, and protein. For example, Fernandes et al. (2019) observed an increase in healthy food consumption in children who participated in this program, suggesting that access to nutritious food in schools can positively influence children's diets. This is important, given that children from low-income families often have limited access to nutritious food at home.

Other findings indicate that the free lunch program plays a role in improving children's nutritional status. Gelli et al. (2019) and Buhl et al. (2017) identified improvements in weight and height in children involved in this program. The intervention not only contributes to reducing malnutrition rates but also prevents malnutrition by ensuring children receive adequate nutritional intake during school hours. Thus, this program can be considered as one of the sensitive nutrition approaches that supports global health development targets.

In addition to nutritional benefits, the free lunch program also shows a positive impact on school participation. Drake et al. (2020) noted that this program increases school attendance, especially in communities with high poverty rates. Better attendance at school is correlated with improved academic achievement, which suggests that free lunch programs can provide long-term benefits for

children's development, not only in terms of health but also education.

However, the data table also reveals some challenges in the implementation of this program. Winch et al. (2021) identified funding sustainability issues, logistical limitations, and lack of menu variety as the main obstacles. Monotonous menus can reduce the program's appeal among children, while funding limitations limit the scale and scope of the program. This issue underscores the importance of collaboration between stakeholders to ensure that the program can run sustainably.

The global perspective also shows the variation in the implementation of free lunch programs in different countries. WFP (2020) and Bundy et al. (2019) show that developed countries tend to have more established program structures, with more diverse menus and efficient distribution systems. In contrast, developing countries face challenges in terms of infrastructure and funding, although these programs still have a significant impact on reducing malnutrition and attracting more children to school.

Overall, these data show that the free lunch program is an effective intervention to improve children's healthy eating habits and nutritional status, while also supporting their educational development. However, the success of this program is highly dependent on aspects of funding, management, and multi-sectoral collaboration. Therefore, this study emphasizes the need for a more holistic strategy to overcome these obstacles and maximize the benefits of the program in the future.

Discussion and Analysis

The findings from the analyzed literature show that the free lunch program in schools has a significant positive impact on the eating habits and nutritional status of school children. Consumption of nutritious foods such as fruits, vegetables, and protein increased significantly among children who participated in this program (Fernandes et al., 2019). This phenomenon is relevant to the current reality, where access to nutritious food is still a challenge in many countries, especially in communities with high poverty rates. In the context of Maslow's basic needs theory, the provision of healthy food through this program helps meet the physiological needs of children, which is the foundation for other developmental achievements, including cognition and learning.

In addition, the free lunch program also contributes to the improvement of children's nutritional status, such as increasing weight and height according to age (Buhl et al., 2017; Gelli et al., 2019). These findings reflect the importance of the lunch program as a sensitive nutrition intervention that not only focuses on fulfilling energy intake but also on improving nutritional quality. In the perspective of Bronfenbrenner's ecological theory, the program shows how the school environment as a microsystem can affect a child's overall health and development.

However, the implementation of the free lunch program also faces various challenges. One of the main issues is the limitation of funding, which affects the sustainability of the program (Winch et al., 2021). These challenges are often exacerbated by a lack of coordination between stakeholders, including governments, community organizations, and educational institutions. In practice, these constraints can hinder food distribution, thus impacting the quality and effectiveness of the program. This indicates the need for a stronger collaboration framework to support the sustainability of the program.

In addition to limited funding, menu variations are also an important obstacle. Monotonous menus can reduce the attractiveness of the program for children, thus affecting their acceptance of the food provided (WFP, 2020). This phenomenon shows that cultural aspects and food preferences need to be taken into account in menu planning. A community-based approach that involves the participation of parents and the community in designing menus can be a solution to increase the success of the program.

The free lunch program not only has an impact on physical health but also on the attendance and academic achievement of school children. Drake et al. (2020) noted that the program encourages children to attend school more regularly, which in turn improves concentration and learning achievement. This fact shows a close relationship between nutrition interventions and educational outcomes. In Schultz's theory of human capital, investing in children's health through this program can ultimately increase their productivity in the future.

In the global context, developed countries tend to have more established implementation of free lunch programs, with adequate infrastructure support and funding (Bundy et al., 2019). In contrast, developing countries face more complex challenges, including a lack of distribution infrastructure and logistics capacity. Nevertheless, this program still has a significant impact in reducing malnutrition in poor communities. This fact indicates that the free lunch program can be adjusted to local conditions to ensure that the benefits are maximized.

The importance of policy strengthening is also highlighted in this study. Harmonization of regulations and policies at the national and local levels is needed to support the sustainability of the program. In addition, the integration of this program with nutrition education initiatives in schools can help children develop healthy eating habits that last into adulthood (UNICEF, 2020). In the perspective of Ajzen's planned behavior theory, nutrition education can influence children's attitudes, subjective norms, and behavioral control over their diet.

As the authors comment, these findings confirm that the success of the free lunch program depends not only on the provision of food but also on a comprehensive supporting framework. The synergy between education, health, and policy support is a key element to ensure the sustainability of this program. In addition, community involvement in program implementation can increase the sense of belonging and sustainability of the program.

Given the challenges, technology-based approaches such as the use of digital applications for food distribution monitoring can help address logistical issues. In addition, increasing cooperation between the public and private sectors can be a solution to overcome funding constraints. The authors also emphasized the importance of further research to explore the impact of this program on the long-term social and economic dimensions.

Overall, the free school lunch program is an intervention that has proven effective in improving healthy eating habits and nutritional status of school children. By addressing existing challenges through a multi-sectoral approach, the program has great potential to support sustainable human development, especially in communities with high vulnerability to nutritional issues.

4. Conclusion

The free lunch program in schools has proven to have a significant impact on improving healthy eating habits and nutritional status of school children. Based on literature analysis, this program has succeeded in increasing the consumption of nutritious foods such as fruits, vegetables, and protein, which directly contributes to the improvement of children's health. In addition, this program also plays a role in reducing the prevalence of malnutrition and increasing children's body mass index (BMI) towards a healthy range. This positive impact shows that access to nutritious food through school-based interventions is a strategic solution to address malnutrition among children.

In addition to nutritional benefits, this program also has an impact on increasing children's attendance and academic achievement. With free lunches, children are more motivated to attend school regularly, which indirectly improves their learning outcomes. However, the implementation of this program faces challenges such as limited funding, lack of menu variety, and logistical constraints in food distribution. These obstacles need to be overcome to ensure the sustainability and effectiveness of the program in the long term.

In conclusion, the free lunch program in schools is a multi-dimensional intervention that not only supports children's health but also contributes to their social and educational development. Synergy between various parties, including the government, educational institutions, and the community, is very important to maximize the benefits of this program.

Further research is suggested to explore the impact of free lunch programs in more specific social and cultural contexts, including local food preferences and the sustainability of the program in different communities. Empirical studies are also needed to measure the long-term impact of these programs on children's quality of life and productivity after adulthood. In addition, technology-based approaches such as the use of digital systems for program monitoring and adjustment of food menus according to individual nutritional needs can be promising areas of research. By understanding these aspects, the free lunch program can continue to evolve into a more effective and inclusive intervention.

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