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Age 6-9 Years: Nutritional Status on Children's Physical Fitness

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Abstract

This study aimed to determine whether there is a relationship between children's nutritional status and physical fitness. This quantitative research with a correlational design aims to link two or more variables. The instrument used to measure the nutritional status of children is the maximum physical fitness index (BMI) and the Indonesian physical fitness test (TKJI). The results of the data were analyzed using the SPSS application. The results of the descriptive analysis of the nutrition variable had the lowest score of 13.3 and the highest score of 19.2, with an average value of 18.8. In contrast, the TKJI variable had the lowest score of 13 and the highest of 19, with an average of 1.9. The significant matter from the research data and analysis is $0.002 < 0.05$. Thus, it means a relationship between nutritional status and physical fitness with the meaning of H^1 received.

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INTRODUCTION

Physical fitness is one of the things that every individual expects because with physical fitness a person will perform optimally and confidently (Wahyuni Ulpi, Nurwahidin Hakim, 2022; Ramadan et al., 2020). Physical fitness is a person's ability to complete a specific task or physical activity without getting tired; many children at school are physically weak and tired when participating in activities. Students must be physically fit to participate in learning activities and ensure they are not sick or tired while studying. Physical fitness is a need that every human being must fulfill to carry out daily activities as well as possible; in other words, physical fitness is the body's ability to carry out activities without experiencing excessive fatigue. The term physical fitness has a meaning that is no different from the physical aspects of total fitness. Alternatively, what is physical fitness (Forms et al., 2020)? Someone with good physical fitness can be interpreted as having enough ability to do his job efficiently without causing significant fatigue, so he still has energy left to fill his spare time and other sudden tasks. It can also be said that a good level of physical fitness gives a person the ability to lead a productive life and adapt to many loads. Parents and schools are responsible for ensuring that students have a balanced diet.(Idham et al., 2022). Physical fitness is the goal of one of the implementations of sports and health physical education subjects, physical fitness functions as an integrated component of the broader education system, focusing on

developing moral behavior, mental and emotional stability, and social and emotional abilities through activities physique.(Judge & Hidayat, 2020). Physical fitness is the basis for carrying out an activity and teaching, so it needs to be improved, especially in early childhood, aged 6-9 years(Hakim et al., 2022). In carrying out activities, the higher the physical fitness, the easier it is to carry out activities(Ade Evriansyah Lubis, 2020). Vice versa, the worse the physical fitness, the more difficult it is to do activities.(Syaleh et al., 2019).Physical education is the contribution of the education program in general, primarily through movement experiences, to ensure the growth and development of children. Physical education is integral to education through movement experiences that encourage physical abilities, motor skills, cognitive development, social-emotional and spiritual development. An effective physical education process will accelerate physical education goals that have been designed such as physical development, movement development, movement skills, cognitive and affective development, social development, and emotional development. The development of motion is one of the essential parts of the goal of implementing physical education(Nugraha, 2015).

Food intake is all forms of food that are digested by the digestive system. With proper food intake, consuming the right food, such as consuming very large amounts of food, high in fat, excessive carbohydrates, and low in fiber, but not balanced with balanced energy expenditure, causes overweight or overweight cases. Body (Hita et al., 2020). In general,

nutritional status is critical to determine health and balance between physical and mental growth. Factors related to physical fitness, in general, can be broken down into various categories, including Heredity[1], Regular exercise[2], Gender[3], Age [4], Diet [5], rest [6], activity [7], and many other factors(Muliani, 2020). The child's weight and height are used to determine nutritional status, namely the balance of nutrients needed by the child's body. (1 & Dary 2, 2022). Nutritional status is a global problem; inadequate nutrition can cause abnormalities in the growth and development of children (Dewi et al., 2022). Nutritional status is the quality of future human resources(Rahadiyanti et al., 2022). Nutritional status has four groups, including poor nutrition, undernutrition, good nutrition, and excess nutrition, which describes the state of the body due to the use of nutrients and food consumption(Adi et al., 2019). Nutrition for early childhood is a critical factor in encouraging the growth and development of children in the future (Widiastiwi et al., 2022).

Based on the Constitution, children aged 6 to 9 years are still included in the PAUD category (Children & Years, 2019). School age is an age that requires more concern regarding nutrition and health. At this Age, children can consume the food and drink choices they want. (Hanim et al., 2022). School-age children are involved in various mental and physical activities, including playing, learning, and exercising. The nutrients offered will help improve the body's health so that the immune system can mature adequately and prevent disease. (1 & Dary 2, 2022). Consuming foods

that offer nutrients is also needed by the body to maintain physical health. However, if a person's level of physical fitness is low, they are likely eating foods that need more nutrients. (Patten & Newhart, 2018). The process of child growth and development is greatly influenced by excess nutrition, especially in emotional psychology. This increases the risk of degenerative and metabolic disorders and the possibility of becoming obese as an adult (Ramadan & Ningrum, 2019; Safitri et al., 2022).The main nutritional problems in Indonesia consist of fundamental nutritional problems, namely Protein Energy Deficiency (KEP), Vitamin A Deficiency (KVA), Disorders Due to Iodine Deficiency (IDD), and Iron Nutrition Anemia (AGB), in addition to excess nutrition (obesity). Indonesia is currently experiencing two nutritional problems at the same time or better known as the multiple nutrition problem. Handling nutrition problems is closely related to a nation's strategy for creating healthy, intelligent, and productive human resources. Efforts to improve quality human resources begin with handling the growth of children as part of a family with good nutrition and care (Pawitra et al., 2019).

Malnutrition, especially in the nutritionally vulnerable age group, can cause failure to thrive and increase mortality and morbidity (Novela & Kartika, 2019). Malnutrition can increase the risk of infectious diseases, slow down growth and development, and reduce the level of intelligence, both undernutrition and overnutrition can disrupt the process of child growth and development

(Novianti & Utami, 2021). If left untreated, malnutrition can lead to death, disability, and stunted physical growth, and ultimately disrupt the country's socio-economic development. (Riaz et al., 2021)

Direct and indirect factors significantly affect children; direct factors include lack of culinary intake, as well as infectious diseases, while indirect factors are parents' income, food availability at the place of residence, Diet, environmental sanitation, health services, parents' occupation, and knowledge that ultimately susceptible to infectious diseases. (Rahmasari et al., 2022). Furthermore, birth spacing that is too close also affects the nutritional status of children. (Herlambang et al., 2021). Factors that work with physical fitness can generally be broken down into various categories, including Heredity, Regular exercise, Gender, Age, Diet, Rest, physical activity, and many other factors (1 & Dary 2, 2022).

Improvements in nutrition are needed starting from pregnancy, infants and toddlers, preschoolers, elementary school-age children, adolescents, and adults, to old Age. Elementary school children are a strategic target in improving community nutrition because during childhood the functions of the brain organs begin to form steadily. Hence, the development of intelligence is relatively rapid. Elementary School Children (SD) are children aged 6-12 years (Seprianty et al., 2015). Nutritional problems cannot be handled through short-term and sectoral policies and programs, let alone only from a food perspective. Nutritional problems must be addressed immediately by

implementing appropriate nutrition policies. (Ernawati et al., 2019). Stunted nutrition in children is a health sector problem and a multisector problem. (Adam & Medong, 2022).

One factor affecting a person's nutrition is a lack of knowledge about nutrition. This reduced knowledge will also reduce a person's daily ability to apply nutritional information. One way to increase someone's knowledge is by providing nutrition education as early as possible. Nutrition education can be provided to school children through counseling, posters, leaflets, or booklets (Rahadiyanti et al., 2022). Nutrition education for anemic children in elementary schools is given with the hope that the child's nutritional knowledge and the eating pattern will change so that the child's food intake, especially iron intake, will be better. With better iron intake, the child's hemoglobin level will increase (Novian, 2013)

METHODS

This type of research uses quantitative research, which applies methods for direct data collection (Ramadan & Juniarti, 2020; Hardiansyah & Syampurma, 2017). Quantitative research uses SPSS data management. Quantitative research aims to generalize research findings so that they can be used to predict the same situation in other populations. Quantitative research also explains the causal relationship between the variables studied. Quantitative research begins with theories and hypotheses. Researchers use manipulation techniques and control variables through formal instruments to see causality interactions (Abdullah, 2015)

The sample is a small part of the population, and the sampling or data source is done purposively and snowballed. The subjects of this study consisted of 10 children, including five children and five girls. This research was conducted in the sub-district of Bua, Luwu Regency. In this study, the nutritional status of children was analyzed for physical fitness. Using Body Mass Index (BMI) measurements while the data collection mechanism on the level of physical fitness of students uses the Indonesian Physical Fitness Test (TKJI) for the age range of 6-9 years, the test items include running 30 meters, pull-ups (hanging elbows), vertical jump, (jump straight), sit up (get up sitting) and run 600 meters, the instrument used is a height measuring meter, weight scales, stopwatch. What will happen in the research

will be analyzed using the relationship and correlation analysis techniques and the percentage analysis technique to see illustrations of data, in general, using the SPSS application (Saparia et al., 2022). Correlation is a reciprocal or causal relationship. In other words, that correlation is to see how much a child's nutritional status relates to physical fitness. Hence, the data analysis process requires critical thinking because it will produce accurate data and can be used as a reference for further research. Data analysis descriptive Analysis Finding the average or Mean of Variable X and Variable Y is the process of processing data to find helpful information that can be used to make decisions to solve a problem.

No	Total Value	Classification
1	22–25	Excellent
2	18 – 21	Good
3	14 – 17	Fairly Good
4	10 – 13	Bad
5	5 – 9	Very Bad

Source :(Mashuri & Pasaribu, 2019)

FINDINGS AND DISCUSSION

The research results are then analyzed using descriptive analysis to discover an

overview of students' abilities on the two test items carried out: the body mass index test and the physical fitness test (TKJI). The research results can be seen in the following table:

Table 1. Analysis of Frequency Distribution of Physical Freshness Test Results for Children Aged 6-9 Years.

Category	Frequency	Percentage
Excellent	0	0%
Good	2	20%
Fairly Good	8	80%
Bad	0	0%
Very Bad	0	0%
Total	10	100%

The data results from each item of the physical fitness test after categorization, which was then carried out by percentage analysis, found that out of 10 samples, most were in the "Fairly Good" category. Namely 80% or as many as eight children, and the "good" category was only 20%. The results of measuring the

nutritional status of children were then analyzed using the body mass index (BMI) formula; the results of 10 children were mainly in the "normal" nutrition category, namely nine people or 90% of the total sample, while the rest were in the overweight category. Or overnutrition, namely one student or 10%.

Table 2. Frequency of Distribution Analysis of Children's Nutritional Status Measurement Results.

CATEGORY	FREQUENCY	PERCENTAGE
Malnutrition (thin)	0	0%
Good nutrition (normal)	9	90%
Overnutrition (overweight)	1	10%
Obesity (>+2SD)	0	0%
TOTAL	10	100%

Based on descriptive analysis with a sample of 10 consisting of 5 boys and five girls In the table above, it can be seen that the nutrition variable has the lowest score of 13.3 and the highest score of 19.2 with an average

score of 15.8 and a standard deviation (level of data distribution) 1.90. The TKJI variable has the lowest score of 13 and the highest score of 19, with an average value of 15 with a standard deviation of 1.

Statistics

		nutrition	TKJI
N	Valid	10	10
	missing	0	0
Means		16,160	15.50
Median		15,800	15.00
std. Deviation		1.9062	1,958
Range		5,9	6
Minimum		13,3	13
Maximum		19,2	19
sum		161.6	155

In column B's table coefficients, the constant (a) is 1.566, while the trust value (b) is 0.862. Thus, the regression equation is $Y=a + bX$ or $1.566 + 0.862$ with a significant value of 0.002. So there is a relationship between nutritional status and physical fitness because the significance value is <0.05 , meaning H_1 is accepted.

DISCUSSION

1. Categories of nutritional status in children aged 6-9 years.

The description of the Nutritional Status of Children shows that the highest percentage of Nutritional Status is in the (Normal) category of 9 people 90% while the rest are in the Over Weight or Overnutrition category, which only one person or 10% of School-age children need more concern in terms of Nutrition and Health, at the Age of 6-9 years children have been able to consume the food and drink choices they want. This is supported by research (Ramadan, 2022; Ferida, 2012)said that nutritional status affects children's physical fitness.

Nutritional status in the "Normal" category indicates that most respondents have a sufficient intake of nutrients entering the child's body. This is in line with using research at SD N Batur 2 and SDN Tuguran Nogotirto using a sample of 100 children with the (Normal) category of 73%; this shows that the balance of food intake dramatically influences the growth of children, especially elementary school children, this growth will significantly

affect to enter the next stage(Haryana et al., 2020)

Children classified as Nutrition (Normal) at SDN Sumber Sekar 1 Kec. The Dau City of Malang gets a percentage of 60%, and 12 children included in the Nutrition criteria (thin) get a percentage of 34%, with a sampling technique that is purposive sampling(Wahyudi et al., 2017)

This study explains that the results of examining the nutritional status of students at SDN 1 Piton used the Body Max Index (BMI) where 60 respondents, 27 respondents with a percentage of 45% were nutrition (fat), and 33 respondents were undernourished (thin) with a percentage of 55%.(Zahra et al., 2020).

2. Physical fitness test category.

The description of the child's Physical Fitness test shows that the percentage of the physical fitness test is "Excellent." There are no students in the achievement or 0%, the category "Good" is 20%, the category "Moderate" is 80% or as many as eight people, the category "Less" is 0%, category "Not very much" is 0%.

Achievement of physical fitness results at SDN Pahrubuh 1 and MI Mambaul Hikam, Kediri District, Semen District, Kediri Regency, the highest score was in the "Medium" category of 11 students; nine students achieved the "Less" category, the "Good" category was achieved by two students in the "Less" category. Once" was achieved by 2 students, and in the "very good" category, no

students reached that category. (Wirnantika et al., 2017)

Physical fitness in children is not only determined by nutritional status but in physical activity according to measurements of the level of physical fitness providing daily activities and can affect the quality of Physical Fitness. Students' physical fitness can be predicted through physical activity measured using a physical fitness test. The better the child's physical activity, the higher the child's physical fitness.

3. Relationship between nutritional status of children aged 6-9 years to physical fitness

The SPSS test has been carried out to see the relationship between children's nutritional status and physical fitness research data. The analysis carried out concluded that the significant value was $0.002 < 0.05$, so it can be said that there is a relationship between nutritional status and physical fitness, meaning that H1 is accepted and H0 is rejected, which means there is a relationship between nutritional status and physical fitness of children aged 6-9 years.

CONCLUSION

The results of the research and discussion show that 90% of children are generally seen from the nutritional status in the (Fairly Good) category and 80% in the physical fitness test are in the (Good) category. In addition, there is a significant relationship between nutritional status and physical fitness. Physical fitness status can be supported by

balanced nutritional intake. It has been proven that nutritional status works the same as physical fitness. Balanced nutritional status impacts physical fitness and eating patterns, and improper nutritional intake will cause nutritional problems in children. It was found that factors influencing the attainment of nutritional status included parents' income, nutrition knowledge, individual illnesses, and physical growth.

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