

The Relationship between Appetite and the Free Nutritional Meal Program (MBG) and Physical Fitness of Upper Grade Elementary School Students

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Abstract

Physical fitness is an important indicator of the health condition of elementary school-aged children, which is closely related to adequate nutritional intake. The Free Nutritional Meal Program (MBG) is a government policy to meet students' nutritional needs, but its success depends on students' appetite in consuming the provided food. This study aims to determine the relationship between MBG appetite and the physical fitness of upper-grade students. The study used a quantitative correlational approach with a saturated sampling technique on 58 students in grades IV, V, and VI of Prima Cendekia Islamic School, Wonoasri Village, Grogol District, Kediri Regency. MBG appetite data were collected through a Likert-scale questionnaire, while physical fitness data were measured using the Indonesian Physical Fitness Test (TKJI) for ages 10–12. Data were analyzed using the Kolmogorov-Smirnov normality test, linearity test, and Pearson Product Moment correlation test with the help of SPSS for Windows version 26.0. The results of the study showed that the calculated r value was 0.516, which was greater than the r table of 0.258 ($N=58$, significance level 5%), with a significance value of $0.000 < 0.05$, so H_0 was rejected, and H_1 was accepted. This finding proves that there is a significant relationship with a moderate correlation level between MBG appetite and students' physical fitness. The results of this study provide implications for the importance of increasing students' acceptance of the MBG menu to support the optimization of physical fitness of elementary school-aged children.

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1. INTRODUCTION

Physical fitness is the body's ability to perform daily activities without experiencing significant fatigue and enables individuals to continue with the next activity. For elementary school students, physical fitness is very important because it is related to physical growth, the ability to carry out activities at school, concentration in learning, and overall health development (Giriwijoyo & Sidik, 2012). One factor suspected of influencing physical fitness is appetite, namely the biological drive to consume food that is indirectly related to the adequacy of nutritional intake needed by the body (Almatsier, 2016).

The Indonesian government, through the Free Nutritious Meal Program (MBG), strives to meet the nutritional needs of elementary school students to support their growth, health, and physical

fitness. Several studies have shown that the MBG program contributes to improved nutritional status, increased concentration in learning, and school attendance (Bactiara Putri et al., 2026; Eyes & Nadia, 2025; Pangaribuan & Siregar, 2022). However, the success of this program is determined not only by the availability of nutritious food, but also by students' appetite, which determines the amount and quality of nutritional intake actually consumed.

Various previous studies have demonstrated a relationship between diet, nutritional status, and food intake with physical fitness and learning concentration in student populations. Sahrul Jahrir (2025) found a significant relationship between diet and physical fitness levels of vocational high school students. Putri, Nugroho, and Lestari (2023) demonstrated that food consumption and nutritional status are related to physical fitness in pencak silat athletes. Yulianto and Herdiyana (2025) found, through a literature review, that nutritional status is closely related to students' general physical fitness. Meanwhile, Wardoyo and Mahmudiono (2013) and Sari, Rahmawati, and Prasetyo (2025) demonstrated that breakfast habits and adequate nutrient intake are related to learning concentration in elementary school students.

However, the majority of previous studies have examined nutritional status or eating patterns broadly, rather than specifically focusing on appetite as a stand-alone variable (Fajar, 2025; Sartika, 2025). Appetite is an aspect of eating behavior that plays a direct role in determining the amount and frequency of food intake, thus influencing students' nutritional adequacy on a more individual basis. Physical fitness surveys in several elementary schools also indicate that many students are still in the low and very low categories (Hidayat, 2026; Wahid & Kurniawan, 2023), so the issue of physical fitness in elementary school-aged children remains relevant for continued study, including in relation to ongoing nutrition intervention programs such as the MBG.

Conditions at the Prima Cendekia Islamic School Elementary School in Wonoasri Village, Grogol District, Kediri Regency, show significant variations in the appetite levels of upper-grade students regarding the MBG menu, while students' physical fitness levels also vary despite following a regular physical education schedule. The gap between the theory that states nutritional intake affects physical fitness and the actual phenomenon underlies the importance of this research. This study aims to determine the relationship between appetite for the Free Nutritional Meal Program (MBG) and the physical fitness of upper-grade students at the Prima Cendekia Islamic School Elementary School.

2. METHOD

This study used a quantitative approach with a correlational design, as it aimed to determine the relationship between the appetite for the Free Nutritional Meal Program (MBG) and the physical fitness of upper-grade students through objective and structured variable measurements (Sugiyono, 2019). The independent variable (X) in this study was MBG appetite, while the dependent variable (Y) was students' physical fitness (Sugiyono, 2020).

The study population was all upper-grade students (IV, V, and VI) of Prima Cendekia Islamic School, Wonoasri Village, Grogol District, Kediri Regency who participated in the MBG Program, totaling 53 students. Considering the relatively small population, the sampling technique used was saturated sampling, so that all members of the population were sampled. Based on respondent participation during data collection, the number of respondents who participated was 58 students.

The instruments used consisted of two types. First, the MBG appetite questionnaire in the form of a closed Likert-scale questionnaire (Strongly Agree, Agree, Disagree, Strongly Disagree) compiled based on indicators of frequency of eating, portion size, interest in the menu, feeling hungry at mealtimes, and the desire to eat without coercion, with a total of 10 statements. Second, the physical fitness test used the Indonesian Physical Fitness Test (TKJI) for ages 10–12 years, which consists of a 40-meter sprint, hanging elbow bend, sit-up, vertical jump, and a 600-meter medium-distance run. The questionnaire instrument has been tested for validity and reliability before use, while the TKJI has standard validity and reliability as a measuring tool for physical fitness of elementary school-aged children.

Data analysis techniques include descriptive analysis to describe the distribution of appetite and physical fitness scores, analysis of prerequisite tests in the form of Kolmogorov-Smirnov normality tests and linearity tests, and hypothesis testing using the Pearson Product Moment correlation test at a significance level of 5% with the help of the SPSS for Windows version 26.0 program. Interpretation of the correlation coefficient refers to the guidelines of five categories, namely very low (0.00–0.199), low (0.20–0.399), moderate (0.40–0.599), strong (0.60–0.799), and very strong (0.80–1.000).

3. RESULTS AND DISCUSSION

Research result

The study was conducted at the Prima Cendekia Islamic School located in Wonoasri Village, Grogol District, Kediri Regency, involving 58 students in grades IV, V, and VI as respondents. The results of the descriptive analysis showed that the MBG appetite score had an average (mean) of 43.00 with a standard deviation of 14.67, while the physical fitness score had a minimum value of 8, a maximum value of 23, an average of 16.09, and a standard deviation of 4.236. The distribution of students' physical fitness categories is presented in Table 1.

Table 1. Distribution of Students' Physical Fitness Categories

No	Score Range	Category	Frequency	Percentage
1	22–25	Very good	5	8,62%
2	18–21	Good	14	24,13%
3	14–17	Normal	25	43,10%
4	10–13	Not enough	10	17,25%
5	5–9	Less than once	4	6,90%

Based on Table 1, the majority of respondents (43.10%) are in the normal category, while 17.25% are in the less category and 6.90% are in the very less category, so attention is still needed through the habit of physical activity and the implementation of a consistent nutritious diet.

Before conducting the hypothesis test, normality and linearity tests were first conducted. The Kolmogorov-Smirnov test results showed a significance value for the appetite variable of 0.200 and physical fitness of 0.182, both greater than 0.05, indicating a normal distribution of the data. The linearity test results showed a Sig. value for the Deviation from Linearity of 0.467 (>0.05), which indicates a linear relationship between the two variables. Based on these results, the hypothesis test

was continued using the Pearson Product Moment correlation test, with the results presented in Table 2.

Table 2. Results of the Pearson Product Moment Correlation Test

Variables	r count	r table (N=58, $\alpha=5\%$)	Sig. (2-tailed)
MBG Appetite (X) – Physical Fitness (Y)	0,516	0,258	0,000

The results of the correlation test show a calculated r value of 0.516, greater than the r table of 0.258 for N = 58 at a significance level of 5%, with a significance value of $0.000 < 0.05$. Thus, H_0 is rejected, and H_1 is accepted, which means there is a significant relationship between MBG appetite and the physical fitness of upper-class students. Based on the guidelines for interpreting the correlation coefficient, the value of 0.516 is in the moderate category, which indicates a positive direction of the relationship: the better the student's appetite for the MBG menu, the better their physical fitness level.

Discussion

The findings of this study align with the theory that appetite plays a crucial role in determining the quantity and quality of food consumed, which in turn impacts physical condition and health (Almatsier, 2016). Students with a good appetite for the MBG menu tend to consume food more optimally, thus meeting their energy, protein, vitamin, and mineral needs and contributing to improved physical fitness (Giriwijoyo & Sidik, 2012).

These results also reinforce previous research findings that indicate a link between dietary factors and students' physical fitness. Wardoyo and Mahmudiono (2013) found that breakfast habits and adequate nutritional intake were significantly related to elementary school students' concentration, which indirectly impacts children's physical readiness to participate in learning activities. Sahrul Jährir (2025) also found a significant relationship between dietary patterns and the physical fitness levels of vocational high school students, while Putri, Nugroho, and Lestari (2023) demonstrated a relationship between food consumption and nutritional status and physical fitness in pencak silat athletes. These findings are consistent with the results of this study, which demonstrate that aspects of eating behavior, including appetite, play a role in a person's physical fitness.

In the context of the MBG Program, several studies have shown that this program has a positive impact on improving the nutritional status and adequacy of energy intake of elementary school students (Bactiara Putri et al., 2026; Pangaribuan & Siregar, 2022). However, the success of this impact is highly dependent on students' acceptance and appetite for the menu served. The results of this study indicate that the appetite of MBG students at Prima Cendekia Islamic School Elementary School is generally in the fairly good category, but there are still students in the less-than-optimal category who potentially do not receive optimal benefits from the program. This finding aligns with the results of evaluations of MBG programs in other schools that indicated obstacles in menu variety and student acceptance of the food served, thus affecting the overall effectiveness of the program (Eyes & Nadia, 2025).

The physical fitness levels of upper-grade students at Prima Cendekia Islamic School, which are mostly in the normal category, are consistent with survey results at several other elementary schools that also found variations in student physical fitness levels, with some still in the poor category (Hidayat, 2026; Wahid & Kurniawan, 2023). This condition confirms that the physical fitness of elementary school-aged children still requires attention through a combination of adequate nutritional fulfillment and regular physical activity habits (Wardani et al., 2025).

International studies also provide additional support for the importance of nutritional interventions for children's cognitive and physical development. Roberts et al. (2022) found in a systematic review that nutritional interventions contribute to the cognitive development of preschool-aged children, while Rahmawati and Susanto (2020) found a relationship between nutritional status and the academic achievement of elementary school students in Indonesia. These findings strengthen the theoretical basis that meeting nutritional needs, which is also determined by appetite, plays a multidimensional role in students' physical and academic performance.

Overall, the results of this study provide empirical evidence that appetite for the MBG menu is not merely a complementary factor, but rather a crucial variable that contributes to the success of the MBG program in supporting the physical fitness of elementary school students. Therefore, increasing student acceptance of the MBG menu, for example through menu variations and adjusting flavors to suit children's preferences, needs to be a priority for schools and program managers to optimize the benefits of the MBG program for students' physical fitness.

4. CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that there is a significant relationship between the appetite for the Free Nutritional Meal Program (MBG) and the physical fitness of upper-grade students of Prima Cendekia Islamic School Elementary School, Wonoasri Village, Grogol District, Kediri Regency, with an r -value of 0.516 (r -table 0.258; $N = 58$) and a significance of $0.000 < 0.05$ at a moderate correlation level. The condition of students' appetite for the MBG menu is generally in the fairly good category, while the level of physical fitness of most students is in the normal category. These results confirm that increasing students' appetite for the MBG menu contributes to improving the physical fitness of elementary school students. For schools and MBG program managers, it is recommended to increase the variety and acceptability of food menus to optimize students' nutritional intake, while for further researchers, it is recommended to expand the scope of respondents and add other variables such as nutritional status and physical activity simultaneously.

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