MEDIA GIZI ILMIAH INDONESIA

Media Gizi Ilmiah Indonesia

Volume 2, Nomor 2, Tahun 2024, Hal. 109-115

Original Article

OPEN ACCESS

Hubungan Asupan Makan Dengan Status Gizi Anak SD Swasta Karya Bakti Kota Medan

The Relationship Food Intake With Nutritional Status of Children at Karya Bakti Private Elementary School in Medan

Tuty Hertati Purba[1], Sarni Anggoro[2], Nisya Ayu Rachmawati[3], Wanda Lestari[4] Alifia Salsabila Dongoran[5*], Gali Wijaya[6], Maslena Harefa[7], Silfi Dwi Utami[8], Sintia Anggi Kemala[9], Usni Anriani Harahap[10]

[1,4,5,6,7,8,9,10] Program Studi Gizi, Fakultas Kesehatan Masyarakat, Institut Kesehatan Helvetia Medan
[2] STIKes Surya Global Yogyakarta
[3] Prodi S1 Gizi, Institut Teknologi Sains dan Kesehatan PKU Muhammadiyah Surakarta
alifia.salsabilla03@gmail.com

Informasi Artikel
Submit: 25 – 07 – 2024
Diterima: 14 – 08 – 2024
Dipublikasikan: 15 – 08 – 2024

**Alamat Penulis Korespondensi:*
Alifia Salsabila Dongoran .; Jl. Melati Raya No. 28, Sempakata, Medan, Indonesia 20124.
Phone: 081263068287

ABSTRACT

School-aged children are considered the nation's investment as they are the successors of the nation. According to the Nutritional Status Monitoring (PSG) report from the Health Office of North Sumatra Province in 2022, 8.8% of children aged 5-12 years are classified as very underweight and underweight based on BMI-for-age. This study aims to examine the relationship between food intake and nutritional status of elementary school children at Karya Bakti Private School in Medan. The research uses a quantitative survey design with a cross-sectional approach. The population consists of all 5th-grade students at Karya Bakti Private School in Medan, totaling 26 samples. Data analysis was conducted using univariate and bivariate analysis with the chi-square test. The results from the 26 samples showed that 15.4% of those with inadequate food intake had poor nutritional status, 46.1% with inadequate food intake had normal nutritional status, 19.2% with adequate food intake had normal nutritional status, 15.4% with excessive food intake had excessive nutritional status, and 3.8% with excessive food intake were obese. The chi-square test yielded a p-value of 0.01, indicating that food intake is related to nutritional status. On the basis of the obtained data, we conclude that there is a relationship between food intake and nutritional status among elementary school children at Karya Bakti School in Medan.

Keywords: *nutritional status, food intake, children, underweight, cross-sectional approach*

ABSTRAK

Anak pada usia sekolah merupakan investasi bangsa sebab mereka merupakan penerus bangsa, Berdasarkan hasil Pemantauan Status Gizi (PSG) Dinas Kesehatan Provinsi Sumatera Utara 2022 melaporkan bahwa sebanyak 8,8% persentase anak sangat Kurus dan kurus umur 5-12 tahun berdasarkan IMT/U. Tujuan penelitian ini untuk mengetahui hubungan asupan makanan dengan status gizi anak sekolah dasar di SD

Email:
alifia.salsabila03@gmail.com

swasta karya bakti kota Medan. Jenis penelitian yg di gunakan adalah desain survei kuantitatif dengan pendekatan cross sectional. Populasi adalah seluruh siswa kelas 5 SD swasta karya bakti kota Medan berjumlah 26 sampel.Analisa data menunggunakan analisa univariat dan bivariat dengan uji *chi square*. Hasil penelitian dari 26 sampel menunjukan bahwa yang memiliki asupan makanan kurang dengan keadaan gizi kurang sebanyak (15,4%). Asupan makanan kurang dengan keadaan gizi normal (46,1%). Asupan makanan cukup dengan keadaan gizi normal (19,2%). Asupan makanan lebih dengan keadaan gizi lebih (15,4%).Asupan makanan lebih dengan keadaan obesitas (3,8%). Berdasarkan uji *chi-square* didapatkan nilai (p- value = 0,01) menunjukkan bahwa asupan makanan berhubungan dengan status gizi. Kesimpulan ada hubungan asupan makanan dengan status gizi pada anak sekolah dasar di SD swasta karya bakti Kota Medan.

Kata kunci: status gizi, asupan makan, anak, berat badan kurang, pendekatan cross-sectional

INTRODUCTION

School-age children are considered as national investment because they are the future generation. The future quality of a nation is intrinsically linked to the well-being of its children. Childhood represents a critical period during which growth and development must be meticulously observed, as children are the foundation for future generations. Adequate nutrition during this phase plays a pivotal role in shaping an individual's cognitive abilities and overall productivity (1). School-age children also known as middle childhood, are defined as those between the ages of 6 and 12 years. Furthermore, during this period, they begin to enter the school environment (2).

The average age of Indonesian children when they start elementary school is 6 years old, and they finish at 12 years old. School-age children go through two stages of development: middle childhood (6-9 years) and late childhood (10-12 years). At this stage, children still enjoy playing, moving around, working in groups, and experiencing or doing things directly (3).

Nutritional status is determined by the body's need for calories and other nutrients obtained from food intake, with measurable physical impacts. One of the most frequently used method to assess nutritional status is through anthropometric measurements (4). According to Indonesian Minister of Health Regulation No. 2 of 2020 on Child Anthropometric Standards, children aged 5-18 years are classified as having malnutrition if their z-score is between -3 SD and <-2 SD, good nutrition if their z-score is between -2 SD and +1 SD, overweight if their z-score is between +1 SD and +2 SD, and obese if their z-score is above +2 SD (5). Based on the 2018 Basic Health Research (Riskesdas), the nutritional status of children aged 5-12 years in Indonesia, according to body mass index/age, shows a prevalence of underweight at 9.3%, including 2.5% very underweight and 6.8% underweight. The issue of overweight among children in Indonesia remains high, with a prevalence of 20.6%, comprising 11.1% overweight and 9.5% obese. Additionally, the prevalence of stunting is 23.6%, with 6.7% being very short and 16.9% short (6).

Based on the 2023 SKI (Survei Kesehatan Indonesia) survey results, the nutritional status of children aged 5 to 12 years in Indonesia according to BMI/U is as follows: the prevalence of severely underweight children is 3.5%, underweight children is 7.5%, normal weight children is 68.4%, overweight children is 11.9%, and obese children is 7.8% (7). According to the 2022 Nutritional Status Monitoring (PSG) report from the North Sumatra Provincial Health Office, 8.8% of children aged 5-12 years are classified as very thin and thin based on BMI/U (8). To ensure optimal growth and development, children require good nutritional intake in terms of both quantity and quality. Due to many contextual influences that significantly impact eating behavior at this age, nutrition is often not ideal, according to Nuryanto et al., 2014 (9).

A person's nutritional status is often linked to their daily food intake. Well-chosen daily meals ensure the body receives all essential nutrients for normal functions, while poor food choices can lead

to nutrient deficiencies (10). The functions of nutrients in the body include providing energy, supporting growth and maintenance, and regulating bodily processes (11). Therefore, parents play a crucial role in shaping good food intake for school-aged children. The nutritional status of school-age children still varies and is often poor due to riskfactors such as age, gender, and infectious diseases (12).

The nutritional status of school-age children greatly influences their physical and mental development, ultimately impacting their intelligence. Measuring nutritional status is a very important aspect to avoid one of its complications, which is malnutrition. Issues with menu, portion sizes, and meal timing are factors that can affect a child's nutritional status. An imbalance between nutrient intake and needs poses a high risk of malnutrition, especially in children who have difficulty eating (13).
Food intake includes all daily food and drink consumed by the body. Generally, food intake is studied to be linked with the nutritional status of a community or individual in a certain area (14). Incorrect or inappropriate nutritional intake causes health problems such as underweight and overweight. Furthermore, inadequate food intake can lead to nutrient deficiencies in children, which can impair the immune system. Many school children still do not make a habit of having breakfast (reference). Not having breakfast negatively impacts the learning process at school, reduces physical activity, leads to weight gain, and increases the risk of unhealthy snacking (15). Based on this, the researcher is interested in conducting a study on the relationship between food intake and the nutritional status of children at Karya Bakti Private Elementary School in Medan City.

METHOD

Research Type

A qualitative approach with a cross-sectional design was used to determine the relationship between food intake and the nutritional status of children at Karya Bakti Private School in Medan. This method allows for the analysis of data at a single point in time, providing insights into the current dietary habits and nutritional outcomes of the children. This research was conducted on October 21, 2023, at SD Swasta Karya Bakti in Medan City.

Research /Target Subjects

The sample for this research comprises all fifth-grade students, totaling 26 participants, drawn from both class V A and V B. The inclusion criteria for this study were fifth-grade students who were still active at SD Swasta Karya Bakti Medan and with aged between 9 and 13 years. The exclusion criteria include students who were absent during the research period.

Data Procedure

The research procedure involved several key stages: initially, permission was obtained from SD Swasta Karya Bakti Medan. Following this, all necessary tools for the measurements, including a microtoise, scales, and a 24-hour food recall form for assessing food intake, were prepared. The fieldwork was then carried out, involving the execution of all research activities in a single day until their completion.

Data, Instruments, and Data Collection Techniques

A 24-hour food recall form was used, a microtoise, and a scale to measure food intake and nutritional status of children. The data processing technique involved calculating BMI using body weight and height data, followed by adjusting the results by comparing the z-score with child anthropometric standards to determine nutritional status. Furthermore, data from the 24-hour food recall form was processed using Nutrisurvey software and compared with the Recommended Dietary Allowance to determine the food intake of elementary school children at the Karya Bakti Private School in Medan.

Data Analysis Techniquest

The data analysis method was conducted using univariate and bivariate analysis. Univariate analysis aims to describe the characteristics of each research variable, while bivariate analysis aims to

test the hypothesis regarding the relationship between independent variables and dependent variables, namely dietary patterns and nutritional status in children.

RESULTS

The following table presents the gender distribution of the study participants. It highlights the number of male and female students involved in the research. The characteristics of the research subjects include gender groups, food intake, and nutritional status, which are crucial for understanding the demographics of the sample population.

Tabel 1. Gender of Children at Karya Bakti Private Elementary School in Medan

Karakteristik	N	%
Gender		
Male	15	57,7
Female	11	42,3
Total	**26**	**100**

The table above Table 1 shows the sample consisted of 15 male students, accounting for 57.7% of the total participants in the study. In contrast, there were 11 female students, representing 42.3% of the sample. This distribution highlights a slightly higher number of male students compared to females. Overall, the research included a total of 26 participants, providing a diverse representation of gender within the fifth-grade student population at SD Swasta Karya Bakti Medan. The gender composition is important for analyzing potential differences in nutritional status and food intake between male and female students.

Tabel 2. Food Intake of Children at Karya Bakti Private Elementary School in Medan

Food Intake	**N**	**%**
Less	16	61,5
Enough	5	19,2
Over	5	19,2
Total	26	100

Table 2 above shows that 61.5% of what were in the insufficient category with a frequency of 16 students, 19.2% were in the adequate category with a frequency of 5 students, and 19.2% were in the more than adequate category with a frequency of 5 students. Therefore, it can be concluded that the majority (61.5%) of the daily food intake of students at SD Swasta Karya Bakti in Medan is categorized as insufficient.

Tabel 3. Nutritional Status of Children at Karya Bakti Private Elementary School in Medan

Status Gizi	**N**	**%**
Malnutrition	4	15,4
Normal	18	69,2
Overweight	3	11,5
Obesity	1	3,8
Total	26	100

Table 3 above shows that 15.4% of what were in the undernutrition category with a frequency of 4 students, 69.2% were in the normal category with a frequency of 18 students, 11.5% were in the overnutrition category with a frequency of 3, and 3.8% were in the obesity category with a frequency of 1 student. Therefore, it can be concluded that the majority (69.2%) of the nutritional status of students at SD Swasta Karya Bakti in Medan is categorized as normal.

Tabel 4. The Relationship Between Food Intake and Nutrional Status

Food Intake	Nutritional Status										P Value
	Malnutrition		Nomal		Overweight		Obesity		Total		
	F	%	F	%	F	%	F	%	F	%	
Less	4	15,4	12	46,1	0	0	0	0	16	61,5	0,01
enough	0	0	5	19,2	0	0	0	0	5	19,2	
Over	0	0	0	0	4	15,4	1	3,8	5	19,2	
Total	4	15,4	18	69,2	4	15,4	1	3,8	26	100	

Based on Table 4 aboveIt was found that among 26 respondents (100%) at SD Swasta Karya Bakti, 16 respondents (61.4%) with insufficient food intake included 4 respondents (15.4%) with poor nutritional status. status, 12 respondents (46.1%) with good nutritional status, and none with more than adequate nutritional status. For adequate food intake, there were 5 respondents (19.2%) with good nutritional status, and none with more than adequate nutritional status. For more than adequate food intake, there were 5 respondents (19.2%) with no poor nutritional status, none with good nutritional status, 4 respondents (15.4%) with more than adequate nutritional status, and 1 respondent (3.8%) with obesity. Based on the research conducted at SD Swasta Karya Bakti in Medan, using the Chi-Square test, a significant p-value of 0.01 was obtained compared to the alpha value (0.05), indicating a significant relationship between food intake and the nutritional status of students at SD Swasta Karya Bakti in 2023.

DISCUSSION

Food intake refers to the information about the amount and types of food consumed by an individual or group at a given time. From food intake, essential nutrients needed by the body to maintain growth and good health are obtained. The food consumed then impacts growth and development, which can be observed through nutritional status (16). Adequate nutritional status plays a crucial role during school age to ensure that children reach their full growth, development, and health potential, which can also enhance their academic performance at school (17).

Food is a basic necessity in human life and a primary source of energy used to support daily activities. Food intake is one of the direct causes that affect nutritional status. A balanced intake of nutrients is essential for growth and development. Imbalanced food intake can affect the nutritional status of school-aged children. Insufficient nutrient intake will lead to a decline in nutritional status, making children more susceptible to infections. A deficiency or excess of any nutrient element will cause disorders or diseases as it directly determines nutritional (18).

This research is in line with Nesi Ratna Sari's 2022 research entitled The relationship between food intake, breakfast habits and snack habits with thet, showing that there was a relationship between food intake, breakfast and snack habits with the nutritional status of elementary school children at SD Negeri 6 Teluk in Simeulue Regency (19).

This study was also in line with the research by Purnawaningrum (2018), that food intake is related to the nutritional status of children. This may be due to the fact that food intake can be insufficient due to several factors, including the education level of respondents and income. These factors are indirect factors that can affect nutritional status because they influence the intake of both energy and protein, which in turn can affect the nutritional status of children (20,21).

The Table 3 presents the nutritional status of the study participants, highlighting key findings regarding malnutrition, normal weight, overweight, and obesity among the respondents. Among the 26 participants, the majority, 18 students (69.2%), were classified as having a normal nutritional status,

indicating that most children met the appropriate dietary and health standards. Conversely, a concerning 4 students (15.4%) were identified as malnourished, which underscores the need for targeted interventions to address nutritional deficiencies in this population. Additionally, the data revealed that 3 students (11.5%) were classified as overweight, while 1 student (3.8%) fell into the obesity category. These figures suggest a small but notable presence of overweight and obesity in the sample, highlighting the importance of promoting healthy eating habits and physical activity among school-aged children. The low prevalence of obesity is encouraging, but the presence of malnutrition and overweight points to the necessity of comprehensive nutritional education and interventions to ensure that all students achieve and maintain a healthy nutritional status. Overall, these findings emphasize the need for ongoing monitoring and support to address the diverse nutritional needs of children at SD Swasta Karya Bakti.

The Table 4 presents the relationship between food intake and nutritional status among the study participants. A significant association is observed, as indicated by the p-value of 0.01. Among the 16 students with insufficient food intake, 4 (15.4%) were classified as malnourished, while 12 (46.1%) achieved a normal nutritional status. This suggests that inadequate food consumption is closely linked to malnutrition, underscoring the critical role of proper dietary intake in maintaining nutritional health.

In contrast, of the 5 students with sufficient food intake, none were malnourished; 5 (19.2%) had a normal nutritional status. Notably, for those with excessive food intake, there were 4 students (15.4%) who were classified as overweight and 1 student (3.8%) who was classified as obese. This indicates that while excessive food intake can lead to overweight and obesity, it does not appear to correlate with malnutrition, further emphasizing the complexity of nutritional status (22). Overall, these findings highlight the importance of promoting balanced dietary practices to prevent both malnutrition and overweight among school-aged children. The results suggest that interventions aimed at improving food intake are essential for enhancing the nutritional status of students at SD Swasta Karya Bakti.

CONCLUSION

There was a relationship food intake with the nutritional status of elementary school children at Karya Bakti private elementary schools in the city of Medan in 2023.

SUGGESTION

Therefore, efforts from parents are needed to pay more attention to their child's food intake, and it was also recommended to provide a variety of types of food so that the children were willing to consume these foods, ensuring that the child's nutritional needs are met.

ACKNOWLEDGMENT

The author would like to thank the many parties who have helped and supported this work, especially the Nutrition Study Program at the Institut Kesehatan Helvetia Medan, the principal and teachers at Karya Bakti Private Elementary School in Medan, as well as the fifth-grade students of Karya Bakti Private Elementary School in Medan who were willing to assist in the continuation of the author's research**.**

CONFLICT OF INTEREST

The author declares that there is no conflict in the writing of this article.

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