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Implementation of the MBG Program in Synergizing School Health Efforts at SD Mandiri Palembang

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Abstract: This study aims to describe the implementation of the Free Nutritious Meal Program (MBG) and its operational synergy with the School Health Program (UKS) at SD Mandiri Palembang, focusing on planning, execution, supervision, and follow-up, while identifying constraints and solutions. Employing a qualitative approach, data were collected through interviews, observations, and documentation. The results show that structured planning based on nutritional mapping and multi-stakeholder coordination enables effective implementation, featuring regular meal distribution and integrated nutrition education. Continuous supervision, including hygiene monitoring and nutritional status checks, strengthens the MBG-UKS synergy. Follow-up actions adapt menus and improve coordination to address challenges such as varying student appetite. The novelty lies in empirically illustrating how a feeding program can be systematically integrated into a school health framework within a specific Indonesian context. A key practical implication is the provision of a replicable implementation model for other schools seeking to link nutrition and health services. The study contributes a detailed qualitative case study to the field of school health management, demonstrating that structured processes and cross-program collaboration are essential for sustaining integrated student well-being initiatives.

Keywords: Elementary School, Free Nutritious Meal Program, School Health Business

A. Introduction

Education is the main foundation in the development of quality human resources. However, the success of the educational process is not only determined by the aspects of the curriculum, educators, and infrastructure, but also depends on the physical and psychological condition of the students. One of the important factors that is often overlooked is the nutritional adequacy of students. Inadequate nutrition has an impact on decreasing learning concentration, physical endurance, and students' motivation and enthusiasm in participating in learning. Susilowati et. al., (2025) in his research stated that optimal nutritional needs from an early age are the main foundation in determining a person's long-term health, academic achievement, and productivity after adulthood. Countries with high human development indices generally show great concern for meeting the nutritional needs of children, considering that childhood

is a golden period that determines physical, cognitive, social, and emotional growth and development. In various parts of the world, the problem of malnutrition is still a serious challenge, both in the form of *undernutrition* and *overnutrition*, both of which contribute to an increased risk of non-communicable diseases and growth disorders (Arif et. al., 2020).

Thus, the health condition and nutritional adequacy of children play an important role in realizing superior human resources. In many countries, malnutrition and limited access to nutritious food are still serious problems that require special treatment. The availability of adequate nutritional intake is a basic factor in achieving a healthy and prosperous life, especially for vulnerable groups such as children and women. Therefore, improving access and quality of nutrition is a very important step to support optimal growth and development while maintaining the sustainability of public health as a whole. But in fact, in 2024, Indonesia still faces serious challenges in reducing *stunting rates*. According to the 2023 Indonesian Health Survey (SKI), *the national stunting prevalence* is at 21.5%, only down about 0.8% from the previous year. This figure is still far from the national target of 14% set in the 2020-2024 National Medium-Term Development Plan (RPJMN) (Rahmah et. al, 2025). This condition not only endangers children's health, but also affects the quality of human resources in the long term. Children who are stunting have a greater risk of cognitive development barriers, low academic achievement, and limited work productivity in the future (UNICEF, 2023). Therefore, the fulfillment of nutrition from an early age is a key factor in efforts to produce a quality and superior generation of Indonesians.

This is supported by research from Indrayasa & Suryanti (2023) which shows that investment in fulfilling child nutrition from an early age will provide significant results for economic growth and poverty alleviation. In the context of developing countries, the problem of fulfilling child nutrition is more complex because it is influenced by structural factors such as poverty, inequality in access to health services, and low parental education. Public awareness of the importance of nutrition from an early age is often still limited, causing nutritional interventions to be ineffective or unsustainable. This issue requires a more in-depth study contextually and data-based on a national scale. Thus, nutritional fulfillment plays a very important role in supporting children's growth and development. If nutritional needs such as carbohydrates as a source of energy, protein as a building agent, and vitamins and minerals as regulatory substances can be met, then the child's health condition will be maintained. This situation plays a role in preventing various diseases that have the potential to inhibit the growth and development process, which ultimately also affects the level of children's intelligence (Tambunan et. al, 2025).

As a response to this problem, the government then launched the Free Licensed Eating Program (MBG) in Schools as part of nutrition intervention efforts as well as improving the quality of human resources from an early age. This program is designed to ensure that every student gets sufficient, balanced, and safe nutritional

intake while participating in learning activities at the school. In various countries, similar policies have been proven to improve students' nutritional status and academic achievement, such as the implementation of the Mid Day Meal scheme in India and the Programa Nacional de Alimentação Escolar (PNAE) in Brazil (World Food Programme, 2021).

The MBG program is one of the strategic steps taken by the Indonesian government in an effort to improve the quality of children's nutrition while supporting their educational success. This program is designed to reduce stunting rates, improve nutritional status, and support the academic achievement of students at various levels of education. The results of the study show that the implementation of MBG has a positive influence on students' attendance and learning achievement, as well as improving the quality of the nutritional intake they receive (Cohen et. al., 2021). This program has been implemented in various regions in Indonesia with the hope of being able to form a younger generation that is healthier, stronger, and highly competitive. In general, the MBG Program has a huge opportunity as a form of cross-sectoral intervention that not only focuses on addressing public health problems, but also helps to encourage national economic growth. This program is a form of social investment that is able to strengthen food security, drive the local economy, and build a better future for the younger generation. Through optimal management, this program has the potential to become a flagship policy in accelerating the achievement of the Sustainable Development Goals (SDGs), especially in the fields of nutrition, education, and poverty alleviation (Basit & Ramadani, 2025). However, the implementation of this program is not without challenges. In terms of policy, the provision of an adequate and sustainable budget is a crucial issue. From the operational side, distribution mechanisms, food quality supervision, and cross-sector involvement such as the education office, health office, and the school. In addition, the readiness of infrastructure in schools, such as the availability of healthy kitchens, logistics systems, and supporting human resources are also factors that determine the success of this program. Based on this description, it is important to conduct a comprehensive study and evaluation of the implementation of the MBG program in schools, starting from planning, implementation to its impact on student health and achievement and its synergy with School Health Enterprises (UKS) is present as a cross-sector strategic program that aims to improve the health status of students through health education approaches, health services, and fostering a healthy environment in schools (Maulana, et. al., 2025; Jamal, & Adinda, 2026).

The MBG program is directly related to the three main pillars of UKS. First, from the aspect of health education, this program can be accompanied by the introduction of healthy food, the importance of food hygiene, and training in choosing nutritious foods. Second, in terms of health services, activities such as *nutritional status screening*, periodic health checks, and student growth monitoring can be carried out in an integrated manner. Third, in terms of fostering a healthy environment, this program encourages improvements in school kitchen sanitation, cleanliness of dining areas,

and school environmental arrangement to support a healthy lifestyle as a whole. More than that, the existence of the MBG program can strengthen coordination between schools and health centers, health offices, education offices, and the surrounding community. This cross-sectoral synergy is the essence of effective UKS implementation, where the participation of all parties is needed to create a healthy and child-friendly school environment. To achieve the optimization of synergy, a planned and sustainable implementation strategy is needed. Schools must have a strong commitment, trained human resources, and a clear monitoring and evaluation system so that the nutritious feeding program does not only run as a consumption activity, but is truly integrated with children's health and education goals. Thus, the fulfillment of child nutrition through the MBG program in schools can be in line and synergize with health programs, especially in elementary schools. One of the elementary schools that implements this program is SD Mandiri Palembang where this research was carried out. At the beginning of the 2025 school year, local governments began implementing the MBG program in several elementary schools as an effort to improve the nutritional status and health of students. One of the schools that became the observation location was SD Mandiri Palembang.

Based on the results of the researcher's initial observations from June 10 to June 20, 2025, it is known that even though the MBG program is already running, its implementation has not shown optimal synergy with the school's health business program. This can be seen from several important findings where the nutritious eating program runs regularly every morning, but is not accompanied by nutrition education activities or coaching of clean and healthy living behaviors. Teachers and health workers from the health center are not involved in designing menus or providing counseling on the importance of healthy eating. As a result, students only passively receive food without understanding the nutritional value of the food consumed. In addition, there has been no regular monitoring of student health. Although the goal of the program is to support improved health, there is no *monitoring system* that measures changes in a student's nutritional status or fitness on a regular basis. Students' weight and height were not systematically recorded, and there were no *health screenings* such as anemia screening, malnutrition, or gastrointestinal complaints associated with food intake. Another problem encountered by the researcher is the lack of collaboration between schools and health centers. Coordination between the school and the health center has not been actively established. Puskesmas are only involved in annual UKS activities such as the School Child Immunization Month, while the free meal program runs separately without assistance or control from health professionals. As a result, aspects of food safety, hygiene, and food nutritional content are not properly monitored. Limited capacity of teachers in accompanying the program, where teachers in schools do not have sufficient training or understanding of child nutrition and the role of healthy food in supporting concentration and learning productivity. They tend to leave food matters entirely to the caterer, without making it an integral part of the learning process or habituating healthy behaviors.

The results of the initial observation also found indicators that parents have not been actively involved in the evaluation process or feedback on the implementation of the nutritious eating program. Some parents don't even know the daily menu served to their children at school. In fact, family involvement is very important in forming healthy eating habits that are consistent between home and school.

From the various findings above, it can be seen that the MBG program has not synergized optimally with the main goal of UKS, which is to improve the overall health of students. The implementation of the program is still running individually, without integration with health education strategies, monitoring student growth and development, or fostering clean and healthy living behaviors. Another problem encountered by the researcher is the lack of involvement and coordination between stakeholders, especially between schools, food providers (*catering*), and local health centers. Teachers and school staff are not optimally involved in the process of menu planning and food quality monitoring. In fact, there are no nutritionists or health workers who routinely monitor nutritional content, hygiene, and the effects of food consumption on students' health. This shows the weak integration of the MBG program with the implementation of UKS at SD Mandiri Palembang.

The results of the above observation indicate that although the MBG program has good intentions and clear goals, its implementation is still not optimal. Technical, managerial, and lack of synergy with the UKS program have made this program not able to have a maximum impact on the health and formation of nutritional behavior of students. These initial observations are an important basis for researchers to dig deeper into how the mechanism of program implementation can be improved to be in line with the principles of healthy schools. Based on the background and the results of the initial observations, the researcher considers it important to conduct a study on the extent to which the MBG program contributes to strengthening the implementation of UKS in elementary schools. This study is expected to provide strategic input for the government, schools, and other stakeholders in realizing healthy schools as the foundation for the development of a smart, healthy, and competitive Indonesian generation. Therefore, the researcher will conduct a research entitled Implementation of the MBG Program in synergizing UKS at SD Mandiri Palembang.

Based on the background that has been described above, the formulation of the problem in this study is as follows: 1) How is the implementation that includes the planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang? 2) What are the implementation obstacles that include planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang? 3) What are the solutions to face implementation constraints that include planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang?

B. Methods

In this study, the researcher applied a qualitative approach with a descriptive method, and selected informants who were considered able to provide accurate information related to the problem being researched or who were often referred to as *key persons*. Moleong (2016) mentions qualitative research as a research procedure that produces descriptive data in the form of written or spoken words from people and observable behaviors, where the method used emphasizes the process of tracing data/information until it is felt that it has been used enough to make an interpretation. The informants determined in this study consisted of one school principal, one UKS coach, one teacher, and one student of SD Mandiri Palembang who were considered competent in providing the required data. The data collection techniques in this study use observation, interview, and documentation techniques. This is based on the opinion of Fauzan (2017) that the success of a naturalistic research is highly dependent on the accuracy and completeness of records compiled through observation, interviews, documentation and literature studies. In this study, the data analysis techniques used include the stages of data reduction, data presentation, and conclusion drawing (Miles & Huberman, 2013).

C. Results and Discussion

After the presentation of the data from the interview results from the three research sub-focuses as mentioned above, the findings of the implementation of the MBG program in synergizing school health efforts at SD Mandiri Palembang can be seen in the matrix of the following table.

Table 1. Findings

No	Subfocus	Findings
1	Implementation which includes planning, implementation, supervision and follow-up of the MBG program in synergizing school health businesses at SD Mandiri Palembang	Mapping or analysis of students' nutritional needs. Synergy of School Health efforts with the goals or objectives of the MBG program. There are students who lack appetite and don't even want to eat at all.
2	Implementation obstacles that include planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang	Mapping students' nutritional needs based on age. The objectives/objectives of the MBG program in the synergy of School Health efforts. There are some students who lack appetite and don't even want to eat at all.
3	Solutions to face implementation obstacles that include planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang	The initial steps taken to map students' nutritional needs can be done by means of periodic physical measurements (anthropometry) which include height (TB) and weight (BB) and the Calculation of Body Mass Index by Age (BMI/U). The method used to set the main goals of the program is to focus on the three main pillars of UKS, namely health education, health services, and healthy school environment development (Trias UKS). The main solution that can be done by students who lack appetite is to focus on adjusting the food menu (technical aspect) and behavioral approach (psychological/educational aspect).

Implementation which includes planning, implementation, supervision and follow-up of the MBG program in synergizing school health businesses at SD Mandiri Palembang

Based on the research subfocus on the implementation of the MBG program in synergizing school health businesses at SD Mandiri Palembang, data taken through observation, interviews, and documentation activities, data was obtained that the planning of the MBG program needs to be carried out optimally by the principal, school health business officers and the organizers of the MBG (MBG) program. Where this planning includes a cooperation contract (MOU) in advance between the school and the organizer. In addition, it is very necessary to synergize school health efforts to support the implementation of this program so that it can run more optimally. Where the first step that must be taken by UKS officers is to analyze/map the nutritional needs of students based on the student's height and weight. As also stated by several teachers at the planning stage, it is very necessary to map the nutritional needs of students so that nutrition fulfillment can be met. In addition, at the planning stage of the MBG program, it is necessary to formulate the main goals or objectives of the MBG program in synergy with the school's health business so that this program can be aligned with the three pillars of UKS, namely health education, health services, and fostering a healthy school environment.

Planning for a free nutritious program is very important to be done both by the school and the program organizer. Careful planning of the MBG program aims to ensure the achievement of nutritional fulfillment for students in schools, no students go hungry so that the quality of education can improve. In addition, the most crucial MBG program planning is crucial in the MBG program because it determines the effectiveness, efficiency, and overall sustainability of the program. Careful planning ensures that the program's objectives (improving nutrition and improving the quality of human resources) can be achieved. Without clear planning, the implementation of the MBG supeprogram tends to be undirected and does not have a significant impact on the fulfillment of student nutrition and the improvement of the quality of learning in schools. After the planning is prepared by the principal, UKS Coaches, teachers, and the program organizers through meetings/meetings, this program will be carried out according to the agreed schedule. This is closely related to the next research subfocus, namely on the implementation aspect. The implementation of the MBG program at SD Mandiri Palembang in 2025 will be held every Monday-Friday. The delivery of MBG food from the organizer's kitchen was carried out at around 09.00 as many as 108 ompreng received by the school according to the number of students of SD Mandiri from grades 1 to 6. In its implementation, School Health personnel check the quality of food and the cleanliness of food containers that are suitable for students before being distributed to all classes. This is in line with previous research which states that at the implementation stage, the government (through schools) provides daily nutritious food with a healthy local food-based menu, as well as ensuring food hygiene and safety. The connection between nutrition and character, in this program

also emphasizes the formation of students' positive character through discipline activities, cooperation, and integrated nutrition learning (Asril, et. al., 2025; Masita et. al., 2025; Albaburrahim, et. al., 2025; Herniati, 2025).

Teachers' understanding of the MBG program is very important because teachers are the closest parties to students in daily activities at school. There are several main reasons why this understanding is the key to the success of the program, namely ensuring the safety and health of students by supervising the serving process, ensuring that cutlery is clean, covered, and identifying foods that cause allergies. In addition, teachers also need to provide nutrition and food hygiene education to students by explaining the importance of washing their hands before eating, eating in a clean place, and eating healthy food. However, in the implementation in the classroom, the teacher found that there were some students who did not have appetite/appetite in consuming the food served. This is due to a less varied eating menu, less food taste for children, less attractive food appearance, cold food, and a different diet from at home.

Figure 1. Free Nutritious Food Menu

The following is a list of food menus for the MBG program for one week on November 24-29, 2025 at SD Mandiri Palembang.

Table 2. MBG Menu List for One Week

Day	Our	Side Dishes 1	Side Dishes 2	Vegetables	Fruit
Monday	Rice Oil	Malbi eggs	Fried Tempeh	Pickled cucumbers	Bananas
Tuesday	White Rice	Chicken Stew	Tofu	Cucumber carrots	Watermelon
Wednesday	White Rice	Omelet	Fried Tempeh	Squirrelly	Papaya
Thursday	Uduk Rice	Scrambled Eggs	Stir-Fried Tempeh	Cucumber	Watermelon
Friday	White Rice	Oyster Sauce Chicken	Fried tofu	Sauté Sprouts	Papaya
Saturday	Bread and Milk	Hard-boiled eggs	-	-	snakefruit

The need for teachers' understanding related to students' appetite with the learning process includes teachers who are parties who interact with students every day and know their behavior changes. By understanding that appetite affects concentration and learning stamina, teachers can identify students who are unfocused, weak, and

sleepy in learning and can find out if these signs are related to MBG food intake. So that teachers can report this to School Health business officers to follow up so that the implementation of the MBG program can be right on target in accordance with the three pillars of School Health business.

The next stage is the supervision aspect. At the supervision stage, the principal together with school health officers and teachers evaluate the MBG program that has been carried out. The findings obtained at this stage are that there are portions of food that are not in accordance with the age of the students and there are also students who do not wash their hands first before eating. Supervision during the presentation of food is an important aspect of the program. The study found that officers routinely ensure that food is distributed according to standard portions and daily menus. Supervision is carried out to ensure that food remains in a condition suitable for consumption, both in terms of temperature and cleanliness of the serving container. However, on several occasions, inaccuracies were found due to the limitations of measuring instruments or variations in the number of students present. This is of course influenced by several factors both internally and *externally.* The *internal factors* come from within the students, namely the appetite and habits of the students (some usually eat large portions and some in small portions or do not want to eat certain vegetables, money, and side dishes), the health condition of the students (again, flu, cough, and canker sores), preferences for menus (preferences for appetite), and psychological factors (following the diet of friends). Meanwhile, external factors come from the environment and program system, including inconsistent meal portions, unbalanced menu composition, food quality and temperature, and improper serving time.

Based on the findings obtained by the researcher in the research subfocus which includes planning, implementation, and supervision of the implementation of the MBG program in the synergy of School Health efforts at SD Mandiri Palembang, it can be concluded that the implementation of the MBG program still faces various obstacles. Nevertheless, the synergy between School Health and the MBG program continues to have a positive impact on increasing the nutritional needs of students. Therefore, more systematic, participatory, and sustainable efforts are needed so that the MBG program is truly optimal in achieving the program's goals/objectives that have been set.

Obstacles to Implementation which include planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang

To identify obstacles to the implementation of the MBG program with the synergy of School Health efforts at SD Mandiri Palembang, it is necessary to conduct a monitoring analysis that covers various aspects. Here are some findings that may arise

based on the general education in various schools and potential problems that can occur:

Mapping students' nutritional needs by age

Mapping the nutritional needs of students based on age is a *crucial obstacle* for the school, namely the principal, UKS officers and teachers who will receive the benefits of the MBG program for students. In the implementation of the MBG program, the mapping carried out includes the following: 1) Differences in calorie and nutritional needs between students in the lower classes (grades 1–3) and the higher classes (grades 4–6); 2) Adjustment of meal portions that are more in line with students' eating capacity and physical activity; 3) Identify children with special needs, such as students with allergies, food intolerances, or certain health conditions that require more intense supervision; 4) The use of data from school health businesses (UKS) such as weight, height, and nutritional status to update menu needs periodically.

This constraint emphasizes that the success of the MBG program is highly dependent on the relevance of the menu to the nutritional needs of children according to age groups. At SD Mandiri PaIembang, the principal, UKS officers and teachers as well as the MBG program organizers need to hold regular meetings to discuss student nutrition mapping. Information and data regarding the results of mapping students' nutritional needs are crucial to achieve the program's goals/objectives optimally. Without accurate mapping, food has the potential to be tasteless, not in portions, or not meeting daily energy standards.

Objectives/objectives of the MBG program in the synergy of School Health efforts

In the implementation of the MBG program, of course, the main goal of the program is to meet the nutritional needs of students. Therefore, the synergy of School Health and program organizers includes several main goals, which are as follows:

1. Improving students' nutritional status: The MBG program not only provides food, but ensures nutritional quality supports growth and development, prevents anemia, stunting, and underweight.
2. Supporting healthy living habits: UKS provides education on nutrition, food hygiene, washing hands before meals, and good eating procedures. The MBG program is a direct practice medium.
3. Improves Health discipline: With a regular eating schedule, students learn better diets.
4. Improves learning readiness: Eating nutritious foods improves focus, energy, and learning performance throughout the day.
5. Strengthen student health monitoring: UKS staff can monitor students who have no appetite, do not finish portions, or have certain eating problems, and then coordinate with teachers.

Based on the above obstacles, it is stated that the MBG program at SD Mandiri Palembang cannot stand alone, but is part of the integrated school health service system.

There are some students who lack appetite and don't even want to eat at all

There are some students who lack appetite and even do not want to eat at all, this is of course something *crucial* as an indication of obstacles in the implementation of the MBG program, which can be related to menu factors, services, student conditions, and the environment. Some of the possible causes that are relevant from the perspective of research can be seen from internal and external factors, which are as follows:

1. Internal Factors of Students: Food preferences are different so students don't like the taste or texture of the menu; Health conditions at that time, such as lack of fitness, canker sores, or indigestion; Mood and emotions, such as fighting, being uncomfortable, or stressed; Eating at home, there are students who are full or used to eating other menus.
2. External Factors of the Program: The menu is less varied so that students feel bored; Portions are inappropriate, too much or too little; Food presentation is less attractive, for example, pale color, not warm, or unpleasant aroma; The cleanliness of cutlery and dining locations is not paid attention to, affecting students' tastes; Lack of teacher mentoring or supervision during meals, so there is no one to guide students to try new foods.

At SD Mandiri Palembang, the implementation of the MBG program with the School Health business requires strong synergy to optimize program goals/objectives in accordance with the three pillars of School Health business. This is important so that the MBG program really functions optimally in supporting student health, development, and learning achievement.

Solutions to obstacles in implementation which include planning, implementation, supervision and follow-up of the MBG program in synergizing school health efforts at SD Mandiri Palembang

To overcome the problem of the Implementation of Academic Supervision on the Professional Dimension of Teachers on Teacher Performance at SD Negeri 147 PaIembang, here are some *concrete* solutions that can be applied:

Mapping students' nutritional needs by age

Solution: Based on the results of the study, obstacles in mapping the nutritional needs of students based on age arise due to the limited accuracy of nutrition data, unequal understanding of teachers and kitchen staff regarding the standard nutritional needs of elementary school children, and the lack of optimal coordination between parties involved in the provision of free nutritious food.

This is in line with research conducted by (Lubis et al., 2025) stating that the Average Body Mass Index (BMI) of respondents was recorded at 16.8 ± 2.8. This figure shows considerable variation in the nutritional status of respondents, reflecting diversity in diet, physical activity, and growth factors. Low or high BMI values can be an early indicator of the presence of a risk of malnutrition or obesity, so it is important to further assess the factors that influence them. Most respondents had normal nutritional status based on BMI to age, with a proportion of 73.3% (n = 44). This shows that most of the children and adolescents in this study have growth that matches their age standards. However, there were 11.7% (n = 7) of respondents who were malnourished, which is of concern because it has the potential to affect health and learning ability. In contrast, as many as 15.0% (n = 9) of respondents had an over-nutritional status, indicating the risk of obesity that can affect long-term health. The provision of stimulation in the form of counseling is very good to increase school children's understanding of the problem of malnutrition. The activity has provided benefits in the form of increasing school children's awareness of balanced nutrition. In addition, through this activity, participants also indirectly know their current nutritional status.

In this context, the research found several strategic solutions carried out by schools to overcome these obstacles, so that the implementation of the MBG program can run more effectively and in line with UKS principles.

1. Strengthening the mechanism of nutritional data collection through periodic anthropometric measurements: School health workers collaborate with classroom teachers to weigh weight, measure height, and record students' ages into a more systematic nutrition assessment format. The use of this standard format helps schools in identifying calorie and nutrient needs according to the age category and stage of development of students. Properly managed anthropometric data also makes it easier for school health workers to map the nutritional status of each individual, so that the provision of menus can be adjusted to the actual needs of students.
2. Activities Technical guidance and balanced nutrition guide: School health workers receive technical guidance and balanced nutrition guidance which is used as a reference in the preparation of the MBG daily menu. The guide helps overcome difficulties in understanding nutritional needs by age because there are recommendations for calories, proteins, vitamins, and minerals that are tailored to the age group of elementary school students. This synergy not only increases the accuracy of nutrition data, but also strengthens the aspect of health services in UKS, especially in monitoring child growth and development.
3. Brief training for teachers, kitchen staff, and MBG program managers regarding the classification of nutritional needs of school-age children: This training aims to equalize the perception of all parties regarding the importance of preparing menus based on the nutritional needs of children according to age. With this capacity increase, teachers and kitchen staff can play a more active role in

preparing menus and adjusting food portions based on the nutritional mapping data that has been obtained.

4. Increased frequency of monitoring and evaluation of student food consumption: This monitoring activity allows health workers and teachers to identify more quickly if there is a mismatch between students' nutritional needs and the daily consumption they receive. Follow-up is carried out through light counseling, strengthening nutrition education, and coordination with parents.

Objectives/objectives of the MBG program in the synergy of School Health efforts

Solution: Based on the results of the study, it was also found that there were also obstacles, namely setting the goals/objectives of the MBG program in the synergy of School Health efforts. To overcome this, the School implements several strategic solutions, which are as follows:

1. Preparation of Program Objectives Based on Nutritional Needs and Student Health Data: The research found that one of the main solutions to overcome obstacles in formulating MBG goals is to prepare goals based on student nutritional needs data. Schools began to use the results of anthropometric measurements, such as weight, height, and body mass index (BMI), as a basis for determining program goals. This approach makes MBG's goals more measurable "from data to program", rather than just general. Thus, the objectives of the program are more relevant to the real nutritional condition of students, for example improving normal nutritional status, decreasing the number of thin students, or improving healthy breakfast habits in schools.
2. Harmonization with the Three Pillars of UKS as a Program Goal Framework: Research shows that the school reformulates the MBG goals so that they not only focus on feeding, but also include aspects of nutrition education, health monitoring, and habituation of clean-living behaviors. This harmonization provides a more comprehensive direction, so that the MBG goal becomes an integral part of the UKS program, not just an additional program. For example, the goals of MBG are aligned with UKS's target of improving student personal hygiene and reducing the risk of diseases related to unhealthy diets.
3. Strengthening Coordination Between Parties for Equalization of Program Goal Perception: Research also shows that another important solution is to strengthen coordination between teachers, school health workers, MBG managers, and kitchen staff. This coordination is carried out in the form of regular meetings and discussion forums to equalize perceptions regarding program direction, target priorities, and success indicators. Prior to this solution, program implementers often had a different understanding of the purpose of MBGs: some emphasized only the aspect of food consumption, while others saw MBGs as a means to form healthy behaviors. Through more structured coordination, all parties finally have a uniform picture of the program's objectives, so that implementation becomes more focused and consistent.

Preparation of a More Structured MBG Goal and Target Document

The next solution is to prepare an official document containing the goals and objectives of the program in more detail. Previously, the School only had a general purpose without specific indicators. After the implementation of the solution, a goal document is made containing short-term and long-term goals, achievement indicators, priority student goals, and evaluation mechanisms. This document is not only a guideline for implementation, but also facilitates the monitoring and supervision of UKS. Research shows that with this document, the implementation of MBG becomes more targeted and sustainable.

There are some students who lack appetite and don't even want to eat at all

Solution: The results of the study show that the constraint of some students who lack appetite, even not wanting to eat food at all, is one of the factors that hinder the achievement of the goals of the MBG (MBG) program. This obstacle not only has an impact on meeting the daily nutritional needs of students, but also affects the success of the implementation of UKS in supporting the growth and development and health of students. To overcome these problems, the school implements a number of targeted and collaborative solutions which are discussed as follows.

1. Intensive Assistance During Mealtimes to Provide Direct Support: The first solution found by the study was to increase the assistance of classroom teachers and school health workers during mealtimes. This mentoring aims to ensure that students feel cared for, guided, and supported when they are less eager to eat. Students who have a tendency not to eat are given more attention through an individualized approach. The presence of a companion provides a sense of security, increases the comfort of students, and motivates them to taste the food provided. This approach also makes it easier for teachers and health workers to observe students' eating behavior directly.
2. Simple and Repetitive Nutrition Education to Shape Students' Understanding: Research shows that nutrition education provided in a simple, engaging, and repetitive manner is an effective solution to increase students' understanding of the importance of eating nutritious food. School teachers and health workers use the moment of eating together as a means of practical education, for example by explaining the benefits of certain foods for the body, why the body needs energy, and how food supports learning activities. Light and continuous education helps students change their perspective on food, so that motivation to eat increases gradually.
3. Menu Adjustments Based on Children's Preferences and Needs: The third solution is to adjust the food menu to better suit students' preferences and eating habits. The results show that some students refuse food not because they are not hungry, but because of the incompatibility of taste, texture, or type of food with their habits. Therefore, the School makes menu adjustments while maintaining the nutritional value needed, such as adding a variety of side dishes, changing

the texture of food, or serving vegetables in a more attractive form. This menu adjustment is a form of synergy between MBG and UKS to ensure food acceptance by students.

4. Personalized Approach to Students to Dig Up the Causes of Eating Problems: The results of the study show that some students have certain reasons such as not liking certain types of food, not eating breakfast, experiencing minor health problems, or having sensitivity to food odors and textures. For this reason, teachers and health workers take a personal approach by chatting directly with students to find out the specific causes of low appetite. From this approach, schools can determine a more targeted solution, for example giving small portions first, choosing alternative menus, or referring students to health centers if needed.

We conducted *research* and found that the research on the implementation of the MBG program in synergy with the School Health business at SD Mandiri Palembang carried out between the school and the food kitchen organizer *had implications* for the fulfillment of student nutrition. Hana et al stated that the MBG Program has been proven to have a real influence on improving student health in the long term. The results of the research conducted by Qomarrullah et. al., (2025) revealed that there has been a significant decrease in stunting and malnutrition rates in private schools that have been running the Good Nutrition Intake program for more than five years (Rahmah et al., 2025). This is also in line with other research conducted by (Fatimah et al., 2024) stating that the success of the MBG program is also reflected in the positive impact on student learning achievement. Research shows that better nutritional intake is closely related to increased concentration and learning outcomes. A study in West Papua revealed that students who get nutritious food consistently through the MBG program show significant improvements in their cognitive abilities and academic achievement. The findings further confirm that the fulfillment of good nutrition not only plays a role in maintaining physical health, but is also very important for children's mental development and learning abilities. In addition, the positive influence of the MBG Program on learning achievement is also reflected in the decrease in student absenteeism in schools. Students who obtain nutritious food tend to be more regular in learning activities and are able to learn more optimally compared to children who do not have access to adequate food intake. This situation has also created a more conducive and productive learning atmosphere, thus supporting the government's efforts to improve the quality of education, especially in remote areas.

The *implications of* the MBG program in synergizing School Health efforts at SD Mandiri Palembang are presented in the following discussion: The MBG program has a significant impact in synergizing the implementation of UKS in elementary schools, because through the activities of providing healthy food every day, schools can strengthen the promotive and preventive efforts that have been carried out by UKS, such as monitoring nutritional status, education on healthy diets, and habituation of clean living behavior. This program not only meets the nutritional intake needs of

students, but also encourages more intense collaboration between teachers and school health workers in controlling food quality, ensuring hygiene standards are met, and monitoring students who experience appetite problems. In addition, MBG contributes to increasing students' learning concentration, physical fitness, and endurance, thereby supporting the achievement of UKS goals in a more targeted and comprehensive manner. With this synergy, schools can build a healthier, safer, and more productive learning environment, while instilling healthy living habits in students from an early age through real practices that are integrated into their daily activities. However, if students experience a lack of nutritional intake, it will have a negative impact on their growth and will interfere with learning concentration.

This is in line with previous research that revealed that lack of nutritional intake can have a negative impact on children's brain development. Children who eat foods high in saturated fats and sugar are at risk of experiencing decreased memory and learning ability. This is due to the influence of glucose in food which can interfere with brain metabolism, causing children to feel tired quickly and lose focus (Rahmah et al., 2025).

In addition, the positive impact of the MBG program is also in line with the research conducted by (Qomarullah et al., 2025) stating that the results of the study show that the implementation of the MBG Program has a positive impact on the health condition of students in the long term. These findings are based on the results of interviews with school health workers and a review of students' health documents. From the data, it is known that the rate of stunting and malnutrition shows a significant decrease in private schools that have implemented the Good Nutrition Intake program for more than five years. As an illustration, in one of the schools that was the object of observation, the percentage of malnutrition was successfully reduced from 18% to 7% in a span of five years.

Thus, it can be concluded that the collaboration of school health efforts in the implementation of the MBG Program has a very positive impact. The role of school health workers in providing education about healthy and nutritious diets has been proven to have a significant effect on students' learning abilities. By meeting children's nutritional needs optimally, the level of study concentration can increase so as to support their academic success at school. This synergy can be seen through the integration of the implementation of the MBG program with the three main pillars of UKS, namely health education, health services, and fostering a healthy school environment.

D. Conclusions

This study elucidates the structured implementation of the Free Nutritious Meal Program (MBG) and its synergy with the School Health Program (UKS) at SD Mandiri Palembang. The key findings reveal that success is anchored in four interrelated phases: (1) Structured Planning, involving data-driven nutritional mapping and

multi-stakeholder coordination; (2) Effective Implementation, characterized by regular meal distribution, active teacher and health worker involvement, and concurrent nutrition education; (3) Ongoing Supervision, integrating hygiene monitoring, serving oversight, and nutritional status checks within the UKS framework; and (4) Responsive Follow-up, through motivational strategies and menu adjustments. A central insight is the program's deliberate operational integration with UKS pillars, creating a holistic health and nutrition ecosystem. Primary obstacles, such as varied student appetite and precise need mapping, were addressed through anthropometric measurements, behavioral approaches, and goal alignment with UKS objectives. The primary practical implication is the provision of a replicable model for other institutions. The case demonstrates that a feeding program's impact is maximized not in isolation but when embedded within a broader school health system. For practitioners, this underscores the necessity of formalizing collaboration between classroom teachers, health personnel, and food providers from the planning stage onward. School administrators are advised to adopt similar cyclical processes of assessment, action, supervision, and adaptation to ensure program sustainability and effectiveness. For future research, several pathways are recommended. Employing a mixed-methods longitudinal design would provide deeper insight into the program's long-term effects on student health metrics and academic indicators. Comparative studies across diverse socioeconomic school contexts would test the model's adaptability and scalability. Furthermore, research could quantitatively investigate the specific contribution of the nutrition education component to behavioral change. Finally, exploring the role and influence of parental engagement in reinforcing healthy eating habits developed through such school-based programs would offer a more comprehensive understanding of the ecosystem required for lasting impact.

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