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There Is A Relationship Between Nutritional Status And Physical Fitness: A Correlational Study On Elementary School Students

Imam Ibnu Sajjad[1A-E*], Septyaningrum Putri Purwoto[2B-D], Haryo Mukti Widodo[3B-D]

[1,2,3] STKIP PGRI Bangkalan, Jawa Timur, Indonesia

ibnu.margonu@email.com[1*], septyaningrum@stkippgri-bkl.ac.id[2], haryomukti@stkippgri-bkl.ac.id[3]

ABSTRACT

This study is inspired by the crucial role of nutritional well-being as a basis for the physical fitness of elementary-aged children, facilitating their everyday physical activities without undue exhaustion. The objective of this research is to explore the connection between nutritional well-being (BMI/A) and fitness levels in students of the 4th, 5th, and 6th grades at SDI As-Syafa'ah. A quantitative correlational approach was employed, involving a sample of 43 students chosen using purposive sampling. The research tools consist of body measurements (height and weight) to assess nutritional status, along with various physical fitness assessments (sit-ups, hanging, vertical jump, 40-meter dash, and 600-meter run). The data analysis utilized the Pearson Product-Moment correlation test, facilitated by the SPSS software. Findings from the normality test indicated that the dataset followed a normal distribution, with a significance level of 0.802, which is greater than 0.05. The outcome revealed a meaningful positive correlation between nutritional wellbeing and physical fitness, presenting a Pearson Correlation coefficient of 0.869 and a significance level of 0.000, indicating it is less than 0.05. This suggests that a student's nutritional status being more optimal correlates with an enhancement in their physical fitness level.

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INTRODUCTION

Physical fitness is a key indicator for measuring individual health and performance, a crucial aspect of human life, especially for elementary school-aged children. This condition enables students to carry out daily activities effectively without experiencing excessive fatigue. Good physical fitness is essential for students to support learning and play activities, as well as optimal physical growth and development. According to Fauzi et al. (2023), physical fitness is a key indicator for measuring individual health and performance. Physical fitness encompasses various components such as muscle strength, endurance, agility, speed, flexibility, and balance. Children with a good level of physical fitness tend to be more active, healthy, and able to participate effectively in the learning process. Physical fitness is

Imam Ibnu Sajjad[1A-E*], Septyaningrum Putri Purwoto[2B-D], Haryo Mukti Widodo[3B-D]
ibnu.margonu@email.com[1*]

an indicator of human resource quality that is highly expected in every individual as part of the needs of a society that is actively developing. It is crucial for children's motoric development, physical growth, cognitive development, and social development (Rumpoko et al., 2022).

One factor influencing physical fitness is nutritional status. Nutritional status is the condition of the human body resulting from the food and nutrient utilization a person consumes (Puspasari & & Andriani, 2017). Nutritional status is the state of a person's body influenced by nutrient intake and its utilization in the body. Good nutritional status indicates that the body's nutritional needs are optimally met. Conversely, nutritional status that is deficient or excessive can cause growth disorders, decreased immunity, and low physical fitness. Nutritional status has a strong relationship with the level of physical fitness of elementary school students. Students with good nutritional status tend to demonstrate more optimal physical fitness, stronger immunity, and superior physical abilities in carrying out learning activities and sports. School-age children (ages 7 to 12) require more energy because they are involved in greater physical activity, such as playing, exercising, and helping their parents. The 10- to 12-year-old age group has higher energy needs than the 7- to 9-year-old age group due to their accelerated growth, particularly their increase in height (Anggraini et al., 2025). The nutritional intake consumed by children each day, whether in sufficient, insufficient, or excessive amounts, will determine their nutritional status, namely normal, deficient, or excessive nutritional status. This nutritional status plays a significant role in influencing a child's physical condition, such as muscle strength, energy availability, endurance, and heart and lung endurance.

In Indonesia, 20.5 percent and 15.1 percent of children aged 6 to 12 years are classified as stunted and/or very short (short or very short height/age index). Using BMI/A as an indicator, the prevalence of wasting and severe wasting is 7.6% and 4.6%, respectively. As noted, nutritional problems can be caused by past or present nutritional deficiencies (Yani Maidelwita et al., 2025). Regarding the relationship between nutritional status and physical fitness, it is necessary to determine the extent of the relationship between the two variables. This study is expected to provide scientific information regarding the importance of maintaining nutritional status in improving the physical fitness of elementary school students. In addition, the results of this study can also serve as evaluation material for schools and parents in paying attention to students' diet and health. This study has an element of novelty because it directly analyzes the relationship between nutritional status and physical fitness of students at SDI As-Syafa'ah using standardized measurement instruments. It is hoped that the results of this study will provide more objective and relevant information and can be used as a basis for efforts to improve students' health and physical fitness.

Imam Ibnu Sajjad[1A-E*], Septyaningrum Putri Purwoto[2B-D], Haryo Mukti Widodo[3B-D]
ibnu.margonu@email.com[1*]

METHODS

By looking at the connection between the independent and dependent variables, this study used a quantitative method using a descriptive correlational approach. To determine the relationship between variables X and Y, data were acquired at a single moment in time. The study was carried out in East Java Province's Bangkalan Regency, Geger District, at the Islamic elementary school Assyafa'ah Kombangan. The term "population" refers to all individuals, things, or events that are the primary subject of research (Susanto et al., 2024). A sampling technique is any method or technique for collecting samples (Gustiana et al., 2021). Purposive sampling was the method used in this study, and it involves choosing samples from the class based on student characteristics that are related to nutrition and physical well-being. The goal of choosing a sample from a bigger population is to gain useful knowledge about the population by analyzing the sample (Firmansyah et al., 2022). This study will sample 43 pupils between the ages of 10 and 12 from the 4th, 5th, and 6th grades who have good physical fitness and nutrition. A tool used to gather data for a study is called an instrument. A device is any tool that fulfills scholarly standards and may be used to gather information or measure a variable (Sappaile, 2022). Using instruments (TKJI), data were gathered to answer research statements and tests. The Indonesian Physical Fitness Test (TKJI) for the elementary school level and the Body Mass Index (BMI) are among the techniques utilized in this study. The weight and height of participants are measured in order to calculate their BMI. The TKJI, which has been modified to the traits of kids in elementary school, is used to determine the students' degree of physical health. Sit-up tests, hanging tests, vertical jump tests, 40-meter run tests, and 600-meter run tests make up the TKJI's instrumentation. This study's data collection method involved conducting interviews face-to-face in the field of SDI As-Syafa, AH. By asking for a list of students to be evaluated, researchers carried out interviews and observations. Following that, they created instruments and evaluations for live measurements and exams. As data analysis approaches seek to extract conclusions from the research results, they are essential in any study. The Pearson Product-Moment Correlation Test, the Hypothesis Test, the Shapiro-Wilk Normality Test, and other prerequisite tests were among the data analysis methods utilized in this study.

RESULTS AND DISCUSSION

Result

Normality Test

The outcomes of the normality assessment indicate a significance level of 0.802, exceeding 0.05. Hence, one can deduce that the dataset follows a normal distribution.

Correlation Test

According to the findings from the Pearson Product-Moment correlation study, the significance value recorded was 0.000, which is beneath the threshold of 0.05. This implies there is a meaningful association between the students' nutritional conditions and their physical fitness levels at SDI As-Syafa'ah.

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ibnu.margonu@email.com[1*]

Distribution of Nutritional Status Categories And Distribution of Physical Fitness Categories

Table 1.
Nutritional Status

Student Nutritional Status Categories	Category Number of Students
Underweight	10
Normal	25
Overweight	5
Obesity	3
Total	43

Based on the table above, 25 students are in the normal nutritional status category.

Table 2.
Physical Fitness

Physical Fitness	Category Number of Students
Poor	7
Moderate	20
Good	10
Very Good	6
Total	**43**

Table 2 shows that the majority of students have a physical fitness level in the moderate category of 20 students. Based on the results obtained, there is a significant relationship between student nutritional status and physical fitness, and this is supported by the results that the majority of students have normal student nutritional status and moderate physical fitness.

Discussion

The results of the study showed a significant relationship between nutritional status and physical fitness levels of students at As-Syafa'ah Elementary School. The correlation coefficient of 0.869 indicates a very strong relationship between the two variables. Therefore, the better a student's nutritional status, the higher their physical fitness level. Optimal nutritional status positively impacts students' physical abilities. Students who receive adequate nutritional intake tend to have sufficient energy to carry out various activities, both in the learning process and in sports. Conversely, students with poor nutritional status generally have lower endurance and fatigue more easily. This study's findings align with those of Hidayat et al. (2024), which stated that nutritional status contributes 82.81% to physical fitness. (Research by Ridho et al., 2024), also showed a significant relationship between nutritional status and physical fitness, with a moderate correlation. In this study, the majority of students were in the normal nutritional status category with moderate to good physical fitness levels. This indicates that students with normal nutritional status tend to demonstrate better physical abilities than students with undernutrition or obesity. Nutritional status is influenced by various factors, including dietary patterns, physical activity, family environment, and parental understanding of nutrition. Elementary school-aged children require a balanced

nutritional intake that includes carbohydrates, protein, fat, vitamins, minerals, and water to support growth and daily physical activity. Furthermore, physical activity plays a crucial role in improving physical fitness. Students who exercise regularly generally have better endurance, muscle strength, and lung capacity. Therefore, schools need to focus on sports development and education about the importance of nutrition for students. This study also found that there are still students who are underweight or obese. This condition requires special attention because it can impact students' health and physical abilities. Therefore, nutrition education programs, healthy lifestyle habits, and regular sports activities need to be implemented continuously. In general, the research results demonstrate that nutritional status plays a crucial role in supporting the physical fitness of elementary school students. Fulfilling good nutritional needs will help students grow and develop optimally and have a healthy and fit physical condition.

CONCLUSION

Based on the findings and analyses that have been presented, it can be concluded that a significant relationship exists between nutritional status and physical fitness. Therefore, the research hypothesis (H1) is accepted, while the null hypothesis (H0) is rejected.

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Imam Ibnu Sajjad[1A-E*], Septyaningrum Putri Purwoto[2B-D], Haryo Mukti Widodo[3B-D]
ibnu.margonu@email.com[1*]

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