

Breakfast Habits And Nutritional Status Of Female Students In An Islamic Boarding School

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Abstract: Breakfast was very important as the main source of nutrients needed for the brain to function properly. Adolescents who frequently skipped breakfast were less selective in choosing their food at lunch due to excessive hunger, leading to overeating in the afternoon or evening. This risked them consuming calories exceeding their daily needs, which in the long term could have a negative impact on their health, such as weight gain and the risk of obesity. This research was an analytical observational study using a cross-sectional design. The research was conducted at Islamic Boarding School from October to November 2024. Sampling was done using Simple Random Sampling technique on 44 respondents from a total population of 54. Data collection was carried out by distributing questionnaires to respondents who met the predetermined inclusion and exclusion criteria. The obtained data was analyzed using the Spearman correlation test with a significance level of 5% ($p < 0.05$). The results showed that there was a relationship between breakfast habits and nutritional status among the female students at Islamic Boarding School, with $p = 0.035 < 0.05$. The conclusion of this study was that low, moderate, and high breakfast habits could influence nutritional status. This is because with breakfast, the energy intake entering the body is met, neither too much nor too little.

1 INTRODUCTION

A healthy and nutritious breakfast habit has been proven to prevent nutritional problems and maintain physical and mental health (Amalia & Adriani, 2019). Conversely, skipping breakfast risks triggering overeating during the day, consumption of junk food, and even weight gain and obesity (Annisa & Utami, 2024). Breakfast in Islamic boarding schools has its own challenges. Students' activities usually start at dawn with worship, recitation, and study, so breakfast time is often rushed or even skipped. Additionally, the menu from the boarding school kitchen is not very varied and may not meet

daily nutritional needs. The more appealing the food, the higher the acceptance rate. As a result, many female students choose instant snacks or unhealthy street food as a substitute for breakfast. Since all activities and meals for students are centred within the boarding school environment, the role of the boarding school in providing nutritious breakfasts while educating students on the importance of breakfast is crucial.

Indonesian Minister of Health Regulation No. 2 of 2020 establishes anthropometric standards for assessing the nutritional status of children and adolescents, adopted from World Health Organisation (WHO) standards. Nutritional status is

an important indicator in assessing the quality of daily food provision and reflects the balance of certain conditions in the form of measurable variables. Nutritional status is influenced not only by factors such as health status, knowledge, economy, environment and culture, but also by energy and protein consumption patterns (Aulia 2021). In Indonesia, nutrition problems in children and adolescents remain a challenge. Data from the 2023 Indonesian Health Survey (SKI) shows that the prevalence of wasting in children reached 8.5%, an increase from the previous year (7.7%). Meanwhile, the prevalence of overweight and obesity in children aged 5–12 years is 19.7% and in adolescents aged 13–15 years is 16%. Even in adulthood, 23.4% of Indonesians are obese due to poor diet and minimal physical activity.

Based on research conducted by Mutika et al. (2020), there is a relationship between breakfast habits and nutritional status among students at SDN Kedung Waringin 01 in 2017 ($p=0.0004$), where students who rarely or never eat breakfast are more likely to have poor nutritional status, such as being severely underweight, underweight, overweight, or obese. This study is also in line with research conducted by Sheila Monica Kelly Amalia and Merryana Adriani (2019), which found a relationship between breakfast habits and nutritional status among students at SMP Banyuwangi ($p=0.049<0.05$). This shows that breakfast habits are an important factor affecting the nutritional status of adolescents.

However, research related to breakfast habits and nutritional status in adolescents in Islamic boarding schools is still limited, even though students have busy and structured activity patterns, with

limited food choices depending on the availability in the boarding school dormitory or canteen. This condition has the potential to affect the daily nutritional intake and breakfast habits of students. Therefore, this study aims to analyse the relationship between breakfast habits and nutritional status in adolescents in Islamic boarding schools, so as to provide a more specific picture of the role of breakfast in supporting the health and development of adolescents in Islamic boarding schools.

2 METHOD

The type of research used in this study is quantitative research. This study is an analytical observational study with a cross-sectional design. Data collection in this study uses primary data as the main data in the study, namely breakfast habits and nutritional status obtained directly from respondents or research subjects through questionnaires. This study used simple random sampling techniques. The sample size in this study was determined by considering the inclusion and exclusion criteria that had been set. The inclusion criteria included female students (university students) who lived in Islamic boarding school dormitories, were aged 18-24 years, were in good health without chronic diseases or metabolic disorders, were willing to provide accurate information about their breakfast habits and have their nutritional status measured, and had lived in the dormitory for at least 6 months to ensure consistency in breakfast habits. Meanwhile, exclusion criteria included female students with specific health disorders such as digestive disorders, chronic diseases, or eating disorders (anorexia/bulimia), those undergoing special medical diets or weight loss/gain,

those who were not currently in the dormitory (home), and those who had lived in the dormitory for less than 6 months, meaning their breakfast patterns and nutritional status were not yet stable. The research sample consisted of 54 female students at Islamic Boarding School, which was the entire population. Based on the results of the Lameshow formula calculation, the number of samples obtained was 39 respondents, but in the implementation of the research, 44 respondents were obtained. The data in this study were collected using a questionnaire. Respondents filled out the questionnaire by marking the answers provided by the researcher. Data collection in this study used two types of instruments. Nutritional status data was obtained through anthropometric measurements, which included weight measurement using scales, height measurement using a microtoise, and Body Mass Index (BMI) analysis. Meanwhile, data on breakfast habits was collected using questionnaires and the 24-hour food recall method to assess the patterns and quality of the respondents' breakfast intake. The study was conducted at the Islamic Boarding School, located at Jl. Saikhoni No.36b, Tambaksumur, Waru District, Sidoarjo Regency, East Java. The study period was from October to November 2024.

3 RESULT

Respondent Characteristics

The results of the study on respondent characteristics based on age show that of the 44 respondents studied, 7 respondents (16%) were 18 years old, 14 respondents (31%) were 19 years old,

11 respondents (25%) were 20 years old, 6 respondents (14%) were 21 years old, and 6 respondents (14%) were 22 years old. In detail, the data can be seen in Table 1.

Table 1 Frequency Distribution of Respondents Based on Respondent Characteristics at Islamic Boarding School

Respondent Characteristics	Number	
	<i>f</i>	%
Age		
18 Years Old	7	16
19 Years Old	14	31
20 Years Old	11	25
21 Years Old	6	14
22 Years Old	6	14
Total	44	100

Source: Primary Data, 2024

Univariate Analysis Results

Breakfast Habits

The results of the breakfast habits study show that of the 44 respondents studied, 8 respondents (18.2%) had the lowest breakfast habits and 20 respondents (45.5%) had the highest breakfast habits. In detail, the data can be seen in Table 2.

Table 2 Frequency Distribution of Respondents Based on Breakfast Habits

Breakfast Habits	F	%
Low	8	18.2
Moderate	16	36.4
High	20	45.5
Total	44	100.0

Source: Primary Data, 2024

Nutritional Status

The results of the nutritional status study show that of the 44 respondents studied, 10 respondents (22.7%) were underweight, 20 respondents (45.5%) were of normal weight, 10 respondents (22.7%) were overweight, and 4 respondents (9.1%) were obese. In detail, the data can be seen in Table 3.

Table 3 Frequency Distribution of Respondents Based on Nutritional Status

Nutritional Status	F	%
Underweight	10	22.7
Normal	20	45.5
Overweight	10	22.7
Obese	4	9.1
Total	44	100.0

Source: Primary Data, 2024

Bivariate Analysis Results

Relationship between Breakfast Habits and Nutritional Status among Female Students at Islamic Boarding School

Table 4 shows that of the 44 samples studied, 8 respondents (18.2%) had low breakfast habits, with 3 respondents (6.8%) having thin nutritional status, 4

Table 4 Relationship between Breakfast Habits and Nutritional Status among Female Students at Islamic Boarding School

Breakfast Habits	Nutritional Status					P- Value	Correlation
	Underweight	Normal	Overweight	Obese	Total		
Low	3	4	1	0	8	0.035	0.318
Moderate	4	8	4	0	16		
High	3	8	5	4	20		
Total	10	20	10	4	44		

If the significance value is > 0.05 , then H_0 is accepted. Conversely, if the significance value is < 0.05 , then H_0 is rejected. Based on the results of the Spearman's correlation statistical test, a significance value of $0.035 < 0.05$ was obtained, so H_0 is rejected

respondents (9.1%) having normal nutritional status, and 1 respondent (2.3%) having overweight nutritional status. A total of 16 respondents (36.4%) had moderate breakfast habits, with 4 respondents (9.1%) having thin nutritional status, 8 respondents (18.2%) having normal nutritional status, and 4 respondents (9.1%) having overweight nutritional status. Meanwhile, 20 respondents (45.5%) had a high breakfast habit, with 3 respondents (6.8%) having a thin nutritional status, 8 respondents (18.2%) having a normal nutritional status, 5 respondents (11.4%) having an overweight nutritional status, and 4 respondents (9.1%) having an obese nutritional status.

and H_a is accepted. This indicates that there is a significant relationship between breakfast habits and nutritional status among female students at the Islamic Boarding School.

Tabel 5 Correlations

		Kebiasaan Sarapan	Status Gizi
Spearman's rho	Kebiasaan Sarapan	Correlation Coefficient	1.000
		Sig. (2-tailed)	.035
		N	44
Status Gizi		Correlation Coefficient	.318*
		Sig. (2-tailed)	.035
		N	44

Based on the results of statistical analysis using Spearman's correlation test in Table 5, there is

a statistically significant relationship between breakfast habits and nutritional status among female

students ($r = 0.318$; $p = 0.035$). This positive correlation value indicates that the better the breakfast habits, the better the nutritional status of female boarding school students. These findings indicate that breakfast habits play an important role in determining the nutritional status of adolescent girls in boarding school environments.

4 DISCUSSION

Univariate Analysis

Breakfast Habits

Based on the results of the breakfast habits study, out of 44 respondents, 8 respondents (18.2%) had low breakfast habits, 16 respondents (36.4%) had moderate breakfast habits, and 20 respondents (45.5%) had high breakfast habits. Low, moderate, and high breakfast habits can be influenced by various factors, one of which is the family's socioeconomic status. Parents' education, occupation, and income greatly influence the provision of a nutritious breakfast. Parents with higher education have better knowledge about the importance of nutrition and health, while sufficient employment and income can purchase quality food ingredients and ensure that breakfast is available every day. Conversely, if parents have low education, employment, and income, they may have difficulty providing healthy food, resulting in children not getting a balanced breakfast (Gemily, Aruben, and Suyatno 2017). The habit of skipping breakfast can affect nutritional intake, causing late adolescents to consume excessive amounts of unhealthy snacks. Meanwhile, a lack of breakfast intake can cause late adolescents to lack energy intake, which can lead to

weakness, lack of concentration, and fainting (Rohmah, Rohmawati, and Sulistyani 2020).

Nutritional Status

The results of the nutritional status study showed that of the 44 respondents studied, 10 respondents (22.7%) were underweight, 20 respondents (45.5%) were of normal weight, 10 respondents (22.7%) were overweight, and 4 respondents (9.1%) were obese. Factors influencing nutritional status include eating patterns or habits, sleep quality, physical activity, and lifestyle (Andayani and Ausrianti 2021). The factor causing underweight nutritional status is an imbalance between energy intake and expenditure, where energy expenditure is greater than energy intake. In addition, other causes of thin nutritional status include insufficient food intake, an unbalanced diet that reduces appetite, excessive physical activity, and disease or infection in the body. Meanwhile, factors that cause overweight or obese nutritional status include excessive energy intake and lack of physical activity (Rohmah, Rohmawati, and Sulistyani 2020).

Bivariate Analysis

The Relationship between Breakfast Habits and Nutritional Status among Female Students at Islamic Boarding School

Based on the results of the Spearman's correlation test, a significance value of $0.035 < 0.05$ was obtained, so H_0 was rejected and H_a was accepted. In addition, the correlation value obtained was 0.318, which was greater than the table r value of 0.297 ($0.318 > 0.297$), so H_0 was rejected and H_a was accepted. This indicates that there is a significant

relationship between breakfast habits and nutritional status among female students at the Islamic Boarding School. Poor breakfast habits can lead to poor nutritional status. This is because skipping breakfast tends to lead to choosing unhealthy foods or buying snacks to fill an empty stomach. In addition, not having breakfast or having an insufficiently varied breakfast can cause female students to skip breakfast, leading them to prefer buying unhealthy foods or snacks outside, such as fast food or junk food, which are high in energy. This results in more energy intake than energy expenditure, which can cause overweight or obesity. This study is in line with research conducted by Mefa Hidayatul Rohmah, Ninna Rohmawati, and Sulistiyani Sulistiyani, which found a relationship between breakfast habits and nutritional status. This occurs because skipping breakfast leads to buying snacks to fill the stomach, such as fried instant noodles or fried foods. As a result, the energy intake is greater than the energy expenditure, which leads to obesity. Conversely, if the energy intake is insufficient, it can cause weakness and lethargy. This study is also in line with other research conducted by Sheila Monica Kelly Amalia and Merryana Adriani, which found that there is a relationship between breakfast habits and nutritional status. This is because a good breakfast habit can meet nutritional needs and maintain an ideal nutritional status. Other factors in maintaining nutritional status include consuming a balanced diet and maintaining good health.

5 CONCLUSION AND RECOMMENDATIONS

It can be concluded from the results of this study that there is a relationship between breakfast habits and nutritional status among female students at the Islamic boarding school. Low, moderate and high breakfast habits can affect nutritional status. This is because breakfast ensures that the body receives an adequate intake of energy, neither too much nor too little. As a result, nutritional status does not lead to thinness, overweight or obesity.

Efforts need to be made to reduce and prevent nutritional problems through education on the importance of breakfast and education aimed at improving breakfast habits and nutritional status.

Female religious teachers play an important role in providing education about nutrition and healthy breakfasts during learning. The boarding school kitchen needs to provide a nutritious, varied and attractive breakfast menu. The boarding school can also hold a 'Healthy Breakfast Together' programme before learning activities begin. Cooperation between female religious teachers, kitchen managers and boarding school policies will help create healthy breakfast habits for students.

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