

ORIGINAL ARTICLE**ASSESSMENT OF CHILDREN NUTRITIONAL STATUS IN A GOVERNMENT SCHOOL OF RURAL AREA IN SIALKOT**

Sahibzada Masood us Syed¹, Muhammad Hassan Zia², Muhammad Ameer Hamza³, Sharjeel Shakeel⁴, Shahwaiz Khalid⁵, Mughees Khalid⁶, Syed Ausaf Ali Shah⁷

<p>Affiliations</p> <p>1. Professor & Dean Research & Academics, Sialkot Medical College, Sialkot sahibzadadsyed786@gmail.com</p> <p>2-6 MBBS students at Sialkot Medical College, Sialkot muhammadhassanzia4thyear2023@smcs.com.pk muhammadameerhamza4thyear2023@smcs.com.pk sharjeelshakeel4thyear2023@smcs.com.pk shahwaizkhalid4thyear2023@smcs.com.pk mugheeskhalid4thyear2023@smcs.com.pk</p> <p>7. GDMO, Jalal Pur Jattan Cantt. Email: ausafshah111@gmail.com</p> <p>Corresponding Author: Prof. Dr. Sahibzada Masood Us Syed, MAJRAF Medical Center, Commissioner Road, Sialkot Contact # 0333-8605380 Email: sahibzadadsyed786@gmail.com</p>	<p>Abstract:</p> <p>Objective: To assess the nutritional status of children in rural area of Sialkot.</p> <p>Methodology: A cross-sectional, observational and descriptive study was conducted in May- June, 2023 on 100 students of Government School Gunki, Sialkot.</p> <p>Result: This study shows that out of 100, 72% students were underweight (out which 48% Were mildly underweight), 24% Students were in normal weight and 4% Students were obese.</p> <p>Conclusion: Malnutrition was found in 72% of Children of Government School.</p> <p>Keywords: Mal-nutrition, under-nutrition, obese, underweight, overweight</p> <p>Cite this Article as: Syed S.M., Zia M.H., Hamza M.A., Shakeel S., Khalid S., Khalid M., Shah S.A.A.; <i>Assessment of Nutritional Status of Children in a Government School of Rural Area in Sialkot. SIAL J Med. Sci. 2023 V-2 (Issue-05):46-48</i></p>
--	--

Introduction:

Nutrition is the study, how the body breaks down food, how it repairs and grows itself, and how it uses nutrients to maintain health. According to the World Health Organization (WHO), nutrition is "the intake of food, considered in relation to the body's dietary needs." Proper nutrition is essential for good health and is a key factor in preventing and treating many chronic diseases.¹

Nutrition plays a crucial role in maintaining optimal health and well-being. It refers to the process of providing the body with the necessary nutrients, such as carbohydrates, proteins, fats, vitamins, minerals, and water, which are essential for growth, development, and the proper functioning of the body.²

Macro nutrients are nutrients that are required in relatively large quantities by the body to provide energy and support growth and development like carbohydrate, fats

and proteins while the micro nutrients are nutrients that are required in smaller quantities but are essential for various physiological functions. They include vitamins and minerals.³

Malnutrition refers to a condition that occurs when the diet of an individual lacks the proper nutrients necessary for growth, development, and overall health. It can manifest in various forms, including under-nutrition, over-nutrition, and micronutrient deficiencies. Malnutrition can affect people of all ages, but it is particularly detrimental to infants, children, pregnant women and old people.⁴

Under-nutrition occurs when individuals do not consume enough calories, protein, or other essential nutrients, which leads to stunted growth, weight loss, and increased susceptibility to infections. Severe cases of under-nutrition can result in conditions like kwashiorkor and marasmus in children. However, over-nutrition, on the other hand,

refers to the excessive intake of calories, often accompanied by a lack of proper nutrients. This can lead to obesity and an increased risk of chronic diseases, such as cardiovascular disease, type-II diabetes, and certain types of cancer.⁵

Malnutrition can result from a combination of factors, including inadequate food intake, poor dietary diversity, poverty, food insecurity, limited access to nutritious foods, lack of education about proper nutrition, and underlying health conditions that affect nutrient absorption or utilization.⁷

Malnutrition is a significant global health issue. According to the World Health Organization (WHO), nearly half of all deaths in children under 5 years of age are attributable to under-nutrition. Meanwhile, over-nutrition and associated obesity have reached epidemic proportions in many countries. Malnutrition has long-term consequences for the individuals and the communities. It can impair physical and cognitive development, increase the risk of chronic diseases later in life, resulting in reduced work productivity, and finally hinder economic development.⁸

Objective:

To assess the nutritional status of children in rural area of Sialkot.

Methodology

A cross-sectional, observational and descriptive study was conducted in May-June, 2023 on 100 students of Government School Gunki, Sialkot. The 100 participants were chosen by systematic random sampling.

Sampling selection: Samples were selected using balloting of 20 students from class 04 to class 10.

Duration of study: May-june 2023

Results

We collected data of 100 students of age (10 -18 years) of a government high school Ghunki.

Age	No of students	Class	%
10 yrs	2	4	2%
11 yrs	5	5	5%
12 yrs	12	6	12%
13 yrs	26	7	26%
14 yrs	34	8	34%
15 yrs	15	9	15%
16 yrs	4	10	4%
17 yrs	1	10	1%
18 yrs	1	10	1%

Figure-I: Following is distribution of students according to age

BMI	No of students	%
< 18	72	72 %
18 - 25	24	24 %
>25	4	4 %

Figure-II: In these students the BMI status was as follows

This study shows that out of 100, 72% students were underweight (out which 48% Were mildly underweight), 24% Students were in normal weight and 4% Students were obese.

Discussion

In this study 72% children having BMI less than 18 that means mal-nutrition. Our findings coincide with the WHO figures and National Nutrition Survey of Pakistan which gave the figure of more than 60% mal-nutrition in Pakistan.⁹

Nutritionists have argued that children in less developed countries can attain their optimum weight and height if the environment is conducive to their health and nutritional status. Thus, it has been suggested that growth standards developed in industrialized countries (e.g. NCHS/CDC growth reference) are appropriate for measuring children in less developed

countries said by Graitcer & Gentry in 1981. However, Eveleth & Tanner in 1990 described it as a misconception to assume that the growth of healthy populations is the same (at least up to the age of 5 years old) and concluded that they should not be represented by a universal standard.⁵

Chen in 1976 found that although the growth achievement of Malaysian school children from the three ethnic groups (Malay, Chinese and Indian) differed as a whole, the growth achievement of higher income group children among the three ethnic groups did not differ significantly. However, when the weights and heights of these children (all ethnic groups from lower and upper income groups) were compared to the Boston reference, even the higher income school children were lighter and shorter than the Boston children. These findings indicate that the differences in growth achievement of these children from the three ethnic groups are probably due to environmental differences, rather than genetic differences. However, environmental and perhaps genetic factors may contribute to the differences in weight and height attainment between Malaysian school children and Boston children.⁵

Osman, Suhardi & Khalid (1993) conducted a study to compare the anthropometric measurement patterns of Malay children from wealthy families to the NCHS reference population. Eight hundred and seventy one children (3-12 years old) were measured for their heights, weight and skinfold thickness. The children had similar increment patterns of weight-for-age and height-for-age to the NCHS reference population, except that they had lower median weight-for-age which may be influenced by their birth weights and genetic factors. Body mass index and skinfold thickness (triceps and biceps) measurements of these children were also similar to that of the NCHS and HHANES reference populations. It was concluded

that Malay children from higher income groups have growth rates comparable to the children in industrialized nations and that the NCHS percentile charts are suitable as a reference for comparing the nutritional status of Malay children in Malaysia.

Conclusion

Malnutrition was found in 72% i.e. majority of Children of Government School.

Recommendation

As this study found that underweight is prevalent, there is a need for the Ministry of Education and Ministry of Health to adopt a more intensive approach to address health and nutrition issues in this age group. Health and nutrition monitoring is essential so that effective interventions can be implemented to alleviate poverty and consequently eliminate the health and nutritional problems among these children. It is recommended that active growth monitoring (by using the existing growth data collected by the schools) of the school children may be implemented as it is an easy and inexpensive tool for healthcare professionals to obtain information on the health and nutrition of the school-age population.

References

1. All things Nittany (August, 2023) retrieved from <https://www.who.int/news-room/factsheets/detail/nutrition>
2. All things Nittany (August, 2023) retrieved from World Health Organization (WHO). Nutrition. Available online: <https://www.who.int/health-topics/nutrition>
3. Gropper, S. S., Smith, J. L., & Groff, J. L. (2018). *Advanced Nutrition and Human Metabolism*. Cengage Learning
4. All things Nittany (August, 2023) retrieved from World Health Organization (WHO). Mal-nutrition. Available online: <https://www.who.int/news-room/q-a-detail/malnutrition>
5. All things Nittany (August, 2023) retrieved from Malaysian journal of nutrition 6 (1), 17-32, 2000 https://nutriweb.org.my/mjn/publication_06-1/b.pdf
6. All things Nittany (August, 2023) retrieved from Int J Nutr Food Sci 2 (6), 320, 2013 [HTTPS://WWW.ACADEMIA.EDU/DOWNLOAD/75982649/10.11648.J.IJNFS.20130206.19.pdf](https://www.academia.edu/download/75982649/10.11648.J.IJNFS.20130206.19.pdf)
7. All things Nittany (August, 2023) retrieved from Food and nutrition bulletin 31 (2), 221-233, 2010 Background <https://journals.sagepub.com/doi/pdf/10.1177/156482651003100205>
8. All things Nittany (August, 2023) retrieved from BMC public health 17, 1-11, 2017 <https://link.springer.com/article/10.1186/s12889-016-4001-1>
9. All things Nittany (August, 2023) retrieved from UNICEF Organization Pakistan National Nutrition Survey 2018(NNS-2018) www.unicef.org.pk