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Effect of Breakfast Education on Students' Knowledge, Attitude, and Motivation at SDN 38/IX Muaro Jambi

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Abstract

Many elementary school students are still unaware of the role of breakfast as an important source of energy for learning activities. Lack of knowledge, lack of support and low motivation affect children's breakfast habits. This study analyzes how education affects students' knowledge, attitudes and motivation regarding the importance of breakfast at SDN 38/IX Jambi Kecil, Muaro Jambi Regency. This study used a quantitative approach that included a quasi experimental design and a single group pre-test post-test design. The sample of this study involved 67 students in grades IV–VI who were selected using the total sampling technique. Data were collected through questionnaires distributed before and after education. Data analysis was carried out using the Wilcoxon Signed Rank Test. The results of the Wilcoxon test showed a significant effect on the three variables, namely knowledge (Z = -7.273; p = 0.000), attitude (Z = -6.901; p = 0.000) and motivation (Z = -6.709; p = 0.000). All three variables showed an increase in value after being given education. Education about the importance of breakfast has a significant effect on increasing knowledge, forming positive attitudes, and motivating students to eat breakfast regularly. It is suggested that these programs can have supportive and preventive effects and can strengthen the health of elementary school children from an early age.

Keywords: Knowledge, Education, Attitude, Motivation, Breakfast

INTRODUCTION

Child nutrition problems remain a global challenge that impacts growth and development and academic achievement (United Nations Children's Fund, World Health Organization & World Bank, 2023). Furthermore, nationally, according to the 2023 Indonesian Health Survey (SKI), 14.1% of children in Indonesia are classified as stunted. Meanwhile, 4.6% are classified as severely stunted (Kemenkes, 2023). In Jambi Province, the prevalence of stunting in children aged 5–12 years reached 15%, while 5.5% were classified as having severe stunting (Dinas Kesehatan Provinsi Jambi, 2023). Meanwhile in Jambi City, the stunting rate is 13.5% (Dinas Kesehatan Provinsi Jambi, 2023).

Nutritional problems in children can be exacerbated by the habit of skipping breakfast. Breakfast plays an essential role in supporting nutritional intake, concentration, and students' academic performance. Research has shown that breakfast significantly contributes to healthy eating patterns and enhances memory and learning performance (Rahmiwati, 2020). However, data from the Indonesian Ministry of Health in 2023 noted that about 65% of school-age children in Indonesia still do not eat breakfast (Kautsar, 2024). This condition can lead to energy deficiency, cognitive impairment, and an increased risk of nutritional and diet-related disorders (Wijayanti, 2023).

The Ministry of Health Regulation No. 41 of 2014 on Balanced Nutrition Guidelines stated that about 40% of school children in Indonesia still skip breakfast (Kementerian Kesehatan Republik Indonesia, 2014). Although this data is not the latest, the official document remains relevant as a reference for evaluating breakfast habits among Indonesian children. The Ministry of Health has also initiated several nutrition education programs, such as the National Breakfast Week (PESAN), to raise public awareness of the importance of breakfast (Wahyuni, 2022).

The breakfast habit plays a crucial role in meeting 25–30% of daily energy needs and contributes to physical health and cognitive function (Liyanage & Hettiarachchi, 2011; World Health Organization, 2020). The World Health Organization (WHO) emphasizes breakfast as an essential part of a balanced diet to support children's growth and prevent chronic diseases (WHO, 2020).

Previous studies have demonstrated that nutrition education, including breakfast education, can improve students' knowledge and attitudes toward healthy eating behavior. A study conducted at SDI Oebufu, Kupang, in 2021 found that education on healthy breakfast positively influenced students' knowledge and attitudes toward regular breakfast habits (Nezha, 2021). This indicates the importance of continuous educational efforts in elementary school environments.

Furthermore, regional characteristics also influence children's breakfast patterns. The 2023 Indonesia Health Survey found that the prevalence of malnutrition was higher in rural areas (3.9%) than in urban areas (3.2%) (Kemenkes, 2023). This finding indicates that geographic and social factors contribute to schoolchildren's eating behaviors.

A preliminary survey conducted at SDN 38/IX Jambi Kecil, Muaro Jambi Regency, showed that 31 students (46%) ate breakfast before school, while 36 students (54%) did not. Although most students understood the importance of breakfast, their comprehension of the specific benefits of breakfast for health and learning performance was still limited.

Based on these findings, educational interventions are needed to improve students' knowledge and attitudes regarding the importance of breakfast. Therefore, this study aims to analyze the effect of education on the importance of breakfast on students' knowledge and attitudes at SDN 38/IX Jambi Kecil, Muaro Jambi Regency.

RESEARCH METHODS

This study used a quasi-experimental design with a one-group pre-test and post-test approach to assess the effect of breakfast education on students' knowledge and attitudes. The study was conducted at SDN 38/IX Muaro Jambi using a total sampling technique involving all students who met the criteria.

The educational materials used were PowerPoint presentations (PPT) and short educational videos on the importance of breakfast. The variables measured were students' knowledge, attitudes, and motivation regarding breakfast. Data collection was conducted using a structured questionnaire completed by the students themselves, which underwent validity and reliability testing before use.

The research procedures included administering a pre-test, delivering educational interventions using PPT and video media, and administering a post-test after the educational session. Data were analyzed using univariate analysis to describe the distribution of each variable and bivariate analysis using the Wilcoxon Signed-Rank test because the data were not normally distributed. All analysis procedures followed accepted statistical principles.

RESULTS AND DISCUSSION

A. General Description of the Study Location

The study was conducted at SD Negeri 038/IX Muaro Jambi, located in Jambi Luar Kota District, Muaro Jambi Regency. This public elementary school operates under the Ministry of Education and Culture and is situated in an easily accessible area. The school provides six permanent classrooms, a principal's office, a teacher room, a library, a school health unit (UKS), and other supporting facilities. SD Negeri 038/IX accommodates 147 students from grades I to VI and is supported by 13 qualified teaching and administrative staff with a minimum education level of D-IV/Bachelor. With adequate infrastructure and active learning activities, this school serves as an appropriate setting for implementing breakfast education interventions for students.

B. Respondent Characteristics

A total of 67 students from grades 4 to 6 at SD 38/IX Jambi Kecil, Muaro Jambi Regency, participated in this study. Respondent characteristics based on gender and grade are shown in Table 1 below:

Table 1. Distribution of Respondent Characteristics of Students at Public Elementary School 038/IX

Variables	Category	n	%
Gender	Man	35	52,20
	Woman	32	47,80
Class	Class IV	22	32,80
	Class V	25	37,30
	Class VI	20	29,90
Total		67	100,00

Source: Processed Primary Data, 2025

The respondents were dominated by male and female students with a relatively balanced distribution. They represented students from grades IV, V, and VI according to the sample structure presented in Table 1.

C. Univariate Analysis

1. Student knowledge level

Pre test Knowledge Category (Median)
Good : ≥ 7
Less : < 7

Table 2. Distribution of Respondents Based on Pre Test Knowledge Category

knowledge category	n	%
Good	32	47,7
Less	35	52,2
Total	**67**	**100**

Source: Processed Primary Data, 2025

Post test Knowledge Category (Median)
Good : ≥ 8
Less : < 8

Table 3. Distribution of Respondents Based on Post Test Knowledge Category

knowledge category	n	%
Good	43	64,1
Less	24	35,8
Total	**67**	**100**

Source: Processed Primary Data, 2025

Based on Table 2, before the education, the majority of students were in the lower knowledge category. After the education, as shown in Table 3, there was a shift in the proportion of students to the higher knowledge category. This indicates a positive change in students' knowledge levels after receiving education about the importance of breakfast.

2. Student Attitude Level

Pre test Attitude Category (Median)
Positive : ≥ 34
Negative : < 34

Table 4. Distribution of Respondents Based on Pre Test Attitude Categories

Attitude Category	n	%
Positive	42	62,6
Negative	25	37,3
Total	**67**	**100**

Source: Processed Primary Data, 2025

Post test Attitude Category (Median)
Positive: ≥ 36
Negative: < 36

Table 5. Distribution of Respondents Based on Post Test Attitude Categories

Attitude Category	n	%
Positive	47	70,1
Negative	20	29,8
Total	**67**	**100**

Source: Processed Primary Data, 2025

Based on Table 4, before the education, some students still showed less favorable attitudes toward breakfast habits. After the education, Table 5 shows that the proportion of students with positive attitudes increased compared to before. This indicates that the educational materials, including the PPT and short videos, were able to help students develop a more positive view of the importance of breakfast.

3. Student Motivation Level

Pre Test Motivation Category (Median)
High: ≥ 34
Low: < 34

Table 6. Distribution of Respondents by Category Pre Test Motivation

Motivation Category	**n**	**%**
High	35	52,2
Low	32	47,7
Total	**67**	**100**

Source: Processed Primary Data, 2025

Post Test Motivation Category (Median)
High: ≥ 37
Low: < 37

Table 7. Distribution of Respondents by Category Post Test Motivation

Motivation Category	**n**	**%**
High	36	53,7
Low	31	46,2
Total	**67**	**100**

Source: Processed Primary Data, 2025

Based on Table 6, some students' motivation was suboptimal before the education was provided. After the education was delivered via PPT and short videos, an increase in the number of students in the high motivation category was observed (Table 7). This finding suggests that interactive and visual delivery of materials can help increase students' internal drive to make breakfast a habit.

D. Bivariate Analysis

1. Knowledge

The Wilcoxon test to determine differences in knowledge can be seen in the following table:

Table 8. Wilcoxon Test Results for Pre Test and Post Test Knowledge Scores

Variables	**n**	**Z**	**P-Value**
knowledge	67	-7.273	0.000

Source: Processed Primary Data, 2025

Based on the Wilcoxon test, the obtained Z value indicates a change in the knowledge scores before and after the breakfast education. This result suggests that the educational intervention contributed to improving the students' scores after the session.

2. Attitude

The Wilcoxon test to determine differences in attitudes can be seen in the following table:

Table 9. Wilcoxon Test Results for Pre Test and Post Test Attitude Scores

Variables	n	Z	P-Value
Attitude	67	-6.901	0.000

Source: Processed Primary Data, 2025

The findings show a change in students' attitudes following the education. Students demonstrated a more positive perception of breakfast habits.

3. Motivation

The Wilcoxon test to determine differences in motivation can be seen in the following table:

Table 10. Wilcoxon Test Results for Pre Test and Post Test Motivation Scores

Variables	n	Z	P-Value
Motivation	67	-6.709	0.000

Source: Processed Primary Data, 2025

Based on the Wilcoxon test, the analysis indicates a change in students' motivation scores before and after the breakfast education.

Knowledge is formed through a process in which an individual understands information based on experience, observation, or educational exposure. In the context of breakfast habits, students' knowledge includes understanding the benefits of breakfast, the consequences of skipping it, and examples of healthy breakfast options. The results of this study indicate a shift in students' knowledge categories after receiving education. This change is reflected in the increased proportion of students who fall into the "good" knowledge category compared to before the educational intervention. This finding suggests that the educational activity contributed to improving students' understanding of the importance of having breakfast. This improvement aligns with the Health Belief Model (HBM), which states that knowledge serves as a foundation for developing perceptions of benefits and risks. When students understand the advantages of having breakfast and the consequences of skipping it, they are more receptive to health messages and more likely to adjust their behavior. These findings are supported by previous studies. Nuka et al. (2024) demonstrated that nutrition education using flashcards improved breakfast-related knowledge among elementary students. Similarly, research by Jati Prasetyo et al. (2020) reported an increase in student knowledge after receiving education about healthy breakfast habits. Sari et al. (2024) also found that audiovisual counseling effectively enhanced students' understanding of breakfast. However, not all educational approaches yield similar results. Indriasari et al. (2021) reported that nutrition education among high school students did not always lead to improved knowledge. This suggests that the effectiveness of education may depend on the instructional method, media used, and the level of student engagement. Overall, these findings emphasize that breakfast education plays a meaningful

preventive role in improving students' knowledge from an early age and supports efforts to build healthy eating habits in school environments.

Attitude refers to a person's internal response toward an object, shaped by knowledge, emotions, and motivation. In this study, students' attitudes reflect their willingness to adopt breakfast as a daily habit before learning activities. Based on the comparison of pre- and post-education measurements, most students showed an improvement in positive attitudes. This indicates that the educational intervention helped students develop a more favorable view of the importance of breakfast. This change aligns with the Health Belief Model (HBM), which explains that attitudes are shaped by perceived benefits, barriers, and self-efficacy. When students understand the benefits of breakfast and the consequences of skipping it, they are more likely to form supportive attitudes toward the behavior. These findings are consistent with Anisa Sekar et al. (2022), who showed that nutrition education delivered through various media can reinforce positive attitudes toward breakfast. Similar results were reported by Mardiana et al. (2025) and Briawan et al. (2014), emphasizing that visual and engaging educational approaches strengthen students' attitudes toward breakfast. However, some studies such as Prasetyo et al. (2020) found that increased knowledge does not always result in improved attitudes. This highlights the importance of the method used in delivering educational materials. Overall, the present study underscores that interactive and continuous health education in elementary schools is essential for strengthening both understanding and attitudes toward healthy breakfast habits.

Motivation is an internal force that drives a person's direction and intensity of actions, including the desire to establish a healthy breakfast routine before learning. In this study, motivation reflects the students' willingness to adopt breakfast habits after receiving information about its benefits. The analysis indicates an improvement in students' motivation following the educational intervention. This change suggests that the information delivered successfully encouraged students to commit more strongly to having breakfast. This finding aligns with Muwfaq et al. (2024), who reported that the quality of breakfast is associated with students' adaptive academic motivation. Similarly, Martin et al. (2024) in Australia found that students who consume healthy breakfasts tend to be more motivated and perform better in school. Comparable results were reported by Novita Sari et al. (2024), who observed that audiovisual education media improved not only knowledge but also the motivation to maintain healthy breakfast habits long-term. However, other studies, such as Indriasari et al. (2021), showed that motivational improvements may vary depending on how actively students are engaged during the educational process. Theoretically, these findings are consistent with the Health Belief Model (HBM), which explains that motivation arises when individuals understand the benefits of a behavior and believe in their ability to perform it (self-efficacy). Therefore, educational efforts that strengthen perceived benefits and enhance students' confidence can effectively support motivation to adopt regular breakfast habits.

CONCLUSION

The results of the study showed that education about the importance of breakfast had a positive impact on students at SDN 38/IX Jambi Kecil, Muaro Jambi Regency. The education provided increased students' knowledge about the benefits of breakfast, strengthened their positive attitudes toward the habit, and encouraged them to make breakfast a daily routine. Overall, this educational intervention proved effective in supporting the development of students' understanding, attitudes, and internal motivation to adopt healthy breakfast habits.

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