
Nutritional Status Among Female Students at SD Negeri 1 Ciloa Kuningan Regency

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Abstract

Nutritional status in school-age children is an important indicator in the growth and development of the nation's next generation that affects academic achievement and productivity in the future. This study aims to determine the nutritional status of female students at SD Negeri 1 Ciloa, Kuningan Regency. This descriptive study was conducted in May 2025 using a total sampling method on all 37 female students. Nutritional status was determined based on the anthropometric index BMI/A through measurements of body weight and height. Data were analyzed univariately using SPSS 24.0. The results of the study showed that 75.7% of female students had good nutritional status, 13.5% were overweight, 8.1% were underweight, and 2.7% were obese. This study identified the phenomenon of a double burden of malnutrition with the simultaneous discovery of malnutrition and overweight problems. Although the majority of female students have good nutritional status, a comprehensive nutritional intervention program is needed through balanced nutrition education, provision of nutritious food in schools, and regular monitoring of nutritional status involving cross-sectoral collaboration to optimize the nutritional status of school-age children.

Keywords: *Nutritional Status, Malnutrition, Overweight, Obese, School Age Children*

INTRODUCTION

The quality of human resources (HR) is one of the components in achieving maximum national development. Assessment of nutritional status is a supporting factor that can help improving the quality of HR that need to be considered throughout the life cycle, starting from pregnancy, infants and toddlers, preschool, school children, adolescents, adults, to old age. Therefore, the fulfillment of adequate nutrition and food is an important component in developing the quality of HR because it affects health status and work productivity (Ariawan et al., 2021; Rahmawati & Marfuah, 2016). One of important indicators in determining the quality of health and growth of the next generation of the nation is the nutritional status of elementary school children. The 2014 Ministry Regulation states the school-age children are defined as children aged >6 years to 18 years. However, school-age children in Indonesia can also defined as children aged 6-15 years and children aged 6-12 years according to the World Health Organization (WHO) (Listrianah et al., 2023) (Fatimah & Nuryaningsih, 2018).

Some changes that occur in school-age children include significant growth and development in terms of social, cognitive, and emotional. These changes have implications for changes in appetite and eating habits as a result of the influence of a new environment. Inappropriate food intake has implications for an imbalance in daily energy intake and expenditure which of course poses a risk of nutritional problems (Listrianah et al., 2023). Nutritional problems in the group of elementary school-aged children are still a serious challenge in national health development, especially in Indonesia, which is related to the incidence of stunting, wasting, obesity, and other nutritional problems that have implications for academic achievement and quality of life in the future (Rahmawati & Marfuah, 2016). Obesity is not only a nutritional problem that occurs in school-age children, but malnutrition problems such as failure or stunted growth are also experienced by many school-age children. Malnutrition in school-age children is also a major nutritional problems that needs to be addressed immediately because it is related to children's unhealthy snacking behavior and the risk of consuming unsafe and unhygienic food (Beer et al., 2015; Wrottesley et al., 2023).

Nationally, based on data from the Survei Status Gizi Indonesia (SSGI), prevalence of stunting in Indonesia has experienced a significant downward trend, reaching 24.4% in 2021 and decreasing in 2022 to 21.6%. This figure continues to decline until in 2024 the prevalence of stunting reaches 19.8%, which is equivalent to 4.482.340 toddlers experiencing stunting. Although the trend of stunting continues to decline, this figure is still relatively high so that special attention is still needed, especially at the school level (J et al., 2022). Elementary school-aged children, especially girls are at a time when children experience a period of rapid growth and development, so specific and balanced nutritional intake is needed to support physical activity and cognitive abilities at school. The occurrence of nutritional problems in elementary school students not only has implications for disrupted physical growth, but also affects learning ability, concentration, and academic achievement. One effective step that can be taken to improve the health of elementary school-age children is to monitor nutritional status at the school level periodically (Rahmawati & Marfuah, 2016; Sinta Zakiyah et al., 2024).

Monitoring the nutritional status of school-age children plays a role in identifying nutritional problems early so that interventions can be given quickly and appropriately. According to UNICEF guidelines, one comprehensive approach to implementing a nutrition program in the school environment includes assessing nutritional status, nutrition education, and providing nutritious food in the school environment. Several factors that influence the nutritional status of elementary school-age children include diet, physical activity, knowledge related nutrition, family socio-economic conditions, and the ability and availability of access to nutritious food. These factors have special characteristics that need to be understood so that they can be used in developing targeted intervention strategies (Ariawan et al., 2021; J et al., 2022).

Research related to the description of nutritional status in elementary school students is one of the important steps taken as an effort to map the nutritional conditions of children at the school level. Data obtained from this study can be used as a basis for developing specific nutritional intervention programs and can contribute to reducing the prevalence of nutritional problems in school-age children.

RESEARCH METHODS

The type of research used is descriptive research to determine the nutritional status in elementary school children. This research was conducted at SD Negeri 1 Ciloa, Kuningan Regency in May 2025. Nutritional status in children is a nutritional status determined based on the anthropometric index (BMI/A) carried out on children aged 5-18 years. Categories for this nutritional status include malnutrition <-3 SD, undernutrition -3 SD to <-2 SD, good nutrition -2 SD to $+1$ SD, overnutrition $+1$ SD to $+2$ SD, and obesity $>+2$ SD. The population in this study were all female students attending SD Negeri 1 Ciloa who were in grades 4,5, and 6. Sampling was carried out by total sampling where all female students in grades 4,5, and 6 were used as research samples.

Anthropometric measurements were conducted on the research subjects by measuring their weight and height. Weight measurements were conducted using a digital foot scale, while height was measured using a microtoise. Data obtained from the research results were tabulated using Microsoft Office Excel with statistical analysis using the Statistical Package for Social Sciences (SPSS) 24.0 for Windows program. The data analysis used was univariate analysis which aims to describe or explain the characteristics of the research variables which include the characteristics of the subjects and nutritional status based on BMI/A.

RESULTS AND DISCUSSION

Characteristics of Subjects

A general overview of the research results obtained data on the characteristics of research subjects who attend SD Negeri 1 Ciloa as presented in Table 1. Characteristic data shows that the majority of research subjects are in grade 5 with a total of 45.9%, and are 11 years old with total of 43.2%. An overview of the results of anthropometric measurements is presented in Table 2. Anthropometric measurements aim to determine the Body Mass Index

(BMI) value of research subjects which is carried out as many as one measurement by weighing using a digital foot scale and measuring height using a microtoise. The results of anthropometric measurements show that the average subject weight is 34.87 kg with a height of 143.48 cm, and the average BMI value is 16.92 kg/m².

Table 1. Characteristic of Subject

Characteristics	n	Percentage (%)	Mean ± SD
Grade			
4	10	27	
5	17	45,9	2 ± 0,7
6	10	27,0	
Amount	37	100	
Age (years)			
10	10	27,0	
11	16	43,2	
12	10	27,0	2,0 ± 0,8
13	1	2,7	
Amount	37	100	

Source : Primary Data, 2025

Table 2. Anthropometric Data

Anthropometric Data	Mean ± SD	Minimum	Maximum
Weight (kg)	34,87 ± 8,5	24,05	71,10
Height (cm)	143,48 ± 7,09	129,00	159,00
Body Mass Index (kg/m ²)	16,92 ± 3,4	11,45	30,00

Source : Primary Data, 2025

Nutritional Status Based on Body Mass Index (BMI) According to Age (BMI/A)

The distribution of nutritional status of research subjects based on Body Mass Index (BMI) by Age (BMI/A) is presented in Table 3. Determination of nutritional status based on BMI/A is done by calculating the z-score value adjusted for the age and BMI value of the research subjects.

Table 3. Nutritional Status based on BMI/A

Nutritional Status	Frequency (n)	Percentage (%)
Malnutrition	0	0
Undernutrition	3	8,1
Good Nutrition	28	75,7
Over Nutrition	5	13,5
Obesity	1	2,7
Amount	37	100

Source : Primary Data, 2025

The results of the study showed of adequate nutritional status at SD Negeri 1 Ciloa, Kuningan Regency, with proportion of female students who had good nutritional status reaching 75.7% (28 female students). This result is in line with previous studies which stated that the majority of elementary school-aged children in Indonesia have good nutritional status with a presentation of 68-75%. The high proportion of good nutritional status indicates that most female students have obtained maximum and adequate nutritional intake to support optimal growth and development (Candra MKes(Epid), 2020).

Although most of students have good nutritional status, this study also found that there was a problem of malnutrition of 8.1% (3 students). This result is lower compared to previous studies that showed the prevalence of malnutrition in elementary school children reached 33.5% (Asmin et al., 2021). This difference in results is possibly caused by several factors such as socio-economic conditions, environmental geographic conditions, food availability, and

access to food that differs between regions. Malnutrition in school-aged children needs special attention, this is because malnutrition in children has implications for decreased cognitive abilities, thus disrupting concentration in learning and decreasing academic achievement (Kristanti & Sebtalesy, 2019).

In addition, this study also found that there were problems of overnutrition of 13.5% (5 female students) and obesity of 2.7% (1 female student). The emergence of problem of undernutrition and overnutrition and obesity simultaneously in elementary school-aged children indicates the phenomenon of a double burden of malnutrition. This phenomenon is related to global trends that show an increase in the prevalence of overweight and obesity in children, including in Indonesia (Oddo et al., 2019; Unicef, 2023; United Nations Children's Fund, 2020). The conditions of overnutrition and obesity that occur in school-age children are at risk of increasing the risk of non-communicable disease, such as type 2 diabetes mellitus, cardiovascular disease in the future if not handled immediately and appropriately (United Nations Children's Fund, 2020).

Nutritional status is influenced by many interacting and complex factors. Some factors that influence nutritional status in school-age children include diet, family nutrition knowledge, socioeconomic status, and access to nutritious food. In general, dietary patterns in school-age children are influenced by the availability of food at home, snacking habits at school, and exposure to high calorie and low nutrient processed foods. In addition, family socioeconomic factors also play a role in determining nutritional status in children. Previous studies have shown that maternal knowledge and dietary patterns have a significant relationship to malnutrition in school-age children. Families with low economic status tend to have limited access to nutritious food, so they are at high risk of malnutrition in children (Ariawan et al., 2021).

Achieving optimal nutritional status in school-age children has a broad impact on health and educational achievement. A longitudinal study showed that children with good nutritional status have better learning achievements than children with malnutrition. This shows the importance of appropriate nutritional interventions to optimize children's potential in academics. Based on the findings of this study, a comprehensive and sustainable nutritional intervention program is needed at the school level (Sahid & Disabilitas, 2021). Intervention programs that can be carried out include balanced nutritional education for both students and parents, provision of nutritious food in the school canteen, and regular monitoring of nutritional status. Of course, all of these intervention activities require cooperation with cross-sectors such as education and health stakeholders so that they can provide maximum impact in improving the nutritional status of school-age children (Asmin et al., 2021; Wrottesley et al., 2023).

CONCLUSION

Most of the students of SD Negeri 1 Ciloa have good nutritional status indicating relatively optimal good nutritional conditions. However, there are still problems of malnutrition (8.1%) and problems of overnutrition and obesity reaching 16.2% which indicate the phenomenon of double burden of malnutrition at the elementary school level. This finding shows the importance of implementing a comprehensive and sustainable nutritional intervention program at the school level including providing balanced nutritional education for students and parents, providing nutritious food in the school canteen, and monitoring nutritional status periodically through cross-sector collaboration between education and health stakeholders.

REFERENCES

- Ariawan, I. G. N., Prihayanti, N. K. T., Purnama, P. M. D. A., Susanti, I. A., Dharmayanti, N. M. S., Diastuti, N. N. P., & Devi, N. L. P. S. (2021). Faktor-Faktor Yang Berhubungan Dengan Status Gizi Pada Anak Usia Sekolah di SD 4 Peneb. *Dunia Keperawatan: Jurnal Keperawatan Dan Kesehatan*, 9(1), 16. <https://doi.org/10.20527/dk.v9i1.8097>
- Asmin, A., Arfah, A. I., Arifin, A. F., Safitri, A., & Laddo, N. (2021). Hubungan Pola Makan Terhadap Status Gizi Anak Sekolah Dasar. *FAKUMI MEDICAL JOURNAL: Jurnal Mahasiswa Kedokteran*, 1(1), 54–59. <https://doi.org/10.33096/fmj.v1i1.9>
- Beer, S. S., Juarez, M. D., Vega, M. W., & Canada, N. L. (2015). Pediatric Malnutrition: Putting the New Definition and Standards Into Practice. *Nutrition in Clinical Practice*, 30(5), 609–624. <https://doi.org/10.1177/0884533615600423>
- Candra MKes(Epid), D. A. (2020). Pencegahan dan Penanggulangan Stunting. In *Epidemiologi Stunting*. https://r.search.yahoo.com/_ylt=Awrwxw_53QaJhPmUA3w_LQwx.;_ylu=Y29sbwNzZzMEcG9zAzQEdnRpZAMEc2VjA3Ny/RV=2/RE=1638052344/RO=10/RU=http%3A%2F%2Fprints.unidip.ac.id%2F80670%2F1%2FBuku_EPIDEMIOLOGI_STUNTING_KOMPLIT.pdf/RK=2/RS=BFSY8aq0Lx1bha7MtII8PgwQwYU-
- Fatimah, & Nuryaningsih. (2018). *Buku Ajar Buku Ajar*.
- J, R. F., Huljannah, N., & Rochmah, T. N. (2022). Stunting Prevention Program in Indonesia: A SYSTEMATIC REVIEW. *Media Gizi Indonesia*, 17(3), 281–292. <https://doi.org/10.20473/mgi.v17i3.281-292>
- Kristanti, L. A., & Sebtaleesy, C. Y. (2019). Hubungan Status Gizi dengan Prestasi Belajar Siswa Sekolah Dasar Negeri Purworejo 3 Kabupaten Madiun. *Jurnal Komunikasi Kesehatan*, X(1), 73–80.
- Listrianah, L., Palembang, P. K., Purba, R., Manado, P. K., & Mayangsari, R. (2023). *E-Book ILMU GIZI* (Issue October).
- Oddo, V. M., Maehara, M., & Rah, J. H. (2019). Overweight in Indonesia: An observational study of trends and risk factors among adults and children. *BMJ Open*, 9(9). <https://doi.org/10.1136/bmjopen-2019-031198>
- Rahmawati, T., & Marfuah, D. (2016). the Description of Nutritional Status of Children At Primary School. *Profesi*, 14(1), 72–76.
- Sahid, M. H., & Disabilitas, K. N. (2021). Hubungan Status Gizi Dengan Prestasi Belajar Siswa Kelas 1-3 Sekolah Dasar. *Jurnal Epidemiologi Kesehatan Indonesia*, 5(2). <https://doi.org/10.7454/epidkes.v5i2.2411>
- Sinta Zakiyah, Nurul Hidayah Hasibuan, Aufa Yasifa, Suhaila Putri Siregar, & Olivia Wahyu Ningsih. (2024). Perkembangan Anak pada Masa Sekolah Dasar. *DIAJAR: Jurnal Pendidikan Dan Pembelajaran*, 3(1), 71–79. <https://doi.org/10.54259/diajar.v3i1.2338>
- Unicef. (2023). Analisis Lanskap Kelebihan Berat Badan dan Obesitas di Indonesia. *Unicef*, 6. [https://www.unicef.org/indonesia/media/16691/file/Ringkasan untuk Pemangku Kebijakan.pdf](https://www.unicef.org/indonesia/media/16691/file/Ringkasan%20untuk%20Pemangku%20Kebijakan.pdf)
- United Nations Children’s Fund. (2020). Landscape analysis tool on overweight and obesity in children and adolescents. In *Unicef*.

Wrottesley, S. V., Mates, E., Brennan, E., Bijalwan, V., Menezes, R., Ray, S., Ali, Z., Yarparvar, A., Sharma, D., & Lelijveld, N. (2023). Nutritional status of school-age children and adolescents in low- and middle-income countries across seven global regions: a synthesis of scoping reviews. *Public Health Nutrition*, 26(1), 63–95. <https://doi.org/10.1017/S1368980022000350>