JOURNAL OF APPLIED FOOD AND NUTRITION
Volume 4 Issue 1, June 2023, 26-33

Available online at:
https://ejournal.upi.edu/index.php/JAFN

The Breakfast Habits Related With Nutritional Status Of Students In State Madrasah Ibtidaiyah 1 Kuantan Singingi

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ABSTRACTS

Introduction: Fulfillment of nutritional needs in the morning can be obtained from breakfast, there was by fulfilling 15-30% of daily nutrient intake. Currently, there are still many Indonesian children who still need to consume breakfast under balanced nutrition recommendations. Children who rarely had breakfast are at risk of nutrient deficiencies, affecting their nutritional status. The study aimed to determine the correlation of breakfast habits to the nutritional status of students in State Madrasah Ibtidaiyah (MIN) 1 Kuantan Singingi. This research was conducted in MIN 1 Kuantan Singingi on February 2023.

Method: This research method used a cross-sectional design and a total sampling technique. Variabels in this research included breakfast obtained by breakfast recall questionnaire interviews and nutritional status determined based on measurements of the z-socre of BMI/Age.

Result: The results showed that 47,5% respondents were normal category and about 57.5% respondents had good breakfast habits. Based on the Chi-Square test results obtained a value of p=0.746>0.05, it can be concluded that there was no significant correlation between breakfast to the nutritional status of students in MIN 1 Kuantan Singingi.

ARTICLE INFO

Article History:
Received April 2023
Revised May 2023
Accepted June 2023
Available online June 2023

Keywords:
Breakfast; Nutritional Status; Student.

1. Introduction

One of the characteristics of a developed nation is a nation that has high levels of health, intelligence, and work productivity. These three factors are influenced by nutritional status. Individuals with good nutritional status are less susceptible to both infectious and degenerative diseases. Nutritional status is a crucial factor in achieving optimal health. Suboptimal nutrition is associated with poor health and increased risk of infectious and non-communicable diseases (Ministry of Health of Indonesia, 2014 and Ministry of Health of Indonesia, 2017).

Based on the 2018 Indonesian Basic Health Research (Riskesdas), the prevalence of nutritional status (BMI/A) among children aged 5-12 years in Indonesia indicates that the prevalence of severe underweight is 2.4%, underweight is 6.8%, normal weight is 70.8%, overweight is 10.8%, and obesity is 9.2%. According to the 2018 Riskesdas for Riau Province, the prevalence of underweight (severe underweight and underweight) among children aged 5-12 years is 13.7%. The prevalence of overweight children aged 5-12 years in Riau Province is 10.6%, and the prevalence of obesity among children aged 5-12 years is 9.45%. Based on the 2018 Riskesdas results for Riau Province, in Kuantan Singingi District, the prevalence of underweight children aged 5-12 years is 8.9%, which is higher than the national prevalence of underweight status, which is 6.8%. The prevalence of severe underweight status in Kuantan Singingi District is also higher than the national prevalence of severe underweight status (2.4%), at 4.19%. Meanwhile, the prevalence of overweight nutritional status among children aged 5-12 years in Kuantan Singingi District approaches the national overweight rate (10.8%) at 7.89%. The prevalence of obesity among children aged 5-12 years in Kuantan Singingi District is 5.27%, which is lower than the national prevalence of obesity in children aged 5-12 years (9.2%).

An individual's nutritional status is influenced by food consumption. Malnutrition occurs when the intake of nutrients into the body is insufficient, whereas excessive consumption of nutrients leads to overnutrition. In the Indonesian dietary pattern, there are three main meals: breakfast, lunch, and dinner (Purnamasari, 2018). Breakfast provides the energy and nutrients needed for daily activities such as schooling, learning, and playing. Skipping breakfast can lead to inadequate nutritional intake for daily activities (Muaris, 2009). According to the Ministry of Health of Indonesia in 2014, the habit of having breakfast is included in the thirteen basic messages of balanced nutrition. Breakfast meets the nutritional needs in the morning, providing 15-30% of daily nutrient intake. The recommended energy intake from breakfast for children is around 20-25% of daily energy needs, which is 200-300 calories. The composition of breakfast menues should focus on essential nutrients, particularly carbohydrates, protein, fat, vitamins, minerals, and fiber (Sitorus, 2009). A study by Hardinsyah and Perdana (2013) indicated that 69.6% of Indonesian children do not consume breakfast according to the balanced nutrition guidelines (25% of daily requirements). According to the Ministry of Health of Indonesia (2014), many Indonesians have not yet adopted the habit of breakfast, which can negatively impact the learning process for schoolchildren, reduce physical activity, contribute to obesity in adolescents and adults, and increase the risk of unhealthy snacking.

Based on the explanation above, the researcher is interested in conducting a study on the relationship between breakfast habits and nutritional status among students at MIN 1 Kuantan Singingi in Kuantan Singingi District. The research aimed to determine the correlation between breakfast habits and nutritional status among students in MIN 1 Kuantan Singingi.

2. Materials and Methods

The research was conducted in February 2023 at MIN 1 Kuantan Singingi. The type of research used was observational research using a cross-sectional design. The population in the study consisted of all fifth-grade students at MIN 1 Kuantan Singingi. The sampling technique used in the study was total sampling. The sample size in this study was 40 respondents. The breakfast habits of the respondents were obtained by filling out research questionnaires and conducting food recall interviews, while nutritional status data were obtained by weighing the respondents' body weight and measuring their height using digital scales and microtoise. The processing of respondents' nutritional status used the World Health Organization (WHO) Anthro Plus application for children aged 5-18 years based on BMI/A. The results of the recall interviews were processed using the Nutrisurvey Application. Breakfast habits in this study were assessed from two aspects: breakfast frequency and breakfast energy contribution. This study categorized breakfast energy contribution into three categories: adequate (15%-30% of total requirements), insufficient (<15% of total requirements), and excessive (>30% of total requirements). The data obtained were processed and analyzed using the chi-square statistical test with a 95% confidence level.

3. Results and Discussion

3.1. Characteristics of Respondents

The characteristics of respondents in this study are presented in Table 1.

Table 1. Characteristics of Respondents Based on Gender and Age.

Karakteristik Responden	Amount	(%)
Gender		
Men	19	47,5
Women	21	52,5
Age		
10th	11	27,5
11th	26	65,0
12th	3	7,5
Total	40	100

Based on Table 4.1, it can be seen that male respondents are fewer in number (47.5%) compared to female respondents (52.5%). The age distribution of respondents is dominated by those aged 11 years (65%) compared to those aged 10 years (27.5%) and 12 years (7.5%). Gender is an important consideration in assessing an individual's nutritional status because the growth patterns of males and females differ (Harjatmo et al., 2017). According to Recommended Dietary Allowances (RDA) 2019, for the age group of 10-12 years, the nutritional needs of males are greater than those of females.

3.2. Nutritional Status of Respondents

The nutritional status of the respondents in this study was measured using anthropometric methods. Assessment of nutritional status through anthropometric methods can be calculated by knowing the age, gender, weight, and height of the respondents. The nutritional status of respondents can be determined by calculating the Body Mass Index for Age (BMI/A) Index. The nutritional status of respondents based on the Anthropometric Standard BMI/A for children aged 5-18 years can be seen in Table 2.

Table 2. Nutritional Status of Respondents

Nutritional Status	Amount	Persentase (%)
Severely Thinness(<-3 SD)	4	10
Thinness (-3 s/d <-2 SD)	8	20
Normal (-2 SD s/d +1 SD)	19	47,5
Overweight (+1 SD s/d +2 SD)	7	17,5
Obese (>+2 SD)	2	5,0
Total	40	100

Based on Table 2, it is known that respondents with normal nutritional status (47.5%) are more prevalent compared to those with poor nutritional status (10.0%), undernutrition (20%), overnutrition (17.5%), and obesity (5.0%). The current condition of children in Indonesia still experiences a double burden of malnutrition, which includes both undernutrition and overnutrition. One of the factors influencing the growth and development of children is the nutrients consumed on a daily basis (BPOM R1, 2021). Adequate nutritional status is crucial for school-age children, as it contributes to their growth and development, immune system maintenance, reduction of future disease risks, and increased productivity (Wijayanti, 2016).

3.3. Breakfast Habits

The breakfast habits of respondents in the study can be observed in Table 3.

Table 3. Breakfast Habits of Respondents

Breakfast Habits	Amount	Persentase (%)
Good	23	57,5
Bad	17	42,5
Total	40	100

Based on Table 3, it is shown that respondents with good breakfast habits amount to 23 respondents (57.5%), while respondents with poor breakfast habits amount to 17 respondents (42.5%). Breakfast habits in this study are assessed based on two aspects: the frequency of breakfast and the energy contribution from breakfast. Breakfast habits are categorized as good if the frequency of breakfast is >4 times per week and it provides 15-30% of the total daily energy requirement. The energy contribution from breakfast in Indonesia is around 15-30% of the daily energy requirement. This has been considered based on the study of the contribution of various nutrients in breakfast to the daily nutrient intake of Indonesian children. Since the ideal target for daily nutrient intake is to meet nutritional needs (100% RDA), the recommended breakfast should provide 15-30% of nutrients and should be consumed between early morning and 9 AM (Hardinsyah & Aries, 2012).

The frequency of respondents based on breakfast questionnaire indicators is presented in Table 4.

Table 4. Frequency of Respondents Based on Breakfast Questionnaire Indicators

Breakfast Characteristics	Amount	(%)
Breakfast Frequency		
Frequent: ≥4 times/week	29	72,5
Rare: 1-3 times/week	11	27,5
Never: 0	0	0
Breakfast Time		
< 09:00 AM	36	90

Breakfast Characteristics	Amount	(%)
≥ 09:00 AM	4	10
Breakfast Location		
Home	21	52,5
School	19	47,5
During Travel	0	0
Acquiring Breakfast		
Prepared at home	26	65
Purchased from a food stall	14	35
Reasons for Skipping Breakfast		
Lazy	7	17,5
Lack of food availability	2	5
No time	27	67,5
Not accustomed	4	10
Contribution of Breakfast Energy		
Excessive >30% of Daily	2	5
Energy Intake		70
Adequate 15%-30% of Daily	28	25
Energy Intake		
Inadequate <15% of Daily	10	
Energy Intake		
Total	40	100

Based on Table 4, it was found that the majority of respondents had breakfast with a frequency of ≥ 4 times per week, totaling 29 respondents (72.5%). Meanwhile, 11 respondents (27%) had breakfast with a frequency of 1-3 times per week. A total of 36 respondents (90%) had breakfast before 09:00 AM, and the remaining 4 respondents (10%) had breakfast after 09:00 AM. Breakfast for schoolchildren is recommended to be done at 06:00 or before 07:00, which is before the occurrence of hypoglycemia or very low blood sugar levels (Ministry of Health, 2014).

In this study, a portion of respondents had breakfast at home (52.5%), and the rest had breakfast at school (47.5%). More than half of the respondents, 65%, obtained their breakfast by preparing it at home, while the remaining 35% bought their breakfast from a food stall. Children are advised to always eat with their families to avoid or reduce consumption of unhealthy and unbalanced foods (Ministry of Health, 2014).

The most common reason for respondents not having breakfast was lack of time (67%), followed by laziness (17%), unavailability of food (5%), and being unaccustomed to breakfast (10%). The reason for not having breakfast due to lack of time is presumed to be related to school schedules starting at 07:00 AM. Therefore, some respondents tend to skip breakfast or have a small portion, resulting in insufficient energy contribution from breakfast. Specifically, 10 respondents (25.0%) had an energy contribution of less than 15% of their daily energy requirement, while 28 respondents (70.0%) had an adequate energy contribution, and the remaining 2 respondents (5%) had an excessive energy contribution. The energy contribution from breakfast was calculated based on the recall of two breakfasts, specifically on weekends and weekdays.

3.4. Relationship Between Breakfast Habits and Nutritional Status of Students at MIN 1 Kuantan Singingi

The results of the study on the relationship between breakfast habits and the nutritional status of students at MIN 1 Kuantan Singingi, using the chi-square test, are presented in Table 5.

Table 5. Relationship between Breakfast Habits and Nutritional Status

Breakfast Habits	Nutritional Status						Total		P-Value
	Thinness		Normal		Overweight				
	n	%	n	%	N	%	n	%	
Good	6	26,1	11	47,8	6	26,1	23	100	0,746
Bad	6	35,5	8	47,1	3	17,6	17	100	
Total	12	30	19	47,5	9	22,5	40	100	

Based on Table 5, it is evident that respondents with good breakfast habits who have a normal nutritional status are more numerous, totaling 11 respondents (47.8%), compared to those with undernutrition and overnutrition. Similarly, respondents with poor breakfast habits who have a normal nutritional status are more numerous, totaling 8 respondents (47.1%), compared to those with undernutrition and overnutrition. The statistical chi-square test results show that the significance value (p-value) between the breakfast habits variable and nutritional status is 0.746. Since $p > 0.05$, this indicates that there is no significant relationship between breakfast habits and the nutritional status of students at MIN 1 Kuantan Singingi.

This study is in line with the research conducted by Ethasari and Nuryanto (2014), which states that there is no relationship between breakfast habits and nutritional status ($p = 0.080$). Another study by Munawwaroh et al. (2020) also states that there is no relationship between breakfast habits and the nutritional status of school-age children at SD Muhammadiyah Terpadu Ponorogo ($p = 0.406$).

However, this study contrasts with the research conducted by Lusiana (2020) at SD Negeri 171 Pekanbaru in 2019, which suggests that breakfast plays an important role in shaping the nutritional status of children and can affect their concentration during learning and their nutritional status ($p = 0.000$). Another study by Asih et al. (2017) also concludes that there is an influence between breakfast habits and the nutritional status of children in students at SDN 01 Gisikdrono ($p = 0.004$). Breakfast habits affect nutrient intake, where breakfast is a crucial activity before engaging in physical activities throughout the day. Breakfast provides the energy and nutrients needed to carry out various activities such as school, learning, and play optimally. If a child skips breakfast, their nutritional needs will not be met optimally (Muaris, 2009).

4. Conclusion

Based on the research findings, it can be concluded that there is no relationship between breakfast habits and the nutritional status of students at MIN 1 Kuantan Singingi. For future researchers, it is recommended to consider other variables or factors that may influence nutritional status.

5. Acknowledgment

On this occasion, the author would like to express gratitude to the school principal, teachers, staff, and all parties at MIN 1 Kuantan Singingi for providing the opportunity to

conduct this research. Thanks are also extended to the research respondents who took the time and opportunity to participate as samples in this study.

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