

Maternal Knowledge, Attitudes, and Healthy Feeding Behavior on Nutritional Status of Elementary School Students

Sherin Fellicia Liemen,¹ Felicia Kurniawan,² Nanny Djaya²

¹School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia,

²Departement of Public Health and Nutrition, School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia

Abstract

Background: Some children aged 6–9 years have started to enter the pre-pubertal rapid growth period. Therefore, the need for nutritious food has begun to increase significantly. The role of mothers in providing food is very much needed. This study aimed to determine the relationship between mother's knowledge, attitudes, and behavior in healthy feeding on the nutritional status of children.

Methods: This study was a cross-sectional study conducted in July–August 2019. The sample was mothers and their children who were in grade I to III of public and private elementary schools in Penjaringan, Jakarta, Indonesia. The study used a total sampling method, and the data collected included age, gender, height, weight, and the mother's knowledge, attitudes and behavior in healthy feeding. Data was analyzed using Chi-square. Calculation of students' nutritional status used the 2010 anthropometric standards of the Ministry of Health of the Republic of Indonesia.

Results: Of the 348 mothers included, 310 (89.1%) had a high level of knowledge, 86.5% had a positive attitude, and 75.3% had good behavior in healthy feeding. Children's nutritional status was predominantly normal (46.2%) and overweight (34.8%). There was a significant relationship between maternal behavior in providing healthy food and children's nutritional status ($p=0.046$).

Conclusions: There is a significant relationship between maternal behavior in providing healthy food and the children nutritional status. Therefore, parents should pay more attention to their behavior in providing healthy food to their children.

Keywords: Elementary school students, healthy feeding, maternal, nutritional status

Althea Medical Journal.
2023;10(4):252-259

Received: January 30, 2023

Accepted: August 20, 2023

Published: December 31, 2023

Correspondence:

Sherin Fellicia Liemen,
School of Medicine and Health
Sciences, Atma Jaya Catholic
University of Indonesia

E-mail:

sherin.201706010251@
student.atmajaya.ac.id

Introduction

Humans need food to survive and carry out their daily activities. Low-grade children or children aged 6–9 years are individuals who start attending elementary school. Besides, children in this age group are starting to enter a period of rapid pre-pubertal growth, so the need for nutritious food begins to increase. This causes the mother's role to be crucial in providing healthier and more nutritious food for children aged 6–9 years compared to children aged 10–19 years who have entered adolescence with more mature motor,

cognitive and communication skills than the previous age.¹

In Indonesia, healthy food is known as the Four Healthy Five Perfect concept, namely consuming rice, side dishes, vegetables, fruit and milk. Currently, the concept of Four Healthy Five Perfect has developed into balanced nutrition guidelines (*Pedoman gizi seimbang*, PGS), namely daily food ingredients that contain nutrients in types and quantities according to the body's needs.²

Factors that affect nutritional status are divided into direct causes and indirect causes. Direct causes are causes that are directly

influenced by nutritional intake and infectious diseases suffered by a person. Meanwhile, the indirect causes can be influenced by limited food availability at the household level, sanitation, and parenting style.³ In daily food processing, it is necessary to apply food sanitation hygiene as an effort to avoid poisoning and disease transmission. The six principles that are important to note are selecting food raw materials, food processing, food transportation, food storage, and food serving.⁴

A study in Padang has shown a significant relationship between mothers' attitudes and knowledge regarding the incidence of stunting in children who have just entered elementary school.⁵ This can be seen from the percentage of new students entering elementary school with normal height, most of whom are children whose mothers have a positive or good level of knowledge. However, a low level of education does not necessarily guarantee that a mother does not have adequate knowledge about her family's nutrition. If a mother has high curiosity, she will be more motivated to access more information about the right foods for her child.⁵ Another study on maternal behavior regarding the nutrition of school-aged children in Indonesia shows that there is a prior related behavior with maternal behavior in providing good nutrition to school-aged children. However, the linear analysis results show that the mother's habits (prior related behavior) do not significantly affect the mother's behavior in fulfilling the nutrition of school-aged children.⁶ Low maternal education is an important risk factor for children's growth and development. The long-term consequence of malnutrition is failure to thrive, and there is a significant relationship between maternal education and the incidence of stunting.⁷

Knowledge is the result of "knowing", which occurs after human sense a particular object. Sensing occurs through the five human senses, namely sight, smell, hearing, taste, and touch. Human knowledge is mostly acquired through the eyes and ears.⁶ Attitude is a reaction or response to someone who is still close to a stimulus or object. It can be inferred that the manifestation of this attitude cannot be seen immediately, but can only be interpreted in advance from closed behavior. Attitude shows the connotation of the suitability of reaction to certain stimuli. Attitude is a predisposition to take action or behavior, not an action or activity.⁸ Attitude is also a brief evaluation of everything based on cognitive, emotional, and behavioral information.⁹ Behavior is all

activities or activities of individuals, both those that are directly observed, and those that cannot be observed by outsiders. Behavior consists of perception, guided responses, mechanism and adaptation. Behavior has a very wide range, including walking, talking, crying, laughing, working, studying, writing, reading, and so on.⁸

Considering the importance of mother's knowledge, behavior and attitudes in providing healthy food on the children's nutritional status, this study aimed to determine the relationship between mother's knowledge, attitude, and behavior in healthy feeding and nutritional status of children in grade I, II, and III at three elementary schools in North Jakarta, Indonesia.

Methods

This study was a cross-sectional study conducted in July–August 2019. The samples were mothers and their children who were in grade I–III at three elementary schools in Penjaringan, North Jakarta, Indonesia. Using the total sampling method, of the total 557 mothers who filled out the questionnaire, only 348 mothers met the inclusion criteria, returned the questionnaire, and filled out the questionnaire completely. An ethical clearance agreement has been obtained from the ethics commission of the School of Medicine and Health Sciences at Atma Jaya Catholic University of Indonesia, with number 01/05/KEP-FKIKUJ/2021.

Data was collected from a questionnaire filled out by the mother, and the children's anthropometric data was taken to measure body mass index (BMI). Before gathering data, informed consent was sought from the principals of three schools, consisting of two public elementary schools (*Sekolah Dasar Negeri*, SDN), namely SDN Penjaringan 08 Pagi and SDN Penjaringan 10 Pagi, and one private elementary school (*Sekolah Dasar Swasta*, SDS), namely SDS Westin. Next, data on the number of mothers of students in grades I–III at the three elementary schools was collected. Then, questionnaires were distributed to students and taken home to be filled out by mothers. This questionnaire was distributed in collaboration with the principal of each elementary school. Exclusion criteria were mothers who could not read or were illiterate so that they could not fill out the questionnaire properly or mothers who were not willing to fill out the questionnaire.

Students' body weight was measured

using a digital weighing scale calibrated to an accuracy of 0.1 kg. Students' height was measured using a two-meter-long measuring tape with an accuracy of 0.1 cm using BMI calculations. Then, the Z-score was calculated using a formula obtained from the 2010 anthropometric standards of the Ministry of Health (*Kementerian Kesehatan, KEMENKES*) Republic of Indonesia.¹⁰ Nutritional status was categorized into severe thinness, thinness, normal, overweight, and obese.

The instrument used to measure the mother's knowledge consisted of 13 questions. Respondents answered by putting a cross (X) on the multiple choices that were considered correct. The correct answer was given a score of 1, while incorrect answer was given a score of 0. All answers for each respondent were counted and added up. Good knowledge if the correct answer was above or equal to (\geq) 8. Poor knowledge if the correct answer was below ($<$)

8. Then, the mother's attitude variable used a closed questionnaire as a checklist (\checkmark), which was calculated using a Likert Scale. There were 16 questions consisting of positive and negative statements. For positive statements, the answer 'strongly agrees' was given a value of 4, 'agree' was given a value of 3, 'disagree' was given a value of 2 and 'strongly disagree' was given a value of 1.

The mother's attitude towards providing healthy food was in the positive category if the score was above or equal to (\geq) 48, while the mother's attitude was in the negative category if the score was below ($<$) 48. There were 18 questions consisting of positive and negative statements. In positive question statement, the answer 'always' was given a score of 4, 'often' was given a score of 3, 'sometimes' was given a score of 2, and 'never' was given a score of 1. The mother's behavior was in the 'good' category if the score was above equal to (\geq) 56,

Table 1 Level of Mother's Knowledge, Attitude, and Behavior in Healthy Feeding

Category	n	%
Mother's knowledge		
High	310	89.1
Low	38	10.9
Mother's attitude		
Positive	301	86.5
Negative	47	13.5
Mother's behavior		
Good	263	75.3
Poor	86	24.7

Table 2 Distribution of Students by Grade Level, Age, and Gender

Variable	n	%
Education level		
1st grade	125	35.9
2nd grade	117	33.6
3rd grade	106	30.5
Age		
5 years	4	1.1
6 years	38	10.9
7 years	103	29.6
8 years	103	29.6
9 years	89	25.6
10 years	8	2.3
11 years	2	0.6
13 years	1	0.3
Gender		
Male	165	47.4
Female	182	52.30

Table 3 Distribution of Nutritional Status of Grade I, II and III Students

Nutritional Status	n	%
Severely thinness	20	5.7
Thinness	46	13.2
Normal	161	46.3
Overweight	32	9.2
Obese	89	25.6

Table 4 Distribution of Nutritional Status of Students in Grade I, II and III of Public and Private Elementary Schools in North Jakarta, Indonesia

Nutritional Status	n	%
Undernutrition	66	19.0
Normal	161	46.2
Overweight	121	34.8
Total	348	100

while the mother’s behavior was ‘bad’ if the score was below (<) 56.

Research data was processed using the Statistical Package for the Social Sciences (SPSS) version 26 for Windows. The data was divided into univariate and bivariate data. Univariate data indicated the distribution of respondents based on characteristics (class, age, gender), mother’s level of knowledge, attitude, and behavior in providing healthy food, and nutritional status. Meanwhile, bivariate data indicated the distribution of respondents based on the relationship between maternal knowledge, attitude, behavior and nutritional status. Chi-square was used to analyze bivariate data.

Results

In this study, the results of the univariate analysis of the dependent variable of this study showed that the mother’s knowledge in providing healthy food was in the high category (89.1%), the mother’s attitude in providing healthy food was in the positive category (86.5%), and the mother’s behavior in providing healthy food was in the good category (75.3 %) (Table 1).

Based on the distribution of students, students were dominated by female (52.3%), most were aged 7 and 8 years (29.6%), and were in the 2nd grade of elementary school (Table 2). Most students had good nutritional status (normal) (46.3%). However, there were

Table 5 Relationship between Maternal Knowledge, Attitude, Behavior in Healthy Feeding with Children’s Nutritional Status

	Nutritional Status			P value
	Undernutrition n (%)	Normal n (%)	Overweight n (%)	
Mother’s knowledge	58 (87.8)	141 (87.5)	111 (91.7)	0.509
High	8 (12.2)	20 (12.5)	10 (8.3)	
Mother’s attitude	57 (86.3)	136 (84.4)	108 (89.2)	0.508
Positive	9 (13.7)	25 (15.6)	13 (10.8)	
Mother’s behavior	42 (63.6)	124 (77.0)	96 (79.3)	0.046
Good	24 (36.4)	37 (23.0)	25 (20.7)	
Total	66 (100)	161(100)	111(100)	

also students in the obese category (25.6%) (Table 3).

For bivariate analysis, this study categorized severe malnutrition and underweight to undernutrition, whereas overweight and obesity into overweight. From the results of univariate analysis, 46.2% of students had normal nutritional status, while 34.8% of students were overweight (Table 4).

The results of the bivariate analysis on the variable maternal knowledge and nutritional status obtained $p=0.509$, and on the variable maternal attitude and nutritional status obtained $p=0.508$, which means there was no relationship between knowledge and mother's attitude in giving healthy food with nutritional status. Different from these two variables, in the bivariate analysis between maternal behavior and nutritional status, the p -value= 0.046 was obtained, which means that there was a relationship between maternal behavior in giving healthy food and nutritional status (Table 5).

Discussion

In this study, the age range of students was 5–13 years with the majority being 7 and 8 years old, and most of them were female. The results of statistical analysis show that mothers' knowledge in providing healthy food has a high level of knowledge. This is in line with a study conducted in Magelang Regency, showing that the level of knowledge of mothers in providing healthy food is high. The mother's level of knowledge is good because the mother's age range includes the productive phase (<50 years), the mother's curiosity is high, and following today's development, all information can be easily accessed through various media.¹¹

A study in Kediri on the level of knowledge of mothers regarding fulfillment of nutrition in elementary school students discovered that 40.81% of mothers did not understand the components of nutrition in children, 42.8% of mothers did not know about nutritional problems in children, and 68.02% mothers did not understand the principles of balanced nutrition in children.¹² In this study, mothers already understood sufficiently about the components of nutrition in children but did not pay attention to the importance of nutritional problems that might occur in children.¹² In another study in Jember regarding the relationship between the level of knowledge of mothers and the nutritional status of elementary school-aged children with low

grades, the nutritional status commonly found in children is normal nutritional status.¹³ The level of mothers' knowledge classified as moderate is more than the level of mothers' knowledge who are less (44.4%). The odd ratio (OR) value is 8,000, which means that mothers with a moderate level of knowledge have an eight times greater chance of having children with normal nutritional status.¹³ Mother's knowledge of balanced nutrition is essential to improve family health, which affects nutritional status, wellness, and can subsequently have a beneficial effect on obesity among children and young adolescents. Knowledge is a construct of beliefs, information, and skills provided from both experience and education. In terms of nutrition and eating, the ability to remember and recall specific information related to the advantages of food and nutrition is considered knowledge.¹⁴

In this study, the mother's attitude variable in providing healthy food consisted of two categories; there were mothers with a positive attitude with a dominating number of 86.5% and mothers with a negative attitude which was only 13.5%. Attitude is an individual's assessment (opinion) of a stimulus or object. A positive attitude is affected by good knowledge. If it is related to nutrition, mothers with high knowledge in providing healthy food will encourage mothers to have a positive attitude toward providing healthy food; this includes providing balance food intake to their children.⁸ This study is in line with research in Magelang which reported that mother's attitudes toward providing healthy food to children was in the very high category (68.5%).¹¹

The results of the analysis using SPSS showed that the variable maternal behavior in providing healthy food was 263 or 75.3% of mothers who behaved well and 86 or 24.7% of mothers who behaved poorly. In contrast to attitudes which cannot be seen with the senses, behavior is all activities or individual activities, both those that are directly observed and those that cannot be observed by outsiders.⁸ This study is in line with the results of a study in Bekasi, which reported that the mother's feeding behavior towards school children was included in the 'fairly good' interval category with a percentage of 75.8%.¹⁵

Attitudes manifested in positive and negative judgments will be expressed through behavior. Attitudes towards a behavior are determined by a person's knowledge of the positive and/or negative consequences of that behavior. A person's positive attitude will lead

to positive behavior toward an object as well.¹⁶

From the results of our study data analysis, the nutritional status commonly found in students was normal nutritional status, well nourished (normal). A total of 32 students or 9.2% were in the overweight category and 89 students or 25.6% suffered from obesity. The prevalence of nutritional status (BMI/A) in children aged 5–12 years in DKI Jakarta Province is 1.9% of severe malnutrition children, 6% of malnutrition children, 62.9% of children classified as well-nourished, 15.2% of overweight children, and 14% of children are obese. In addition, the nutritional status in Indonesia is malnutrition (2.4%), undernutrition (6.8%), normal nutrition 70.8%, overnutrition status (10.8%) and obesity (9.2%). When compared with DKI Jakarta, the percentage of undernutrition and malnutrition is above the national average, while the overweight and obese categories are below the national average.¹⁷

Until now, Indonesia still faces complex nutritional problems in almost the entire life cycle, starting from adolescents and pregnant women, stunting, wasting, and undernutrition in toddlers to overnutrition or obesity in adults. This problem is often referred to as the double burden of malnutrition or the double burden of nutritional problems. This problem is the high malnutrition (micro and macronutrient deficiencies) and is accompanied by an increase in obesity cases.¹⁸ This is similar to what occurred in the three elementary schools in Penjaringan District that were studied, and it was found that the highest nutritional status after normal nutrition was obesity (25.6%). Good nutritional status is formed from a balance between the intake of nutrients consumed and the body's metabolic nutritional needs. Impaired nutritional status can make children susceptible to disease. Children who are obese will suffer from non-communicable diseases (NCDs) such as type 2 diabetes mellitus. Children will also experience impaired glucose metabolism later in life, triggering heart disease and blockage of blood vessels.¹⁸⁻²⁰

Research in Surakarta regarding the nutritional status of elementary school children according to BMI/U reported that out of a total of 273 students, 21.97% were overweight. Children who suffer from excess nutrition have a higher risk of developing obesity as adults. This is the same as the multiple nutrition problems currently facing Indonesia, where there has been an increase in obesity cases between 2013–2018, up to 6%

higher than the target of the National Mid-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional, RPJMN*) for 2015–2019.^{18,19}

Children who experience impaired nutritional status from an early age will experience developmental problems throughout their lives. The school-aged phase requires nutritious food intake to support growth and development period. Apart from energy needs, nutritious food intake also affects brain development. If the food does not contain enough of the nutrients needed, and if this condition persists for a long time, it will cause changes in brain metabolism, in which case the ability to think will become lower. In addition, the higher the degree of obesity, the greater a person's risk of experiencing chronic diseases complications. In school-aged children, obesity has an indirect impact on decreasing cognitive function. Meanwhile, children aged 5–9 years will grow into adolescents, which is considered important because adolescents play a role in determining the consumption patterns of the next generation, which is expected to break the chain of malnutrition between generations.^{18,21,22}

The chi-square results in this study regarding the relationship between the level of mothers' knowledge about healthy feeding and children's nutritional status showed $p=0.509$ ($p>0.05$), which means there is no relationship. The results of this study are in line with research in Sukoharjo Regency, which used the Kendall's Tau hypothesis test which also showed $p\text{-value}=0.727$ ($p>0.05$), which means there is no relationship between parental knowledge about nutrition in improving the nutritional status of pre-school-aged children.²⁰ The results of a similar study using correlation from Karl Pearson also revealed an R^2 score of 0.59 on the variable of maternal knowledge in providing healthy food on children's nutritional status. This value means that the mother's knowledge in healthy feeding for the nutritional status of children has contributed effectively by 59%, while the remaining 41% is influenced by other variables not examined in this study, such as environmental, social, and cultural factors.¹¹

The results of the variable analysis test of the mother's attitude in healthy feeding with the child's nutritional status showed $p=0.508$ ($p>0.05$), which means there is no significant relationship between the mother's attitude in healthy feeding and the child's nutritional status. This is different from other studies which states there is a relationship between

the mother's attitude about nutritional status and the child's nutritional status. A mother's attitude is formed from habits and parenting patterns in the family as well as information obtained, both formal and informal. A positive attitude is manifested by being careful in choosing food before giving it to the children so that children's nutritional needs are met with good supervision from the mother.^{20,23}

Analysis of the variable mother's behavior in providing healthy food and the nutritional status of children obtained significant results with a p-value=0.046 ($p<0.05$), which means there is a relationship between mother's behavior in providing healthy food and the children's nutritional status. In this study, 36.3% of mothers with good behavior had children who were overweight. This result is in line with another study in which states that mother's practices or behavior regarding balanced nutrition has a significant correlation with the nutritional status of school-aged children, specifically senior high school children, with a p-value=0.020 ($p<0.05$). Several factors, such as mother's employment status, income, age, educational level, and the nutritional knowledge level influence their feeding practices.¹⁴

This study has several weaknesses, this study does not take parental demographic data such as education, income, age, occupation, and other variables that might affect the results of the study. In addition, this study is umbrella research that includes various other studies on various aspects, so that parents received more than one type of questionnaire a day. Considering that the questionnaires were distributed to students to take home, it does not rule out the possibility that respondents filled out the questionnaires not based on themselves. In addition, some questionnaire are filled out completely, and some are not. Most parents refused to fill in their income.

For further studies, it is recommended to examine other variables that might influence mothers' knowledge, attitudes, and behavior in providing healthy food. In addition, data collection should be carried out in stages with sufficient time to monitor the process of filling out the questionnaire to prevent unwanted bias.

In conclusions, there is no relationship between the mother's knowledge and attitude toward healthy feeding and the children's nutritional status, but there is a relationship between the mother's behavior in providing healthy food and the children's nutritional status. Therefore, parents should pay more

attention to behavior in providing healthy food to children, such as actions in choosing food ingredients, processing food, implementing cleanliness, and providing food to children in everyday life.

References

1. Kementerian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia nomor 41 tentang Pedoman Gizi Seimbang. Jakarta: Kementerian Kesehatan Republik Indonesia; 2014.
2. Biro Komunikasi dan Pelayanan Masyarakat, Kementerian Kesehatan Republik Indonesia. Inilah perbedaan '4 Sehat 5 sempurna' dengan 'gizi seimbang' [Internet]. 2016. [cited 2021 February 26]. Available from: <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20160505/5214922/inilah-perbedaan-4-sehat-5-sempurna-dengan-gizi-seimbang/>
3. Putri RF, Sulastri D, Lestari Y. Faktor-faktor yang berhubungan dengan status gizi anak balita di wilayah kerja Puskesmas Nanggalo Padang. *Jurnal Kesehatan Andalas*. 2015;4(1):254-61.
4. Rahmadhani D, Sumarmi S. Gambaran penerapan prinsip higiene sanitasi makanan di PT Aerofood Indonesia, Tangerang, Banten. *Amerta Nutrition*. 2017;1(4):291-9.
5. Olsa ED, Sulastri D, Anas E. Hubungan sikap dan pengetahuan ibu terhadap kejadian stunting pada anak baru masuk sekolah dasar di Kecamatan Nanggalo. *J Kesehatan Andalas*. 2017;6(3):523-9.
6. Has EMM, Prahasiwi DF, Wahyuni SD, Nursalam, Efendi F. Mothers' behaviour regarding school-aged children's nutrition in Indonesia. *Indian J Public Health Res Develop*. 2018;9(11):317-22.
7. Rahayu A, Khairiyati L. Risiko pendidikan ibu terhadap kejadian stunting pada anak 6-23 bulan. *Nutrition Food Res*. 2014;37(2):129-36.
8. Notoatmodjo S. Promosi kesehatan dan perilaku kesehatan. Rev Ed. Jakarta: Rineka Cipta; 2012.
9. Omran MS. The effect of educating environmental ethics on behavior and attitude to environment protection. *Eur Online J Natural Soc Sci*. 2014;3(3):141-50.
10. Kementerian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan

- Republik Indonesia Nomor: 1995/MENKES/SK/XII/2010 tentang Standar antropometri status gizi anak. Jakarta: Kementerian Kesehatan Republik Indonesia; 2010.
11. Oktaningrum I, Komariah K. Hubungan pengetahuan dan sikap ibu dalam pemberian makanan sehat dengan status gizi anak di SD Negeri 1 Beteng Kabupaten Magelang, Jawa Tengah. *J Pendidikan Teknik Boga*. 2019;8(1):1-9
 12. Wijayanti E. Tingkat Pengetahuan Ibu dalam Pemenuhan Gizi pada Anak Sekolah Dasar Kelas 1-6 di SD Mojoroto II Kota Kediri. *Nusantara Res*. 2015;2(2):165-70.
 13. Anggoro DVT. Hubungan tingkat pengetahuan ibu dengan status gizi anak usia sekolah dasar kelas rendah di SDN Jatian 03 Kecamatan Pakusari Kabupaten Jember (Undergraduate Thesis). Jember: Universitas Jember; 2014.
 14. Khomsan A, Prasetya G. The knowledge, attitude and practice of mothers and children on the Indonesian dietary guidelines and the relationship with children nutritional status. *J Gizi Pangan*. 2021;16(1):55-64.
 15. Indriyani RA. Hubungan pola asuh makan dengan status gizi usia anak sekolah di SDN Teluk Pucung VI Bekasi. *J Kesejahteraan Keluarga dan Pendidikan*. 2018;2(2):77-83.
 16. Marcinkowski T, Reid A. Reviews of research on the attitude-behavior relationship and their implications for future environmental education research. *Environmental Education Research*. 2019;25(4):459-71.
 17. Kementrian PPN/BAPPENAS. Pembangunan gizi di Indonesia [Internet]. 2019 [cited 5 December 2021]. Available from: https://www.bappenas.go.id/index.php/download_file/view/44519/14084/.
 18. Rahmawati T, Marfuah D. Gambaran status gizi pada anak sekolah dasar. *Profesi*. 2016;14(1):72-6.
 19. Bjerregaard LG, Jensen BW, Ångquist L, Osler M, Sørensen TIA, Baker JL. Change in overweight from childhood to early adulthood and risk of type 2 diabetes. *N Engl J Med*. 2018;378(14): 1302-12.
 20. An R, Yan H, Shi X, Yang Y. Childhood obesity and school absenteeism: a systematic review and meta-analysis. *Obes Rev*. 2017;18(12):1412-24.
 21. Devianto A, Maku A, Mendri NK. Hubungan antara status gizi dengan prestasi belajar anak sekolah dasar di SDN Ngringin Depok Sleman Yogyakarta. *Caring*. 2018;7(1):1-8.
 22. Amany T, Sekartini R. Hubungan antara status gizi dengan prestasi belajar siswa SDN 03 Pondok Cina Depok. *Sari Pediatri*. 2017;18(6):487-91.
 23. Suharto A. Mother's behavior on knowledge and attitudes toward child nutritional status in Magetan Regency, East Java, Indonesia. *Open Access Maced J Med Sci*. 2022;10(E):555-9.