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The Relationship Between Nutritional Status And Learning Achievement Of Students At State Elementary School (SDN) 01 Linggapura, Tonjong District, Brebes Regency

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Abstract. Nutritional status is a measure of success in fulfilling nutrition for children whose indications are body weight and height. The aim of this research is to determine the relationship between nutritional fulfillment and learning achievement among students at Linggapura 01 state elementary school, Tonjong District, Brebes Regency. The research method used was observational with a cross sectional study design . This research analyzes the relationship between nutritional fulfillment and learning achievement at Linggapura 01 State elementary school. From the results of statistical testing using the *chi Square statistical test, the p-value = 0.000* is obtained , which means it is smaller than the value α = 0.05. So it can be concluded that Ho is rejected, meaning there is a relationship between nutritional status and student learning achievement at State elementary school (SDN) 01 Linggapura, Tonjong, Brebes Regency. In connection with the results of this research, it is hoped that parents should pay attention to the nutritional status and adequate nutritional intake of their sons and daughters for the smooth running of their learning activities.

Keywords : Nutritional Status, Learning Achievement, Elementary School Students

INTRODUCTION

Groups of school children generally have better nutritional conditions than groups of toddlers, because the school age group is easily reached by various efforts to improve nutrition carried out by the government and private groups. However, there are still various unsatisfactory nutritional conditions for school children, for example being underweight (Pratiwi, 2010).

Nutrition is a process by which organisms use food that is consumed normally through the processes of digestion, absorption, transportation, storage, metabolism and excretion of substances that are not used to maintain life, growth and normal function of organs, as well as producing energy (Fidya rsih, 2019).

Nutritional status is a measure of a person's body condition as seen from the food consumed and the use of food nutrients in the body. Nutritional status is divided into three categories, namely undernutrition status, normal nutritional status and overnutrition (Warsito, 2013).

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Children's nutritional status, as a reflection of nutritional adequacy, is an important benchmark for assessing their growth and health status. Nutritional status is a measure of success in fulfilling nutrition for children whose indications are body weight and height. Data from the World Health Organization (WHO) in 2011 reported that there were 95.2 million children or around 14.3%, the prevalence of underweight nutritional status in children in the world. Basic Health Research Data (Riskesdas) in 2018 explains the percentage of nutritional status in Indonesia with the BMI/U indicator for the very thin category at 2.4%, underweight 6.8 % (Dinkes, 2018).

Between 6 and 12 years old is the age of children who are in elementary school. At this age children are more active, both at school and outside school, so children need more energy. Poor nutrition in children will cause failure in physical growth and intelligence development and can reduce body resistance (Meilita, 2019). This disorder can reduce learning potential, endurance, and work productivity and ultimately impact children's learning achievement (Pratiwi , 2010).

The effect of food on brain development, if food does not contain enough nutrients needed, and this situation lasts for a long time, will cause changes in metabolism in the brain, resulting in an inability to function normally. In more severe and chronic conditions, malnutrition causes impaired body growth, a smaller body followed by a smaller brain size. The number of cells in the brain decreases and there is immaturity and imperfection of biochemical organization in the brain. This situation influences the development of children's intelligence (Anwar, 2015).

Research conducted by Rizki et al (2017), states that there is a relationship between nutritional status and the learning outcomes of class 1 students at SD Negeri 5 Banda Aceh. Supported by research conducted by Pratiwi (2010), it is stated that there is a relationship between nutritional status using the BB/TB index and student learning achievement (Rizki, 2017).

From the results of the initial data collection of students at SDN 01 Linggapura, Tonjong District, Brebes Regency, it turns out that there are still student learning achievements below the average score of 7.00, namely 40% and 15% of students who are malnourished. For this reason, the author is interested in conducting research on "the relationship between nutritional fulfillment and learning achievement among students at State elementary school (SDN) 01 Linggapura, Tonjong, Brebes Regency".

RESEARCH METHODS

The research method used was observational with a *cross sectional study design* (Waryana, 2010). This research aims to find the relationship between nutritional status and student achievement at State elementary school (SDN) 01 Linggapura, Tonjong, Brebes Regency The population in this study were students of SDN 01 Linggapura grades 4, 5, 6, namely 75 people. The sample is part of the population to be studied or a portion of the characteristics possessed by the population (Waryana, 2010). The sample was determined by total sampling, namely 75 people

RESULTS AND DISCUSSION

This research was conducted at State Elementary School (SDN) 01 Linggapura, Tonjong District, Brebes Regency for 10 days from 2 to 12 February 2022. The sample size studied was 75 respondents who met the inclusion criteria. Primary data is taken by measuring height (TB) and weight (BB) and secondary data is to see learning achievement through report cards. From the results of the data processing carried out, the following will present univariate and bivariate analysis.

Univariate analysis was carried out on each research variable to produce the distribution and percentage of each variable, namely as follows :

1. Respondent Characteristics

a. Gender

Table 1. Frequency distribution of respondents based on gender

Gender	frequency	percentage
	(f)	(%)
Man	37	49.3
Woman	38	50.7
Amount	75	100

Based on table 1, it shows that of the 75 respondents, the respondents who were female were 38 students (50.7%) while the respondents who were male were 37 students (49.3%).

b. Nutritional status

Table 2. Frequency distribution of respondents based on nutritional status

Nutritional status	frequency	percentage
	(f)	(%)
Normal	56	74.7
Abnormal	19	25.3
Amount	75	100

Based on table 2, it shows that of the 75 respondents, some of the respondents had nutritional status in the normal range as many as 56 students (74.4%) while those whose nutritional status was in the abnormal range were 19 students (25.3%).

c. Learning achievement

Table 3. Frequency distribution of respondents based on learning achievement

Learning achievement	frequency	percentage
	(f)	(%)
Not enough	18	76.0
Good	57	24.0
Amount	75	100

Based on table 3, it shows that of the 75 respondents, the majority of respondents' learning achievement was good, namely 57 students (76%) while 18 students (24%) had poor learning achievement.

Bivariate analysis is presented in the form of a cross table *(Crosstab)* between the independent variable, namely nutritional status, and the dependent variable, namely learning achievement at State elementary school (SDN) 01 Linggapura, Tonjong, Brebes Regency Bivariate analysis is used to analyze the relationship between the independent variable and the dependent variable using the *Chi-square statistical test* with a significance level of $\alpha < 0.05$.

Table 4. Relationship between nutritional status and student learning achievement

Nutritional status	Learning achievement						*p-value*
	Not enough		Good		Amount		
	N	%	N	%	N	%	
Normal	7	9.3	49	65.3	56	71.9	
Abnormal	11	14.7	8	10.7	19	28.1	0.0 2
Amount	18	24.0	57	76.0	75	100	

From the results of statistical testing using the *chi S quare statistical test, the p- value = 0.000* is obtained , which means it is smaller than the value $\alpha = 0.05$. So it can be concluded

that H0 $_{is}$ rejected, meaning there is a relationship between nutritional status and student learning achievement at State elementary school (SDN) 01 Linggapura, Tonjong, Brebes Regency.

The results of the research show that of the 75 respondents, some of the respondents had nutritional status in the normal range as many as 56 students (74.4%) while those with nutritional status in the abnormal range were 19 students (25.3%). In this study, nutritional status was obtained by anthropometric measurements, namely body weight and height expressed in Body Mass Index (BMI), which is one manifestation of a person's health status.

A person who is healthy and has good nutritional status has good thinking power and physical activity so that this will support his learning achievements . This is in accordance with the theory put forward by Anas (2011) in Styawati (2013), stating that poor nutrition that occurs in young children results in children suffering mentally, having difficulty concentrating, having low self-esteem and lower learning achievement. It turns out that children who are malnourished have lower learning abilities than children who are not malnourished, they get tired easily, fall asleep easily and find it difficult to learn lessons (Styawati, 2013).

Supported by research conducted by Fauzi (2019), states that physiological conditions in the form of malnutrition affect a good learning process. Good nutritional status occurs when the body obtains nutrients in sufficient quantities and is used efficiently to enable physical growth, brain development, work ability and general health at the highest possible level. Optimal nutrition will play an important role during the school period in supporting children's performance and capacity in the learning process which is related to student achievement (Fauzi, 2019).

Learning achievement can be interpreted as the level of success of students in studying subject matter at school which is expressed in the scores obtained from test results regarding a number of certain subject matter (Susanto, Ahmad. 2012). Factors that influence learning achievement can come from within oneself (internal) as well as factors from outside (external) of a person. Internal factors include physiological factors including nutritional status which are related to food intake and general health (Pengamanan, 2020).

In the bivariate analysis, good nutritional status is one of the determining factors for a person's success because it is related to students' smooth implementation of learning activities at school. Children at this age must really get good nutrition so they can train and develop more perfectly. Poor nutrition in a child's first years can result in poor focus, memory and learning abilities. This affects achievement at school which indirectly hinders early brain development and directly makes children become lethargic and unfocused in class (Tursinawati, 2017).

From the results of statistical testing using the *chi S quare statistical test, the p-value = 0.000* is obtained , which means it is smaller than the value α = 0.05. So it can be concluded that H0 is rejected, meaning there is a relationship between nutritional status and student learning achievement at SDN 01 Linggapura Tonjong, Brebes Regency. Researchers assume that the better a child's nutritional status, the better his academic achievement will be, and the lower a child's nutritional status, the lower his academic achievement will also be.

This is in accordance with research conducted by Alam et al (2020), stating that the relationship between nutritional status and the academic achievement of grade 5 elementary school children in Bengo District, Bone Regency has a value of p=0.032. This is strengthened by research conducted by Tursinawati (2017), stating that there is a relationship between nutritional status and the learning outcomes of grade 1 students at SD Negeri 5 Banda Aceh (Alam et al , 2020).

Children who are malnourished will become physically weak and their health condition can be disrupted, where the child will become less enthusiastic and unfocused in learning. This will make children experience difficulties in participating in teaching and learning activities and will affect learning achievement or the final results of the learning process at school within a certain time (Pangemanan et al, 2020).

CONCLUSION AND RECOMMENDATIONS

Based on the results of research conducted at State Elementary School (SDN) 01 Linggapura Tonjong, Brebes Regency, the researchers concluded that there was a relationship between nutritional status and student learning achievement at State elementary school (SDN) 01 Linggapura, Tonjong, Brebes Regency. The recommendations for Health Institutions (Puskesmas) there is a need for a nutrition monitoring program for school children through UKS, so that schools can provide early information and can immediately take action to prevent nutritional problems. For researchers it is recommended to research and evaluate other factors that can influence learning achievement, such as children's psychological factors (intelligence, attitudes, motivation, talents and interests) and family factors (parents' parenting patterns, parents' education, economic status). In connection with the results of this research, it is hoped that parents should pay attention to the nutritional status and adequate nutritional intake of their sons and daughters for the smooth running of their learning activities.

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