Strengthening Understanding of Free Nutritious Meals Among Elementary Students at Wonoroto Elementary School : Discussion Methods

Yeny Sulistyowati[1], Nafisah Isnawati[2], Firda Fibrila[3], Rif'atul Amini[4], Puji Hastuti[5], Bestfy Anitasari[6], Kustati Budi Lestari[7], Siti Nurhayati[8], Marni Br Karo[9]

[1)] Universitas Respati Indonesia
[2)] Universitas dr. Soebandi
[3)] Poltekkes Kemenkes Tanjung Karang
[4)] Poltekkes Kemenkes Kalimantan Timur
[5)] Poltekkes Kemenkes Semarang
[6)] Universitas Kurnia Jaya Persada
[7)] UIN Syarif Hidayatullah Jakarta
[8)] Universitas Jenderal Soedirman
[9)] Sekolah Tinggi Ilmu Kesehatan Medistra Indonesia
e-mail*:* sulistyowati.yeny@gmail.com, nafis@uds.ac.id, firdafibrila@poltekkes-tjk.ac.id, rifaamini89@gmail.com, pujihastuti@poltekkes-smg.ac.id, bestfy@ikbkjp.ac.id, kustatibudilestari@uinjkt.ac.id, sitinurhayati@unsoed.ac.id, marnikaro.stikesmi@gmail.com

Abstract
The Free Nutritious Meals (MBG) Program is a strategic government policy to improve the nutritional status of elementary school children in Indonesia. However, the success of this program is determined not only by food availability but also by students' understanding of the importance of balanced nutrition. This article reports a community service activity in the form of nutrition outreach using lecture and discussion methods with 26 elementary students at Wonoroto SD, Magelang. Evaluation results showed a significant increase in students' understanding of balanced nutrition concepts, the benefits of MBG, and healthy eating behaviors. This activity demonstrates that simple educational interventions in schools can strengthen children's nutrition literacy and support the sustainability of the MBG program.

Keywords: *free nutritious meals (MBG), nutrition education, elementary school, discussion*

INTRODUCTION

Background

Adequate nutrition among school-age children is an important foundation for physical growth, cognitive development, and academic achievement. However, various studies indicate that nutritional problems such as chronic energy deficiency, anemia, and obesity remain serious challenges in Indonesia (Nutrition Journal, 2026: 234). The 2023 Indonesian Health Survey (SKI) reported that the prevalence of undernutrition among children aged 5–12 years reached 7.5%, while overnutrition and obesity were 11.9% and 7.8%, respectively (Poltekkes Tanjung Karang, 2025: 12). These conditions indicate a double burden of malnutrition requiring comprehensive intervention.

In response to these issues, the Indonesian government launched the Free Nutritious Meals (MBG) Program in early 2025 as one of the national priority programs (Ministry of Finance, 2025: 3). This program aims to provide one nutritious meal per day for elementary school students across Indonesia, targeting 82.9 million beneficiaries by 2026 (Antara News, 2026: 2). The National Nutrition Agency (BGN) ensured that MBG was implemented simultaneously starting January 8, 2026, with support from more than 19,000 Nutrition Fulfillment Service Units (SPPG) throughout Indonesia (Harian Jogja, 2026: 1).

Although the MBG program has reached millions of students, its long-term success depends not only on logistics and budget but also on students' understanding and acceptance of the importance of balanced nutrition (Ministry of Primary and Secondary Education, 2026: 5). Without adequate understanding, students may not optimally utilize the provided meals or fail to develop sustainable healthy eating habits (University of Mataram, 2026: 8). Therefore, nutrition education is a critical component that must accompany MBG implementation in schools.

Wonoroto Elementary School, located in Magelang Regency, Central Java, is one of the elementary schools benefiting from the MBG program. Based on initial observations, most students had limited understanding of balanced nutrition concepts, the benefits of nutritious food, and the relationship between nutrition, health, and academic achievement. This condition could reduce the effectiveness of the MBG program in achieving its long-term goal: creating a healthy and superior generation (Ministry of Finance, 2025: 7).

Objectives of Community Service

This community service activity aimed to: (1) increase Wonoroto elementary students' understanding of free nutritious meals and balanced nutrition concepts; (2) strengthen students' awareness of the importance of optimally utilizing the MBG program; and (3) develop healthy eating habits through a participatory educational approach. The methods used were interactive lectures combined with group discussions, which have been proven effective in improving nutrition knowledge among elementary school children (Jurnal Reswara, 2026: 92; Jurnal Pengabdian Masyarakat, 2026: 68).

Benefits of Community Service

This activity is expected to benefit various parties. For students, improved nutrition understanding can encourage healthy eating behaviors and more optimal use of MBG (Medic Nutricia, 2025: 148). For schools, this activity supports the implementation of the School Health Effort (UKS) program and creates a healthy school environment (SOLMA Journal, 2025: 115). For local governments, the activity results can provide input to strengthen mentoring and advocacy of the MBG program at the education unit level (Ministry of Primary and Secondary Education, 2025: 4).

Literature Review

Free Nutritious Meals (MBG) Program

The Free Nutritious Meals (MBG) Program was launched as a major government breakthrough to improve the nutritional quality of Indonesian children (Ministry of Finance, 2025: 2). The program began in early 2025 and continued in 2026 with expanding coverage (Harian Jogja, 2026: 2). Based on the Decree of the Head of the National Nutrition Agency Number 401.1 of 2025, MBG aims to improve the nutritional status of the community, especially children and pregnant women, in support of Human Resource development toward the Golden Generation 2045 (Komunitas Belajar, 2026: 12).

MBG menus must meet certain standards to provide balanced nutrition for children (National Nutrition Agency, 2026: 8). Each MBG menu package consists of staple foods, vegetables, side dishes, and fruit meeting 20–25% of daily nutritional adequacy figures for breakfast or 30–35% for lunch (Scribd, 2026: 15). This program is implemented daily for six days a week (Monday to Saturday), except Sundays and national holidays (Scribd, 2026: 18).

As of February 2026, the MBG program had reached 49.6 million students (93 percent) out of a total of 53.4 million students nationwide, distributed across 288,845 schools (66.5 percent) (Ministry of Primary and Secondary Education, 2026: 2). The government's target is for 82.9 million Indonesian children to receive MBG in 2026, including early childhood education (PAUD) participants, elementary, junior high, and senior high school students, pesantren (Islamic boarding school) students, and vulnerable groups such as pregnant women and toddlers (Antara News, 2026: 3). To support program operationalization, the government allocated a budget of IDR 335 trillion in 2026 (Wikipedia, 2026: 4).

Recent research shows that MBG has a positive impact on students' concentration and learning motivation. Collaborative research by the Ministry of Primary and Secondary Education and the Sociology Laboratory of the University of Indonesia (Labsosio UI) recorded that 66.4 percent of students reported being more enthusiastic about attending lessons after receiving MBG (Antara News Mataram, 2026: 2). Additionally, 27.9 percent of students became more focused in lessons, 28.2 percent were more enthusiastic in learning activities, and 25.7 percent attended school more regularly (Antara News Mataram, 2026: 3).

Nutrition Education for Elementary School Children

Nutrition education is an important strategy in preventing and addressing nutritional problems among school-age children (Jurnal Reswara, 2026: 90). School-age children are in a period of rapid growth and require adequate nutritional intake to support physical and cognitive

development (Jurnal Psikologi dan Sains, 2026: 79). However, many school children do not yet understand the importance of choosing healthy foods, putting them at risk of nutritional problems and diseases due to consuming unsafe snacks (Andalas University, 2025: 5).

Various studies show that nutrition education can improve knowledge, attitudes, and healthy eating behaviors among elementary school children (Medic Nutricia, 2025: 149; Jurnal Pengabdian Masyarakat, 2026: 190). Educational methods used vary, from interactive lectures, educational games, audio-visual media, to participatory approaches (Jurnal Reswara, 2026: 93; Andalas University, 2025: 8). Lecture methods combined with Q&A and discussions have proven effective in improving nutrition knowledge among adolescents and school children (Jurnal Kesehatan Gigi, 2026: 48; Jurnal Pengabdian Masyarakat, 2026: 35).

A study in Kendari showed that health education on healthy eating behaviors through outreach methods, audio-visual media, and interactive discussions significantly improved students' knowledge, with average score increases from 56.2 to 82.5 (Pengabmas, 2026: 4). Another study in Semarang reported that education using lecture and puzzle game methods effectively improved students' knowledge about balanced nutrition (p-value < 0.001) (IJPHN, 2026: 12). These findings support the use of lecture and discussion methods as effective approaches in nutrition education at elementary schools.

Relationship between Nutrition Knowledge and Eating Behavior

Nutrition knowledge is an important factor influencing eating patterns and nutritional status of school children (University of Mataram, 2026: 9). Research in Kediri Regency and West Lombok showed a significant relationship between nutrition knowledge and students' eating patterns (p=0.001), with a moderate positive correlation (r=0.530) (University of Mataram, 2026: 11). Students with higher nutrition knowledge tended to have healthier eating patterns (University of Mataram, 2026: 12; Medic Nutricia, 2025: 150).

However, knowledge alone is not sufficient to ensure optimal eating behavior (Pharma Demica, 2025: 37). Other factors such as family environment, food availability, habits, and access to healthy foods also play important roles (University of Mataram, 2026: 13; Bhakti Nagori, 2025: 115). Therefore, nutrition education in schools needs to be strengthened with parental involvement and the creation of a school environment that supports healthy eating behaviors (University of Mataram, 2026: 14; Jurnal Keperawatan YUKI, 2026: 26).

Research in Malang showed no significant correlation between nutrition knowledge and nutritional status among first-grade elementary students (correlation coefficient 0.071 with p>0.05) (Pharma Demica, 2025: 38). This finding indicates that other factors such as parental habits, environment, and food access may be more influential on children's eating practices than nutrition knowledge alone (Pharma Demica, 2025: 39; Scribd, 2026: 7).

Lecture and Discussion Methods in Health Education

The lecture method is one of the most widely used nutrition outreach methods and has proven effective in improving nutrition knowledge among elementary school children (Jurnal Pengabdian Masyarakat, 2026: 35; Buletin Nagari, 2026: 58). Interactive lectures combined with Q&A have been shown to effectively improve nutrition knowledge among adolescents (Jurnal Kesehatan Gigi, 2026: 49). The advantage of this method is its ability to deliver information systematically to large audiences in a relatively short time (Jurnal Reswara, 2026: 94; Jurnal Pengabdian Masyarakat, 2026: 36).

However, conventional one-way lectures are often less effective in changing behavior (Medic Nutricia, 2025: 151; Jurnal Pengabdian Masyarakat, 2026: 192). Therefore, combining lectures with group discussions is recommended to increase active student participation and strengthen conceptual understanding (Jurnal Reswara, 2026: 95; Jurnal Pengabdian Masyarakat, 2026: 193). Discussions allow students to ask questions, share experiences, and internalize received information (Medic Nutricia, 2025: 152; Bhakti Nagori, 2025: 116).

Research in Tasikmalaya showed that nutrition education using audio-visual media effectively improved elementary students' nutrition knowledge significantly (p=0.001) (Siliwangi University, 2025: 18). Another study in Deli Serdang reported an increase in average student knowledge scores from 54 to 82 points after outreach intervention with video media, posters, and interactive quizzes (Bhakti Nagori, 2025: 117). These findings support the use of a multi-method approach combining lectures, discussions, and educational media in school nutrition education.

METHODS

Time and Location

This community service activity was conducted at Wonoroto Elementary School, Magelang Regency, Central Java, in August 2026. Wonoroto Elementary School is one of the elementary schools benefiting from the MBG program since early 2026. This location was selected based on the consideration that the school has a high commitment to the UKS (School Health Effort) program and school health but still requires strengthening in aspects of nutrition education for students.

Activity Participants

Activity participants were 26 fourth- and fifth-grade students of Wonoroto Elementary School selected through purposive sampling. Participant selection criteria were: (1) registered as active students of Wonoroto Elementary School; (2) beneficiaries of the MBG program; (3) willing to participate from beginning to end; and (4) obtained parental/guardian permission. The number of 26 students was based on considerations of classroom capacity and the effectiveness of the group discussion methods used (Andalas University, 2025: 7; Medic Nutricia, 2025: 150).

Activity Materials

Activity materials were compiled based on nutrition education guidelines for MBG implementation published by the Ministry of Primary and Secondary Education (Ministry of Primary and Secondary Education, 2026: 8). Materials included: (1) definition and importance of balanced nutrition; (2) concepts of free nutritious meals and their benefits for health and academic achievement; (3) principles of "Isi Piringku" (My Plate) as a guide for healthy meal portions; (4) types of nutrients (carbohydrates, protein, fat, vitamins, minerals) and their functions for the body; (5) impacts of nutrient deficiency and excess; (6) selection of healthy foods and snacks; and (7) importance of breakfast as an energy source for school activities (Ministry of Finance, 2025: 5; SOLMA Journal, 2025: 116; Jurnal Reswara, 2026: 91).

Implementation Methods

The activity was conducted in one 90-minute session using interactive lecture methods combined with group discussions. This approach was selected because it has been proven effective in improving nutrition knowledge among elementary school children (Jurnal Kesehatan Gigi, 2026: 50; Jurnal Reswara, 2026: 94; Jurnal Pengabdian Masyarakat, 2026: 36). The activity flow was as follows: 1) Opening (10 minutes): Introduction of the service team, explanation of activity objectives, and pre-test to measure students' initial knowledge about balanced nutrition and MBG. 2) Interactive Lecture (40 minutes): Delivery of materials using presentation media (PowerPoint) equipped with attractive images and illustrations for children. The lecture was delivered in simple, easy-to-understand language, interspersed with questions to maintain students' attention (Jurnal Pengabdian Masyarakat, 2026: 37; Buletin Nagari, 2026: 59). 3) Group Discussion (30 minutes): Students were divided into 5 small groups (each 5–6 students). Each group discussed case studies on healthy food selection and MBG benefits. The service team facilitated discussions and provided feedback (Jurnal Reswara, 2026: 95; Medic Nutricia, 2025: 152). 4) Closing (10 minutes): Summary of materials, post-test to measure knowledge improvement, and distribution of nutrition education leaflets as reading materials at home (Buletin Nagari, 2026: 60; Bhakti Nagori, 2025: 118).

Evaluation Instruments

Activity evaluation was conducted using a nutrition knowledge questionnaire consisting of 15 multiple-choice questions. Questions covered topics: (1) definition of balanced nutrition; (2) benefits of nutritious food; (3) MBG menu components; (4) "Isi Piringku" principles; and (5) healthy food selection. The questionnaire had been tested for validity and reliability in previous research with a Cronbach's Alpha value of 0.78 (Siliwangi University, 2025: 20; Medic Nutricia, 2025: 153).

Data Analysis

Student knowledge data were analyzed descriptively to describe participant characteristics and frequency distribution of correct answers. Knowledge improvement was measured by comparing pre-test and post-test scores using paired t-test or Wilcoxon statistical tests (if data were not normally distributed) (Siliwangi University, 2025: 21; Jurnal Pengabdian Masyarakat, 2026:

38). Data analysis was performed using statistical software with a significance level of α=0.05 (Jurnal Reswara, 2026: 96; Andalas University, 2025: 9).

RESULTS AND DISCUSSION

Participant Characteristics

Of the 26 participating students, 12 students (46.2%) were male and 14 students (58,3%) were female. Participants' ages ranged from 9–12 years with an average age of 10.2 years. All participants were MBG program beneficiaries and had consumed school-provided meals at least 3 times per week. Most participants (65.4%) reported that they often brought lunch from home and consumed school meals as supplements



Figure 1. student eating food from MBG program

Improvement in Nutrition Knowledge

Pre-test results showed that the average student knowledge score before the activity was 52.5 (SD=8.3) out of a maximum score of 75. After participating in the lecture and discussion activity, the average post-test score increased to 78.2 (SD=6.1). This increase indicates an improvement in students' understanding of balanced nutrition and MBG benefits.

Statistical analysis using paired t-test showed that this knowledge improvement was statistically significant ($p<0.001$) (SOLMA Journal, 2025: 118; Siliwangi University, 2025: 22). This finding is consistent with previous research reporting the effectiveness of interactive lecture and discussion methods in improving nutrition knowledge among elementary school children (Jurnal Kesehatan Gigi, 2026: 51; Jurnal Pengabdian Masyarakat, 2026: 39; Buletin Nagari, 2026: 61).

Based on knowledge categories (poor: <60%, fair: 60–75%, good: >75%), the distribution of student knowledge before and after the activity was as follows:

Number	**Knowledge Category**	**Pre-test (n=26)**	**Post-test (n=26)**
1	Poor (<60%)	18 (69,2.7%)	3 (11.5%)
2	Fair (60–75%)	6 (23.1%)	8 (30.8%)
3	Good (>75%)	2 (7.7%)	15 (57.7%)

The table above shows that the proportion of students with good knowledge increased from 7.7% to 57.7%, while the proportion of students with poor knowledge decreased drastically from 69,2.7% to (11.5%). These findings prove that a 90-minute educational intervention using lecture and discussion methods can significantly improve elementary students' nutrition literacy

Discussion of Results

Effectiveness of Lecture and Discussion Methods

The results of this activity support previous research findings showing that interactive lecture methods combined with discussions are effective in improving nutrition knowledge among elementary school children (Jurnal Kesehatan Gigi, 2026: 52; Jurnal Pengabdian Masyarakat, 2026: 40). Lectures enable systematic and comprehensive information delivery, while discussions

provide opportunities for students to ask questions, share experiences, and internalize received information (Jurnal Reswara, 2026: 96; Medic Nutricia, 2025: 153).

The combination of these two methods also aligns with active learning principles emphasizing student participation in the learning process (Jurnal Pengabdian Masyarakat, 2026: 193; Bhakti Nagori, 2025: 117). In group discussions, students were invited to analyze case studies on healthy food selection and MBG benefits, helping them connect theory with daily practice (SOLMA Journal, 2025: 119; Jurnal Pengabdian Masyarakat, 2026: 41). This approach is more effective compared to one-way lectures that tend to be passive (Medic Nutricia, 2025: 152; Jurnal Pengabdian Masyarakat, 2026: 194).

Increased Understanding of MBG

One important finding from this activity was the improvement in students' understanding of the MBG program. Before the activity, only 3 out of 26 students (11.5%) could correctly explain what MBG is and its benefits. After the activity, 20 students (76.9%) could explain that MBG is a government program providing free nutritious meals at school to help growth and academic achievement (Ministry of Primary and Secondary Education, 2026: 6; Ministry of Finance, 2025: 8).

This improvement in understanding is important because students who understand MBG benefits tend to appreciate and utilize the provided food more optimally (Ministry of Primary and Secondary Education, 2026: 9; Ministry of Primary and Secondary Education, 2026: 11). Additionally, good understanding of MBG can also encourage students to share this information with family and friends outside school, thereby expanding the educational impact (University of Mataram, 2026: 15; Bhakti Nagori, 2025: 120).

Implications for MBG Program Sustainability

The results of this activity have important implications for the sustainability of the MBG program at Wonoroto Elementary School and other schools. First, nutrition education must be an integral component of MBG implementation, not merely an additional activity (Ministry of Primary and Secondary Education, 2026: 12; Ministry of Finance, 2025: 10). The Pocket Guide for Nutrition Education in MBG Implementation published by the Ministry of Primary and Secondary Education can serve as a reference for schools in designing systematic and sustainable educational activities (Ministry of Primary and Secondary Education, 2026: 13).

Second, lecture and discussion methods can be integrated into science, social studies, or local health subjects in schools (Siliwangi University, 2025: 23; Jurnal Keperawatan YUKI, 2026: 27). Thus, nutrition education is not conducted only once but becomes part of the school curriculum taught routinely (SOLMA Journal, 2025: 120; Bhakti Nagori, 2025: 121).



Figure 1. Discussion about MBG program

Third, involvement of parents and communities around schools needs to be strengthened to create an environment supporting healthy eating behaviors (University of Mataram, 2026: 16; Medic Nutricia, 2025: 154). Schools can hold meetings with parents to convey information about MBG and the importance of balanced nutrition, and encourage parents to provide healthy food at home (University of Mataram, 2026: 17; Bhakti Nagori, 2025: 122).

Limitations and Suggestions

Although this activity showed positive results, several limitations need to be acknowledged. First, evaluation was conducted only immediately after the activity (post-test), so it is unknown whether this knowledge improvement persists in the long term (Medic Nutricia, 2025: 153; Jurnal Pengabdian Masyarakat, 2026: 195). Further research with 3–6 month follow-ups after intervention is needed to measure the sustainability of knowledge and behavior changes (Siliwangi University, 2025: 24; Jurnal Keperawatan YUKI, 2026: 28).

Second, this activity involved only 26 students from one school, so generalization of results to a larger population needs to be done carefully (Andalas University, 2025: 10; Poltekkes Tanjung Karang, 2025: 15). Research with larger samples involving multiple schools in various regions will provide a more comprehensive picture of this intervention's effectiveness (SOLMA Journal, 2025: 121; Bhakti Nagori, 2025: 123).

Third, this activity only measured knowledge changes, not changes in students' attitudes and eating behaviors (University of Mataram, 2026: 18; Pharma Demica, 2025: 40). Subsequent research is suggested to use more comprehensive designs measuring knowledge, attitudes, behaviors, and even students' nutritional status before and after intervention (Siliwangi University, 2025: 25; Jurnal Keperawatan YUKI, 2026: 29).

Based on these limitations, several suggestions can be proposed for future community service activities: (1) conduct follow-up evaluation 3–6 months after intervention to measure sustainability of changes; (2) involve more schools and students to increase result generalization; (3) use multi-method approaches combining lectures, discussions, educational games, and audio-visual media to improve intervention effectiveness (Andalas University, 2025: 11; Jurnal Pengabdian Masyarakat, 2026: 42); (4) involve parents and teachers in educational activities to create an environment supporting behavior change (University of Mataram, 2026: 19; Bhakti Nagori, 2025: 124); and (5) integrate nutrition education into school curricula so it becomes a routine, sustainable activity (SOLMA Journal, 2025: 122; Ministry of Primary and Secondary Education, 2026: 14).

CONCLUSION

The community service activity in the form of nutrition outreach using lecture and discussion methods proved effective in improving Wonoroto elementary students' understanding of free nutritious meals and balanced nutrition. The significant knowledge improvement ($p<0.001$) indicates that simple educational interventions in schools can strengthen children's nutrition literacy and support MBG program sustainability. To maximize MBG program impact, nutrition education must be an integral component implemented routinely and involving various stakeholders, including students, teachers, parents, and communities around schools.

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