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An Overview of School-Age Children's Nutritional Status in the Talang Banjar Health Center's Working Area, Jambi City

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Abstract

Background: The nutritional status of children of school age is a significant global concern. The nutritional state of school-aged children significantly impacts their overall health, cognitive development, and educational attainment.

Objective: The objective is to assess the nutritional status of school-age children (7-12 years) residing in the catchment area of the Talang Banjar Health Center, located in Jambi City.

Methods: This research is a quantitative study employing a cross-sectional design. The study population consisted exclusively of moms with children of school age. The sample size in this study was 138, selected using the basic random sampling procedure. Anthropometric standards for children are utilized to evaluate or ascertain the nutritional condition of children. Evaluating the nutritional status of children involves comparing their weight and height measurements with established anthropometric norms. The data were examined utilizing the SPSS program.

Results: The study revealed that 55.1% of the children in the sample had high nutritional status, whereas 20.3% were classified as obese, 16.7% were classified as overnourished, and 8.0% were classified as undernourished.

Conclusion: The majority of children in the sample exhibited satisfactory nutritional status, whereas a minority showed signs of obesity, overweight, or undernutrition.

Keywords: Nutritional Status, School-Age Children

INTRODUCTION

The nutritional status of school-aged children is a significant global concern [1]. In recent years, there has been a steady increase in the prevalence of overweight and obese children and adolescents worldwide. The rate of increase is higher in low- and middle-income countries than to high-income countries. The term used to describe this situation is double burden malnutrition [2]. Double burden malnutrition is the simultaneous presence of both overnutrition and undernutrition, which can have negative effects on the health, IQ, and education of children [3].

The nutritional status of school-age children can be impacted by a range of factors, including dietary choices such as the intake of meat, fish, or eggs; vegetables, beans, and legumes; milk, butter, health drinks, and fast food; and birth order and birth spacing [4]. In addition, children's nutritional status can be influenced by other factors, including the environment, access to nutritious foods, parental education, and

socioeconomic status. To maintain a child's overall health and well-being, it is important to consider all these factors thoroughly [5].

The health, cognitive development and academic performance of school-age children are greatly influenced by their nutritional status. To facilitate the physical maturation and advancement of youngsters attending school, adequate nutrition is essential. Proper nutrition strengthens the immune system and reduces the risk of disease and infection and improves overall well-being [6]. Adequate nutrition is essential for optimal brain function, learning and academic performance. Children with poor nutritional status may have difficulty in cognitive tasks and have lower academic performance [7]. Proper nutrition supports cognitive ability, concentration, and overall mental well-being, allowing children to actively participate in educational activities and achieve better academic results [8].

OBJECTIVE

The objective of this study is to assess the nutritional condition of children between the ages of 7 and 12 in the catchment area of the Talang Banjar Health Center in Jambi City.

METODH

This research is a quantitative study that used a cross-sectional design to assess the nutritional condition of school-age children. It was conducted in January 2024 within the Talang Banjar Health Center Working Area in Jambi City. The study population consisted exclusively of moms with children of school age. The sample size in this study consisted of 138 participants, selected using a basic random sampling procedure. Before collecting data, respondents were granted and secured permission. Data on kid characteristics was collected using questionnaires. Child Anthropometry Standards are utilized to evaluate or ascertain the nutritional condition of youngsters. Evaluating the nutritional status of children involves comparing the measurements of body weight (BW) and height (TB) with established anthropometric norms. The nutritional status evaluation based on the Anthropometric Index is classified according to the category of nutritional status in the WHO Growth Reference 2007 for children aged 5-18 years. The Body Mass Index by age (BMI/U) is utilized to classify individuals into groups of malnutrition, undernutrition, good nutrition, overweight, and obesity. In order to assess the nutritional condition of children, the graph (IMT/U) is utilized and the Permenkes No. 2 category is consulted. The following actions are taken for this purpose.

1. Determine the child's age (full months) correctly, with the following formula:

Measurement date - Child's date of birth (in full months)

2. Calculate the BMI value using the child's weight and height measurement data.
3. Plot on the IMT/U chart

Figure 1. Graph of Body Mass Index by Age of Boys 5 - 18 Years (Z-Scores)

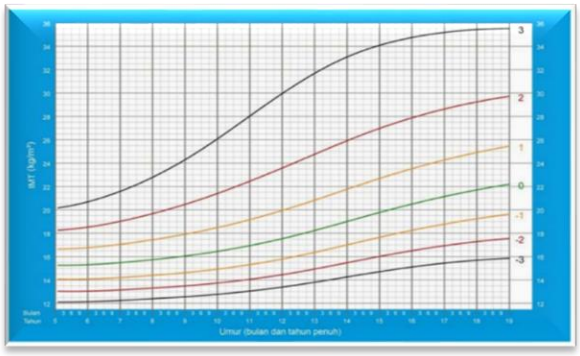

Figure 2. Graph of Body Mass Index by Age of Girls 5 - 18 Years (Z-scores)

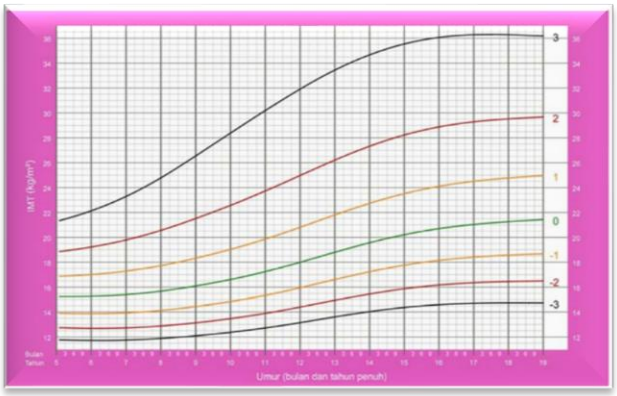

Table 1. Child Nutrition Status Categories and Thresholds

Index	Nutrition Status Category	Threshold (Z-Score)
Body Mass Index by Age of children 5 - 18 years old	Thinness	-3 SD to <-2 SD
	Good nutrition	-2 SD to +1 SD
	Overweight	+1 SD to +2 SD
	Obesity	>+2 SD

The study received ethical approval from the Ethics Committee of the Faculty of Nursing, Andalas University, with the reference number 190.laiketik/KEPKFKEPUNAND. The data were analyzed using the SPSS software, specifically version 26. The analysis incorporated descriptive statistical tests, including frequency distribution and percentage calculations.

RESULT

Table 2: Characteristics of Respondents of School-Age Children

Respondent Characteristics	Frequency (n=138)	Percentage (%)
Age		
7 Years	10	7.2
8 Years	21	15.2
9 Years	40	29
10 Years	9	6.5

11 Years	3	2.2
12 Years	55	39.9
Gender		
Male	77	55.8
Female	61	44.2

Based on Table 2, the majority of respondents were aged 12 years, 39.9%. The gender of the respondents was mostly male, 55.8%.

Tabel 3. Kategori Status Gizi Anak

Nutritional Status	Frequency (n=138)	Percentage (%)
Thinness	11	8.0
Good nutrition	76	55.1
Overweight	23	16.7
Obesity	28	20.3

According to the data in Table 3, the majority of respondents fall into the category of good nutritional status (55.1%), whereas 20.3% are classified as obese.

DISCUSSION

The results showed that the prevalence of good nutrition was high. The majority of children in the sample showed good nutritional status (55.1%). This is an encouraging result, indicating that most children have adequate nutritional intake to support their growth and development. In addition, the results also showed a high prevalence of obesity. Although good nutritional status dominated, obesity (20.3%) and overnutrition (16.7%) were still significant. This suggests that there is a prevalence of obesity among the group of school-age children examined. This finding aligns with the study conducted by Aboagye et al., (2022) which demonstrated that the occurrence of overweight/obesity was 24.8% (95% CI = 20.8-29.2). Specifically, the prevalence of overweight was 11.1%, while the prevalence of obesity was 13.7%. Obesity and excessive nutrition are linked to an increased probability of early death and impairment in adulthood. Additionally, children who are overweight are more likely to continue being fat as adults, which raises the risk of developing non-communicable diseases (NCDs) like diabetes and heart disease [11]. Overweight and obesity in school-age children have direct effects, such as an increased susceptibility to asthma and cognitive impairment. Additionally, there are social and economic repercussions for the kid, family, and community. Overweight and obesity throughout childhood have long-term consequences, including an elevated risk of obesity, diabetes, heart disease, certain malignancies, respiratory disease, mental health disorders, and reproductive disorders in adulthood [12].

The findings further indicate that undernutrition is a concern. Despite its relatively low prevalence (8.0%), undernutrition remains an important concern. Malnutrition in school-age children has a significant effect on both physical and cognitive development, and raises the likelihood of contracting infectious infections and other health complications. Undernutrition is associated with stunting, underweight and wasting, indicating growth failure due to inadequate food intake and infection. In addition, malnutrition can also reduce disease resistance, lower cognitive capacity and impair educational achievement. Addressing undernutrition in school-age children is therefore crucial to ensure their optimal growth, development and health [13].

To address the growing concerns about obesity, overnutrition and undernutrition among school-aged children, sustainable and targeted nutrition interventions are essential. These interventions should focus on improving healthy eating patterns, nutrition education for children and parents, and increasing access to nutritious foods at school and at home [14, 15, 16]. Overall, evidence supports the need for comprehensive and targeted nutrition interventions involving schools, families and communities to address the growing public health problems of childhood obesity and malnutrition [17].

Additional examination is required to comprehend the environmental and socio-economic elements that could impact the nutritional condition of school-age youngsters in the sample. These factors include accessibility to nutritious foods, nutrition education, environmental policies, and family socio-economic conditions [6, 18, 19].

CONCLUSION

The findings indicated that most of the children in the sample had a favourable nutritional state, with a few being classified as obesity, overweight, or undernourished.

CONFLICT OF INTEREST

The authors affirm that they have no potential conflicts of interest related to the research, authorship, and/or publication of this paper.

REFERENCES

1. Modjadji P, Madiba S. The double burden of malnutrition in a rural health and demographic surveillance system site in South Africa: A study of primary schoolchildren and their mothers. BMC Public Health. 2019;19(1):1–11.
2. Alem AZ, Yeshaw Y, Liyew AM, Tessema ZT, Worku MG, Tesema GA, et al. Double burden of malnutrition and its associated factors among women in low and middle income countries: findings from 52 nationally representative data. BMC Public Health [Internet]. 2023;23(1):1–16. Available from: https://doi.org/10.1186/s12889-023-16045-4
3. Adeomi A, Fatusi A, Klipstein-Grobusch K. Double burden of malnutrition among school-aged children and adolescents: evidence from a community-based cross-sectional survey in two Nigerian States. AAS Open Res. 2021;4:38.
4. Chakraborty M, Ghosh S. Factors Influencing the Nutritional Status Among Children of 6–11 Years of Age: A Case Study from an Indian Megacity. J Health Manag. 2020;22(1):78–95.
5. Pongutta S, Ajetunmobi O, Davey C, Ferguson E, Lin L. Impacts of School Nutrition Interventions on the Nutritional. Nutrients. 2022;14:1–16.
6. Khan DSA, Das JK, Zareen S, Lassi ZS, Salman A, Raashid M, et al. Nutritional Status and Dietary Intake of School-Age Children and Early Adolescents: Systematic Review in a Developing Country and Lessons for the Global Perspective. Front Nutr. 2022;8(February):1–18.
7. Ayalew M, Bayray A, Bekele A, Handebo S. Erratum: Nutritional status and educational performance of school-aged children in lalibela town primary schools, Northern Ethiopia (International Journal of Pediatrics (2020) 2020:9 (5956732) DOI: 10.1155/2020/5956732). Int J Pediatr (United Kingdom). 2020;2020.
8. Ansuya, Nayak BS, Unnikrishnan B, Shashidhara YN, Mundkur SC. Effect of nutrition intervention on cognitive development among malnourished preschool children: randomized controlled trial. Sci

Rep [Internet]. 2023;13(1):1–8. Available from: https://doi.org/10.1038/s41598-023-36841-7
9. P2PTM Kemenkes RI. Batasi Konsumsi Gula, Garam, & Lemak [Internet]. 2021. Available from: https://p2ptm.kemkes.go.id/infographic-p2ptm/hipertensi-penyakit-jantung-dan-pembuluh-darah/page/14/yuk-batasi-konsumsi-gula-garam-dan-lemak-anda
10. Aboagye RG, Kugbey N, Ahinkorah BO, Seidu AA, Cadri A, Bosoka SA, et al. Nutritional status of school children in the South Tongu District, Ghana. PLoS One. 2022;17(8 August):1–13.
11. World Health Organization. Noncommunicable diseases: Childhood overweight and obesity [Internet]. World Health Organization. 2020 [cited 2024 Apr 24]. Available from: https://www.who.int/news-room/questions-and-answers/item/noncommunicable-diseases-childhood-overweight-and-obesity
12. World Health Organization. Overweight in school-age children and adolescents [Internet]. WHO. 2022 [cited 2024 Apr 24]. Available from: https://www.who.int/data/nutrition/nlis/info/overweight-in-school-age-children-and-adolescents
13. Aiga H, Abe K, Andrianome VN, Randriamampionona E, Razafinombana AR, Murai T, et al. Risk factors for malnutrition among school-aged children: A cross-sectional study in rural Madagascar. BMC Public Health. 2019;19(1):1–13.
14. Pereira AR, Oliveira A. Dietary interventions to prevent childhood obesity: A literature review. Nutrients. 2021;13(10):1–17.
15. Nury E, Stadelmaier J, Morze J, Nagavci B, Grummich K, Schwarzer G, et al. Effects of nutritional intervention strategies in the primary prevention of overweight and obesity in school settings: systematic review and network meta-analysis. BMJ Med. 2022;1(1):e000346.
16. Shinde S, Wang D, Moulton GE, Fawzi WW. School-based health and nutrition interventions addressing double burden of malnutrition and educational outcomes of adolescents in low- and middle-income countries: A systematic review. Matern Child Nutr. 2023;(September):1–36.
17. Xu H, Ecker O, Zhang Q, Du S, Liu A, Li Y, et al. The effect of comprehensive intervention for childhood obesity on dietary diversity among younger children: Evidence from a school-based randomized controlled trial in China. PLoS One [Internet]. 2020;15(7 July):1–16. Available from: http://dx.doi.org/10.1371/journal.pone.0235951
18. Kwabla MP, Gyan C, Zotor F. Nutritional status of in-school children and its associated factors in Denkyembour District, eastern region, Ghana: Comparing schools with feeding and non-school feeding policies. Nutr J. 2018;17(1):1–8.
19. Nurhaedah, Fitri L, Asmy U. Analysis of factors associated with nutritional status in school-age children at SD Negeri 10 Benteng Sidrap Regency. Int J Heal Sci. 2024;2(1):1–143.