Balanced Nutrition Knowledge and Fast Food Habits among Elementary School Children in Surabaya

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ARTICLES

ABSTRACT

Nutritional problems among school-aged children remain a serious concern globally and nationally, including in Indonesia, where one of the factors influencing children's nutritional status is their knowledge of balanced nutrition. This study aimed to analyze the relationship between balanced nutrition knowledge and fast food consumption habits among elementary school children at SD Uswatun Hasanah Wachid Hasyim Surabaya. This was a quantitative analytic observational study with a cross-sectional design involving 44 respondents from grades 3–6 selected through total sampling. Research instruments included a balanced nutrition knowledge questionnaire and a Food Frequency Questionnaire (FFQ) to assess fast food consumption habits, and data were analyzed using the Spearman rank correlation test. The results showed that the majority of respondents had sufficient knowledge of balanced nutrition (65.9%) and frequently consumed fast food (56.8%), while statistical analysis revealed no significant relationship between balanced nutrition knowledge and fast food consumption habits ($p = 0.568 > 0.05$). In conclusion, good nutritional knowledge does not always translate into healthier eating behavior, indicating the need for more comprehensive strategies to improve children's dietary habits. This study is limited by its cross-sectional design, reliance on self-reported questionnaires, and being conducted in a single school, which may restrict the generalizability of the findings.

Key Messages:
- Balanced nutrition knowledge among elementary school children does not automatically reduce the frequency of fast food consumption.
- Environmental and social factors, such as the proximity of schools to fast food vendors and peer influence, play a significant role in shaping children's eating habits.
- Comprehensive interventions involving parents, teachers, and school regulations are needed to encourage healthier dietary practices among children.
- This study highlights the importance of integrating nutrition education with supportive environments to effectively improve children's dietary behavior.

INTRODUCTION

Excessive consumption of fast food can reduce nutritional quality by triggering the accumulation of excess fat and increasing the likelihood of overweight and obesity (1–5). In addition, diets that rely heavily on fast food are often unable to meet the needs of essential micronutrients such as iron, calcium, and vitamins, which can lead to anemia, stunted growth, and developmental disorders (6–10). If these unhealthy eating habits continue into adolescence, this can interfere with physical and cognitive development and increase the risk of non-communicable diseases in adulthood (11). Nutritional problems are more common in urban areas due to the influence of modernization, which leads to a shift from traditional to less active lifestyles (12,13). Nowadays, children and adolescents tend to spend more time on passive activities, such as using mobile phones or gadgets, playing games, and watching television sitting for long periods of time (14). Elementary school-age children are the next generation of the nation who have great potential as future heirs. The age range of 6–12 years is classified as school age, which is a very important stage of development in shaping their future and their contribution to society (15). In this phase, children begin to get to know the wider world, establish relationships with people outside the family, and adapt to various new situations and environments (16).

A good understanding of nutrition can encourage the formation of positive attitudes and habits in consuming healthy food, thus affecting the overall nutritional status (17). A low understanding of balanced nutrition can lead to unhealthy eating habits, such as often skipping meals, consuming too many processed foods, and a lack of food diversity. Lack of physical activity has the potential to cause excess energy buildup which increases the risk of overweight or obesity. On the other hand, strenuous physical activity without adequate nutritional support can result in malnutrition, fatigue, and inhibition of physical growth (18). Globally, the World Health Organization (WHO) in 2020 reported that the problem of overweight and childhood obesity continues to increase, with more than 39 million children under the age of 5 being overweight (19). In Indonesia, the prevalence of obese children aged 5-12 years was recorded at 18.8%, consisting of 10.8% obese and 8.8% obese. Five years later, the prevalence of obesity increased to 9.2%, indicating changes in people's diets and lifestyles (20). At the regional level, the prevalence of obesity and obesity in Surabaya has also increased significantly. Based on data from Riskesdas (2013), the prevalence of obesity was recorded at 10.2% and obesity at 12%. However, in 2018 the figure increased to 16.28% for obese and 16.81% for obesity (21).

This research aims to determine the relationship between balanced nutritional knowledge and fast food consumption habits in school children. The location of this study was determined at SD Uswatun Hasanah Wachid Hasyim, because of its position close to the market where many fast food sellers operate. This condition makes it easier for students to get fast food, so it has the potential to affect their eating habits. The results of the initial data collection show that the consumption of fast food in this school is quite high. Of the 7 students who were made respondents, 2 of them had low knowledge of balanced nutrition, as seen from the lack of understanding of the importance of a healthy diet and balanced nutrition for health and body growth. In addition, all respondents reported that they often consumed fast food, with the most frequently chosen types including flour fried chicken, sausages, instant noodles, and soft drinks such as soft drinks in various packages.

METHODS

This research was carried out at SD Uswatun Hasanah Wachid Hasyim Surabaya from January 2025 to May 2025. The researcher used an observational quantitative method with cross sectional. The variables in this study are independent variables, namely the nutritional knowledge of school children and the dependent variable, namely the consumption habits of fast food for school children. The research population includes all upper-class students in the school, namely grades 3-6, with a sample of 44 students selected using Suharsimi Arikunto's guidelines, if the population is less than 100 people, then the entire population is used as a sample, so that all members are involved in the research (22). Balanced nutrition knowledge data was obtained through a structured questionnaire in the form of multiple-choice questions regarding the basic principles of balanced nutrition, food groups, and the importance of a healthy diet. Data on fast food consumption habits was collected using the Food Frequency Questionnaire (FFQ) through structured interviews. Data collection uses both primary and

secondary data types. Primary data included age, gender, class, knowledge of balanced nutrition, and fast food consumption habits. As for secondary data, it includes the number of all students at SD Uswatun Hananah Wachid Hasyim and the school profile.

The data processing process is carried out through the stages of editing, coding, data entry, and data cleaning. Editing is carried out to check the completeness and consistency of the data collected. Coding is carried out by giving a certain code to each variable, namely the assessment of balanced nutritional knowledge is carried out with a scoring system, where each correct answer is given a score of 1 and the wrong answer is given a score of 0. The score results were then categorized into three levels, namely good knowledge with a value of more than 80% (code 0), sufficient knowledge with a value between 60%–80% (code 1), and less knowledge with a value of less than 60% (code 2). Meanwhile, the assessment of fast food consumption habits is based on the consumption frequency score obtained from the questionnaire. After calculating, the scores are grouped based on the average score (mean = 43.5). Respondents were categorized as often consuming fast food if the total individual score was greater than or equal to the average score (>43.5) with code 1, while respondents who obtained a score below the average score (< 43.5) were categorized as rarely consuming fast food with code 2. Data entry, which is entering data that has been coded into the SPSS application; and data cleaning, which is re-checking the data that has been entered to ensure there are no errors or deficiencies.

Data analysis using univariate was carried out to provide an overview of the characteristics of each research variable, which in this case includes age, gender, class, balanced nutritional knowledge, and fast food consumption habits. The results of univariate analysis are presented in the form of frequency distribution so that they can describe the profile of respondents and research variables more clearly. Furthermore, the analysis using bivariate aims to determine the relationship between independent variables and dependent variables. In this study, bivariate analysis was used to see the relationship between balanced nutrition knowledge and fast food consumption habits by applying the Spearman Rank correlation test, which is suitable for use because of ordinal-scale research variables and to assess the strength and direction of the relationship between variables.

RESULTS

Table 1. Frequency Distribution of Individual Characteristics of Elementary School Children

Characteristic	n	%
Age (year)		
9	13	29,5
10	6	13,6
11	19	43,2
12	5	11,4
13	1	2,3
Gender		
Woman	25	56,8
Man	19	43,2
Knowledge Level		
Good	5	11,4
Enough	29	65,9
Less	10	22,7
Habit		
Often	25	56,8
Infrequently	19	43,2

Source : Primary Data 2025

Based on Table 1, most of the respondents were 11 years old, namely 19 children (43.2%), followed by 13 children (29.5%) at the age of 9 years. More respondents were female, namely 25 children (56.8%) compared to 19 children (43.2%). The level of nutritional knowledge of respondents was mostly in the sufficient category, namely 29 children (65.9%), while only 5 children (11.4%) had

good knowledge and 10 children (22.7%) had poor knowledge. In addition, the most fast food consumption habits were carried out in the frequent category, which was 25 children (56.8%), while the infrequent category was 19 children (43.2%).

Table 2. Cross-Tabulation of Balenced Nutrition Knowledge with Fast Food Consumption Habits

Knowledge	Fast Food Consumption Habits				Sum	p-value
	Habit					
	Often		Infrequently			
	n	%	n	%		
Good	2	40	3	60	5	
Enough	18	62,1	11	37,9	29	0,568
Less	5	50	5	50	10	
Sum	24	56,8	19	43,2	44	

Source : Primary Data 2025

Based on Table 2, respondents with a good level of balanced nutrition knowledge tended to be more in the category of rarely consuming fast food, namely as many as 3 children (60%), although there were still 2 children (40%) who often consumed it. Among respondents with sufficient knowledge, there were more children who often ate fast food, namely 18 children (62.1%) than those who rarely ate as many as 11 children (37.9%). Meanwhile, in respondents with less knowledge, the distribution was the same between those who frequently and rarely ate fast food for 5 children (50%) each. Overall, out of a total of 44 respondents, most of them had the habit of eating fast food often as many as 25 children (56.8%), while those who rarely consumed as many as 19 children (43.2%). The results of the statistical test showed a value of p = 0.568, which means that there was no significant relationship between the level of balanced nutrition knowledge and fast food consumption habits in elementary school children.

DISCUSSION

1. Research Characteristics

This research was carried out at SD Uswatun Hasanah Wachid Hasyim Surabaya with the research subjects of students in grades 3 to 6. The choice of this school is not without reason, but because of its strategic location and proximity to an area where there are many fast food vendors. This condition makes students have fairly easy access to various types of fast food, thus allowing for high consumption habits. This environmental factor is considered relevant to be researched because it can affect the diet and nutritional behavior of elementary school-age children. The type of research used is quantitative observational analytics with a cross-sectional design. This design was chosen because it was able to describe the condition of balanced nutritional knowledge and fast food consumption habits in respondents at one measurement time, so that the relationship between the two variables could be analyzed simultaneously. The independent variable in this study was balanced nutritional knowledge, while the dependent variable was fast food consumption habits.

The population in this study is all students in grades 3 to 6 at SD Uswatun Hasanah Wachid Hasyim. With a relatively small population, the researcher used the total sampling method, so that all students at that level were used as research samples. With this approach, the results of the study are expected to describe the real condition of all students at the class level studied without sampling bias. The research instrument used consists of two main parts. First, a balanced nutrition knowledge questionnaire containing structured questions about the basic principles of balanced nutrition, students' understanding of the types of nutritious foods, and the benefits of implementing a healthy diet. This instrument is used to measure the extent of respondents' understanding of balanced nutrition. Second, the Food Frequency Questionnaire (FFQ) is used to measure fast food consumption habits. Through FFQ, students are asked to report the frequency of consumption of various types of fast food in a certain period of time, so that an idea can be obtained of how often children consume the food.

The data collection process is carried out by distributing questionnaires that are filled out directly by respondents, then complemented by structured interviews to ensure the accuracy of the data. All collected data is then processed using SPSS software. The analysis was carried out in two stages, namely univariate analysis to determine the distribution of respondent characteristics,

nutritional knowledge levels, and fast food consumption habits, and bivariate analysis using the Spearman Rank test to determine whether there is a relationship between balanced nutrition knowledge and fast food consumption habits in elementary school students.

2. Interesting Findings in Research

This research produced several findings that are quite interesting to observe. One of the main things that can be seen is that the level of balanced nutritional knowledge that students have is not always directly proportional to the consumption habits of fast food. Although most students have knowledge in the sufficient category, the reality is that they still often eat fast food. This shows that knowledge alone is not enough to encourage behavior change, because children's decisions in choosing food are more influenced by other factors beyond knowledge. Children often consume various types of snacks, but it is possible that they can experience various health problems. Childhood obesity has now become one of the major health problems. Meanwhile, good nutrition for school children plays an important asset for the progress of a nation, because it is through the younger generation that sustainable development can be continued (23). In addition, bivariate analysis showed no significant relationship between balanced nutritional knowledge and fast food consumption habits (p-value = 0.568 > 0.05). These findings show a clear gap between what children know and what they do every day. In addition to knowledge, other factors that also affect the selection of snacks are attitudes and actions. Children may understand that fast food is not good for health, but still consume it due to preferences, habits, or influences from the surrounding environment (16).

Another interesting finding is the strong influence of environmental and social factors on children's eating habits(24). The location of the school is close to the market and the many fast food vendors around the school area make it very easy for children to access the food. In addition, the influence of peers who often snack together helps strengthen fast food consumption behavior. This factor makes it more difficult for children to change, even though they already have basic knowledge about the importance of balanced nutrition. The type of fast food that children most often choose is also in the spotlight. In the study, it was found that flour fried chicken, sausages, instant noodles, and soft drinks are the most consumed foods by students. The selection of food is generally based on the reason of good taste, affordable price, and ease of access because it is available around the school. This indicates that the aspect of taste and food availability is more dominant than the consideration of nutritional value.

These findings show that the formation of healthy eating behaviors is not enough only through increasing nutrition knowledge in schools, but there is a need for parental involvement, teacher supervision, and school environment regulations in providing healthier snacks. Children at primary school age tend to imitate their peers and choose foods that are easy to obtain without considering the long-term impact on their health (25). Although nutritional knowledge is a key factor that influences food choices, it does not necessarily lead to healthy dietary practices. Knowledge alone is not enough. There are several factors that can cause this gap. Economic constraints can limit access to diverse and nutritious foods, especially for students from low-income families. Cultural preferences or taste preferences can also make teenagers prefer processed foods that are less nutritious. In addition, the school and home environment may not support the application of nutritional knowledge, for example, the unavailability of healthy food options in school canteens or the lack of role models from parents in implementing healthy eating patterns (17). Thus, the interesting findings in this study emphasize that balanced nutrition knowledge is an important factor but not the only determinant in fast food consumption behavior in elementary school children. The social environment, the availability of snacks, and parental parenting actually play a greater role in shaping children's daily eating habits.

This research has several limitations. Cross-sectional designs cannot explain cause-and-effect relationships, and the use of self-report questionnaires has the potential to lead to response bias. In addition, the study was only conducted in one school with a small sample count, thus limiting the generalization of the findings. Further research is recommended using a longitudinal design, involving a wider sample, as well as considering other variables such as parental influence, socioeconomic conditions, and environmental characteristics of food.

CONCLUSION

This study found that although most respondents had sufficient knowledge of balanced nutrition, more than half still frequently consumed fast food. Statistical analysis confirmed no significant relationship between nutrition knowledge and fast food consumption habits ($p = 0.568$). These findings highlight that knowledge alone is not sufficient to shape children's dietary behavior; environmental and social factors play a more decisive role. The scientific contribution of this study lies in demonstrating the knowledge–behavior gap among elementary school children in Surabaya, reinforcing international evidence that effective interventions must address not only cognitive but also contextual determinants of eating behavior.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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