

## **THE CORRELATION BETWEEN BREAKFAST HABITS AND NUTRITIONAL STATUS OF STUDENTS**

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### **ABSTRACT**

Children are next generation of the nation. In Indonesia, school age ranges from 6-12 years. Problems with school-age children Most people pay attention to nutritional status. Especially the issue of nutritional status. The results of the 2018 Basic Health Research Report (Riskesdas) owned 3.5% of very thin children, 6.7% thin children and 8% fat children. Nutritional status due to several factors including breakfast.

This study aims to study the correlation of breakfast with nutritional status in school children MI Asyasyukur Bogor District in 2019. This type of research is a quantitative research with descriptive analytic design with cross sectional research. The population in this study was 218 respondents. How to take the sample in this study with a simple random sampling technique with a sample size of 109 respondents. Collection list obtained through a checklist. Analysis of the data used is univariate and bivariate (Kendall Tau).

Based on the frequency of breakfast habits as many as 81 (74.3%) of respondents have good breakfast habits. Based on nutritional status, 80 (73.4%) respondents had good nutritional status. Of 109 respondents there were 75 (68.8%) respondents who had breakfast habits with good nutritional status. The results of bivariate analysis using the Kendall Tau analysis test obtained p value of  $0,000 \leq 0.05$  (alpha) so that  $H_a$  is accepted and  $H_0$  is rejected. In correlation between breakfast habits and nutritional status of students MI Asyasyukur Bogor District in 2019. Habits breakfast good will do not nutrition good, including habits breakfast less than good will have nutritional status of less good. Research can used as a guide to give the science habits breakfast habits breakfast with the status nutrition. That would give either sense for all students in MI Asyasyukur Bogor district for status nutrition.

Keywords : breakfast habits, nutritional status

### **INTRODUCTION**

Children are the nation's next generation. These children will become the nation's investment in the future. The quality of a nation can be seen from the quality of its own children. Thus, the need for special attention to the development of children, especially at school age. School age ranges from 6 years to 12 years. At this school age, children's development is influenced by various factors, one of which is the child's nutritional needs.<sup>1</sup> At school age, children experience optimal growth and development, but tend to slow down compared to when they are infantile, such as experiencing an increase in height and weight.<sup>2</sup> Towards the end of school age, boys and girls will experience an increase in body size and usually girls will be taller than boys. All of these things can go well, if children's nutrition can be fulfilled properly too.<sup>3</sup>

Problems with school-age children, especially issues of nutritional status, need attention from various parties, especially parents. School-age children really need parental attention, especially in meeting their daily nutritional needs.<sup>4</sup> Problems related to nutrition tend to be high. There are still 3% of school-age children who have severe vitamin A

deficiency, and around 16.2% of school-age children who are malnourished. It was explained that there are still 37% of school age children who are malnourished and as many as 87.67% have insufficient calcium intake.<sup>5</sup>

Recently, the most common problem among school-age children is malnutrition, including the problem of poor nutritional status. Based on the results of research conducted in 76 countries, the problem of school-age children with malnutrition and wasting is the most prominent problem in Southeast Asia and Africa, while in America there are only less than 10% of children with malnutrition and underweight.<sup>6</sup> In Africa, the problem of school children with malnutrition reached 31.9%.<sup>6</sup> In Indonesia alone, the problem of malnutrition in children consists of stunting with a prevalence of 42.6%, and malnutrition (very thin and underweight children) which has a prevalence of 14.4%. In West Java, there are nearly 11.5% children with very short problems, and 19.3% with short problems. In addition, problems related to nutrition in the West Java region are children with very thin problems, which are around 3.5%, children with thin problems, which are around 6.7% and with obese children, about 8% of the total population in West Java.<sup>7</sup>

Nutritional problems in this case nutritional status are also closely related to the pattern of food intake in children, one of which is breakfast. The 2017 Sulaksa study entitled *"The Relationship between Breakfast Nutritional Intake and Physical Fitness Levels of Class IV, V, and VI Students at SD Negeri 2 Wates, Wates District, Kulonprogo Regency"* Nutritional intake of breakfast contributed 47% to the physical fitness level of grade IV, V students, VI at SD Negeri 2 Wates, Wates District, Kulonprogo Regency. Subsequent research by Lutfiani 2015 *"The relationship between nutritional status and breakfast habits with children's learning achievement at SD Negeri Tlogosari Kulon 09 Semarang"* states that there is a relationship between breakfast habits and learning achievement.

The high level of nutrition problems in Indonesia needs special attention because it will have a negative impact on children's growth and development. A person with malnutrition will experience a slowdown in growth and development, even allowing for growth failure. If the problem of malnutrition is allowed to drag on, it will have an impact on the quality of the country itself. Most of the expenditure will be spent only on nutritional problems that could have been prevented as early as possible.<sup>1</sup>

Nutritional status is the interpretation of data obtained using a variety of methods to identify populations or individuals at risk or with poor nutritional status.<sup>10</sup> Nutritional status is an expression of the balance of a certain variable. Food consumed every day has an influence on a person's nutritional status. Thus, nutritional status can be concluded as a term that refers to the state of the body due to the consumption of nutrients.<sup>8</sup>

There are two factors that influence nutritional status, namely direct and indirect causes. The direct causes are child food and infectious diseases. The emergence of KEP (Protein Energy Deficiency) is not only caused by lack of food consumption but also caused by disease. Children who get enough food but often suffer from diarrhea or fever can suffer from KEP. Children who don't have enough food, weaken their immune system, are prone to infection, lack of appetite and finally KEP. The indirect cause that affects nutritional status is food security in the family such as providing breakfast, childcare patterns and health services and environmental sanitation.<sup>9</sup>

Fulfilling nutritional needs is one form of application of Maslow's Hierarchy of Needs Theory. Maslow in his theory states that there are 6 basic human needs including physiological needs, safety and security, love and being loved, self-esteem and self-actualization and the need for self-transcendence which Maslow added towards the end of his life. Physiological needs are the most basic needs that must be achieved. One of the fulfillment of physiological needs is nutrition related to breakfast habits to support good nutritional status.<sup>10</sup>

Behavior can be defined as a response or reaction from an individual to stimuli or the environment. Human behavior can be defined as human activity that can be observed directly or by outsiders. Breakfast which in English gives *breakfast*, comes from the words *break* and *fast*. Breakfast has the meaning to re-feed the body after the body is not fed during sleep throughout the night. The Ministry of Health of the Republic of Indonesia 2010 defines breakfast or breakfast as an activity to consume food in the morning before the activity, which consists of staple foods and side dishes or in the form of snack foods. Breakfast is very important for everyone, because breakfast is not just a stomach booster, but also provides energy for children to do activities. Breakfast is able to restore the body's metabolic function, after fasting all night. Morning meal or breakfast is considered very important and should not be missed. This is because breakfast can help to refuel the body, provide energy and provide a great opportunity to start daily activities with a sufficient nutritional boost.<sup>11</sup>

The problem that causes children to not have breakfast habits is the child's appetite, where children usually don't want to eat in the morning. Furthermore, there is no time due to getting up late or not having breakfast available, and there is no appetite in the morning and the fear of being fat.<sup>12</sup>

Several studies have shown that breakfast habits are related to blood glucose levels in the morning which have an impact on children's learning concentration at school. This study showed that the average glucose level of school-age children who did not eat breakfast before going to school was lower than that of students who ate breakfast, where this glucose level ultimately affected the student's learning concentration in school. Students who eat breakfast and have a higher glucose level have a higher concentration of learning than those who don't eat breakfast.<sup>12</sup>

Similar studies have also been conducted in several other countries. The same thing is shown in the results of the study. Chitra & Reddy's 2010 research stated that breakfast habits have an effect on increasing the nutritional intake of school children. The 2012 Kleinman research proves that there is a relationship between breakfast and the fullness of nutritional intake on children's academic achievement in school. Thus it can be concluded that the habit of breakfast for school age children is important because it affects achievement, learning performance and nutritional status of school age children.

The relationship between breakfast habits and nutritional status is an effort to improve or maintain a good nutritional status, namely by getting breakfast used to. Skipping breakfast will cause a decrease in the brain's ability to concentrate on learning which is then followed by a decrease in the ability of other body functions which will interfere with the physical and cognitive development of children so that if it occurs continuously it will affect nutritional status.

MI Asy Syukur is one of the schools in West Java province, precisely in Bogor Regency, which is in the Cijeruk sub-district, Warung Menteng Village. The socio-economic abilities of children at MI Asy Syukur are very diverse and the income ranges of parents also tend to be religious. The ability of parents to fulfill nutrition in children allows to improve nutritional status in children and fulfillment of breakfast. However, based on the results of observations that have been made, there are still many students at MI Asy Syukur who are fat and thin, buy breakfast at school, snack food and drinks that do not fill them up every morning, and some even skip breakfast.

Based on the results of a preliminary study conducted on July 29 2019 at MI Asy Syukur Bogor Regency which was obtained from interviews with 20 randomly selected respondents, data was obtained that 7 children routinely ate breakfast at home, 6 children rarely ate breakfast and 7 children Never have breakfast on the grounds that they are not used to it, breakfast is not available at home, stomach ache when having breakfast and limited pocket money, where the allowance is usually used for snacks at rest time.

Based on the above understanding, the researchers are interested in conducting research with the title "The Relationship between Breakfast Habits and Nutritional Status of School Children at MI Asy Syukur, Bogor Regency in 2019".

## **RESEARCH METHOD**

The type of research used is quantitative research with a descriptive analytic design with approach *cross sectional*. Quantitative research, namely in data collection, where research is based on the philosophy of positivism. This method is a scientific method because it meets concrete, objective, measurable, rational, and systematic scientific principles. Meanwhile, descriptive design is a method that functions to describe or give an overview of the object under study through data or samples that have been collected as is without analyzing and making general conclusions. Furthermore, the definition of *cross sectional* is a type of research that emphasizes the time / measurement of the data observation of the independent and dependent variables only once at a time. In this type the independent and dependent variables are assessed simultaneously at one time, so there is no follow-up. Of course, not all research subjects must be observed on the same day or time, but both the independent variable and the dependent variable are assessed only once.<sup>13</sup>

This research was conducted at MI Asy Syukur Bogor Regency with the total population in this study were children aged 6-12 years, which is the number of all students at MI Asy Syukur Bogor Regency in 2019. In this study the population of students in MI was determined. Asy Syukur Bogor Regency totals 218.

Population is a generalization area consisting of: objects / subjects that have a certain quantity and characteristics that are determined by the researcher to be studied and then draw conclusions. So the population is not just people, but objects and other natural objects.

If the population is > 100, then 5-25% can be taken as a sample. The sample is part of the number and characteristics of the population. When the population is large, and researchers may not study everything in the population. for example, because of limited funds, energy and time, researchers can use samples taken from that population. In this study the researcher took 5% of the population as many as 218, meaning that the sample size was

5% x 218 respondents. The variables of this study consisted of habits breakfast with nutritional status in school children at MI Asy Syukur. Data processing and data analysis using computerized data. The analysis consisted of univariate and bivariate analysis, where the bivariate analysis used the statistical test *Kendall Tau* to analyze the relationship between breakfast habits and nutritional status of school children at MI Asy Syukur, Bogor Regency.

In this study, the location that was determined to carry out the research was MI Asy Syukur Bogor Regency. The sampling method in this study used *simple random sampling, sampling* which is a technique from members of the population that was carried out randomly without paying attention to the strata in the population of 109 respondents to school children at MI Asy Syukur. Research data collection was carried out on September 16-17 2019. The study was assisted by 2 research assistants using a *checklist* sheet and observation sheet.

## RESEARCH RESULTS

Table 1  
 Frequency Distribution of Respondent Characteristics Based on Classes of School Children at MI Asy Syukur Bogor Regency

No	Class	Frequency	Percentage (%)
1	Class 1	18	16.5
2	Class 2	18	16.5
3	Class 3	18	16.5
4	Class 4	18	16.5
5	Class 5	18	16.5
6	Class 6	19	17.4
Total		109	100

Source: Processed *SPSS 17*

Based on table 1 The frequency distribution of respondent characteristics based on the class of school children in MI Asy Syukur, Bogor district, in 2019, it is known that most of them are in grade 6, namely (17.4%) respondents.

Table 2  
 Frequency distribution of respondent characteristics based on gender of school children at MI Asy Syukur Bogor Regency

No	Gender	Frequency	Percentage (%)
1	Female	54	49.5
2	Boys	55	50.5
Total		109	100

Source: Processed *SPSS 17*

Based on table 2 The frequency distribution of respondent characteristics based on the sex of school children in MI Asy Syukur, Bogor district, in 2019, it is known that most of them are male, namely 55 (50.5%) respondents.

Table 3

Frequency Distribution of Respondent Characteristics Based on Age of School Children at MI Asys Syukur

No	Age	Frequency	Percentage (%)
1	6 Years	3.4	3.7
2	7 Years	14	12.8
3	8 Years	18	16.5
4	9 Years	18	16.5
5	10 Years	18	16.5
6	11 Years	18	16.5
7	12 Years	19	17.4
Total		109	100

Source: Processed *SPSS 17*

Based on table 3 The frequency distribution of respondent characteristics based on age is known that most of them are 12 years old, namely 19 (17.4%) respondents.

Table 4

Habits of Breakfast for School Children at MI Asy Syukur Bogor Regency

No	Breakfast Habits	Frequency	Percentage (%)
1	Poor	28	25.7
2	Good	81	74.3
Total		109	100

Source: Processed *SPSS 17*

Based on Table 4, it is known that the frequency distribution of breakfast habits for school children at MI Asy Syukur, Bogor Regency in 2019, there were 81 (74.3%) respondents with good breakfast habits.

Table 5

Distribution of Frequency of Nutritional Status of School Children

No	Status Nutritional	Frequency	Percentage (%)
1	Poor nutrition	29	26.6
2	Good nutrition	80	73.4

Total	109	100
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Source: Processed *SPSS 17*

Based on table 5, it is known that the distribution of nutritional status in school children at MI Asy Syukur Bogor in 2019, 80 (73.4%) respondents have good nutritional status.

Table 6  
 Relationship between Breakfast Habits and Nutritional Status of School Children

Breakfast Habits	Nutritional Status				Total	P Value	OR Value	
	Malnutrition		Good Nutrition					
	F	%	F	%				
Poor	23	21.1	5	4.6	28	25.7	0.000	57.500
Good	6	5.5	75	68.8	81	74.3		
Total	29	26.6	80	73.4	109	100		

Source: Processed *SPSS 17*

Based on table 4.6, it is known that the relationship between breakfast habits in school-age children at MI Asy Syukur, Bogor district in 2019 shows that out of 109 respondents who have a good breakfast habit with good nutritional status, 75 (68.8%) of respondents.

The results of statistical data tests using the test *Kendall Tau* obtained  $p \text{ value } 0.000 \leq 0.05$  ( $\alpha$ ), which means that  $H_a$  is accepted and  $H_0$  is rejected. From this value, the results of the analysis state that there is a relationship between breakfast habits and nutritional status in school-age children at MI Asy Syukur, Bogor Regency in 2019. The *Odds Ratio (OR) value* of 57,500 means that respondents who have good breakfast habits will have a chance of 57,500 times. fold to obtain good nutritional status.

## DISCUSSION

### 1. Univariate Analysis

Based on the univariate results of the frequency distribution of each independent variable (breakfast habits) and the dependent variable (nutritional status).

#### a. Breakfast

Habits Breakfast or breakfast habits is an activity to consume food that is carried out in the morning before the activity, which consists of staple foods and side dishes or in the form of snack foods. Breakfast is very important for everyone, because breakfast is not just a stomach booster, but also provides energy for children to do activities. Breakfast is able to

restore the body's metabolic function, after fasting all night. Morning meal or breakfast is considered very important and should not be missed. Breakfast should be 15-30 minutes after waking up, the longest breakfast can be tolerated until 09.00. This is because breakfast can help to refuel the body, provide energy and provide a great opportunity to start daily activities with a sufficient nutritional boost.<sup>14</sup>

Factors that influence breakfast habits are age, gender, availability of breakfast and pocket money. Younger people often eat breakfast than adults, this is because younger children tend to get more parental attention. Men eat breakfast more often because girls have a fear of being fat. Availability of breakfast will make children meet nutritional adequacy, the habit of children skipping breakfast makes a solution to eat during recess.<sup>15</sup>

Based on the results of research on the frequency distribution of school children's breakfast habits at MI Asy Syukur, Bogor Regency in 2019, from 109 respondents, it was stated that most of those who had good breakfast habits were 81 (74.3%) of respondents.

This is supported by previous research with title The relationship between breakfast habits and nutritional status of students of SD Muhammadiyah special program Surakarta, the result is that good breakfast habits are 44 (78.6%).

From the theory and research results, the researchers assumed that the habit of having breakfast every day was influenced by age, gender, availability of breakfast and pocket money.

#### b. Nutritional Status Nutritional

status is a state of balance between the intake and needs of nutrients the body needs for growth and development, especially for children under five, activities, health care, healing for those who suffer from illness and other biological processes in the body.<sup>8</sup> Nutritional status is the interpretation of data obtained using a variety of methods to identify populations or individuals at risk or with poor nutritional status.<sup>9</sup>

There are two factors that influence nutritional status, namely direct and indirect factors. The direct factor, namely food intake, is the amount of single or varied food a person eats with the aim of meeting physiological, psychological and sociological needs. and infectious disease is a disease caused by a biological agent. Meanwhile, the indirect factor, namely food security, is the ability of the family to meet the food needs of all family members in a sufficiently good amount and in the amount of nutrition, child care patterns and health services are the ability of families and communities to provide time, attention and support for children to grow and develop. the best physically, mentally and socially.<sup>9</sup>

Benefits of Breakfast The first is Helping in the fulfillment of daily nutrition, that is, a person cannot do it with just one meal. In Indonesia, usually someone will eat 3 times a day to meet their daily nutritional needs, namely breakfast or what is often called breakfast, lunch and dinner. The recommended breakfast is one third of the daily nutritional requirement or about 15-30% RDA.<sup>8</sup>

Benefits of the second breakfast is Helping in maintaining the ideal body weight because often researchers reveal that breakfast is related to a person's BMI. That people who don't have breakfast will have a high intake of fat, cholesterol and energy but their intake of

fiber, vitamins and minerals is low. In addition, someone who skips breakfast tends to consume foods with high calories in the next hour because they feel very hungry.<sup>8</sup>

Benefits of breakfast the third is to increase concentration in learning because breakfast is said to be a special nutrition for the brain. Thus, if a child skips breakfast, the child tends to be less concentrated in learning. The energy from breakfast intake contains blood glucose which is very necessary for brain performance, with sufficient glucose levels the brain can work properly so that children can concentrate and receive every lesson well. Vice versa, if a child skips breakfast, the brain will lack nutrition so that the child tends to be sleepy and cannot absorb lessons well.<sup>8</sup>

Based on the results of the research on the distribution of the frequency distribution of the nutritional status of school children at MI Asy Syukur Bogor Regency in 2019 from 109 respondents, it was stated that most of those who had good breakfast habits were 80 (73.4%) respondents.

This is supported by previous research by Retno Dewi Noviyanti on the title Relationship between Breakfast Habits and Nutritional Status of Students at Muhammadiyah Elementary School, Surakarta Special Program, the result is that 29 respondents have a good nutritional status (51.8%).

From the theory and research results, the researchers assumed that good nutritional status was influenced by direct factors, namely food intake and infectious diseases. Furthermore, the indirect factors are food security, childcare patterns and health services and environmental sanitation.

## **2. Bivariate Analysis of the Relationship between Habits Breakfast and Nutritional Status of School Children at MI Asy Syukur Bogor Regency in 2019**

Breakfast or breakfast habits are an activity to consume food that is carried out in the morning before an activity, which consists of staple foods and side dishes or in the form of snack foods .

Nutritional status is a state of balance between the intake and needs of nutrients the body needs for growth and development, especially for activities, health care, healing for those who suffer from illness and biological processes in the body. Many things affect nutritional status, namely direct and indirect factors. Among them are food intake, one of which is the habit of having breakfast. If you skip breakfast it will cause a decrease in brain ability which is then followed by a decrease in the ability of other bodily functions which will interfere with the physical and cognitive development of children so that if it occurs continuously it will affect nutritional status.

Based on the results of research in table 4.6, data obtained from 109 respondents who have a good breakfast habit with good nutritional status are 75 (68.8%) respondents. The results of statistical data tests using the test *Kendall Tau* obtained a p value of  $0.000 \leq 0.05$ , meaning that  $H_a$  is accepted and  $H_0$  is rejected, from this value, the results of the study are there is a relationship between breakfast habits and nutritional status of school children at MI Asy Syukur Bogor Regency in 2019. At the OR (*odds ratio*) = 57,500, it can be seen that a good breakfast habit will have a 57,500-fold chance of getting good nutritional status.

This is supported by previous research entitled The relationship between breakfast habits and nutritional status in school children at Islamic Elementary School Tambak Bayan Yogyakarta, breakfast habits in the good category, the majority calculation results are in the frequent category, obtained  $p\text{-value} = 0.000 < 0.05$ .

Based on the theory and research results, the researchers assume that good breakfast habits will affect good nutritional status as well. Conversely, the habit of having a poor breakfast will affect the nutritional status as well.

## CONCLUSION

1. It is known that the frequency distribution of the characteristics of respondents by class is known that most of them are in class 6, namely 19 (17.4%) respondents.
2. It is known that the frequency distribution of the characteristics of respondents based on gender is known that most of them are male, namely 55 (50.5%) respondents.
3. It is known that the frequency distribution of the characteristics of respondents based on age is mostly 12 years old, namely 19 (17.4%) respondents.
4. It is known that the frequency distribution of breakfast habits among school children at MI Asy Syukur is 81 (74.3%) of respondents with good breakfast habits.
5. It is known that the frequency distribution of nutritional status among school children in MI Asy Syukur is 80 (73.4%) respondents who already have a good nutritional status
6. It is known that the relationship between breakfast habits and nutritional status in school children at MI Asy Syukur Bogor Regency in 2019 from 109 respondents who have good breakfast habits with good nutritional status is 75 (68.8%) of respondents. The results of statistical data tests using the test *Kendall Tau* obtained  $p\text{ value} = 0.000 \leq 0.05$ , meaning that  $H_a$  is accepted and  $H_0$  is rejected, from this value, the results of the study are there is a relationship between breakfast habits and nutritional status of school children at MI Asy Syukur Bogor Regency in 2019.

## SUGGESTION

1. Educational institutions are expected to provide reference materials and reading materials for child nursing, community nursing and breakfast habits, as well as a reference in carrying out further research on nutritional status.
2. For Research Sites  
It is hoped that this research can be used as a guide to be able to provide knowledge about the importance of breakfast habits with nutritional status. So that it can provide a good understanding for all students of MI Asy Syukur Bogor Regency in 2019 regarding nutritional status.

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