

Prevalence of Malnutrition in School Going Children (6-10 yrs old) of Semi Urban Areas in Lucknow District – A cross Sectional Study

Mansi Gangwar^{1*}, Priyanka Shankar²

¹PG Student, Department of Food and Nutrition, School of Home Science, Babasaheb Bhimrao Ambedkar University, Lucknow, India

²Assistant Professor, Department of Food and Nutrition, School of Home Science, Babasaheb Bhimrao Ambedkar University, Lucknow, India

Abstract: Introduction: School going children represent a nation's future, and their dietary needs are vital for society's well-being. Addressing this issue could be a critical step in breaking the vicious intergenerational cycle of hunger, chronic diseases, and poverty. **Objectives:** To study malnourishment children in the selected of Lucknow District. To collected data regarding malnourishment children (Socio, demographic data) and of selected respond. **Materials and Methods:** This descriptive cross sectional study was carried out from February to march, 2022 among 6-10 year old government primary school children in semi urban, sector-6, block C, Rajajipuram Lucknow, Uttar Pradesh, India. A total of 40 study participants were chosen by systematic random sampling. The information collected in the pre-designed questionnaire was utilised to investigate the prevalence of under nutrition as defined by the Indian Academy of Pediatrics (IAP). MS Excel Spreadsheet version 2007 was used for statistical analysis. Clinical status assessing anemia was also recorded. **Results:** There were 40 females in every 100 children. 46 (47.5%) of the children were of average weight for their age. Malnutrition was discovered in 60 percent of the people. Under nutrition, the most prevalent grade was I (27.5%) followed by Grade II (17.5%) and Grade III (7.5%). None of the study participants had Grade IV under nutrition. Breathlessness and fatigue were reported by 22.5 and 20% of the participants, respectively. Poor anthropometric indices, undernutrition, and iron deficiency anaemia may be caused by a lower-than-recommended food and nutrient intake. **Conclusions:** Nutrition education plays an important role in helping the children adopt healthy and hygienic dietary practices. The most pressing requirement is to give sanitary and nutritious food to children so that our country's future generation can grow up healthy and disease-free.

Keywords: Nutritional status, Primary school children, Malnutrition, Anthropometric assessment, Clinical status.

1. Introduction

Malnutrition is one of the world's most serious health issues, and the WHO's biggest concern today. Malnutrition remains our country's most serious health concern, despite government and non-government attempts to eradicate it. There is a growing recognition that good nutrition is a critical first step toward bettering one's quality of life. Malnutrition has a variety of causes that are multifaceted and interconnected. Malnutrition in children is caused by a variety of factors, including infection,

family size, parental education, nutritional taboos, and family economic position [1].

There is evidence that many portions of these developing countries' diets are insufficient in macronutrients (protein, carbs, and fat, which can contribute to protein-energy malnutrition), micronutrients (minerals and vitamins), or both [2].

Nutrition is one of a living organism's most basic needs for growth and survival. However, the quality and quantity of nutrients required for optimal growth and maintaining good health throughout an organism's life span vary with age. Any major deviation in nutrient intake, either in terms of quality or quantity, from its requirements can have a variety of effects on growth and life duration, particularly in later periods when nutrition has a greater influence on growth [3].

Childhood (ages 6-10) is a unique developmental period during which children go through significant physical, cognitive, and social changes. Children begin school during this time, and their social context expands outside their families. Nutrition is the study of the link between food and the functioning of living organisms. Nutritional status refers to a person's overall health as determined by nutrient intake and utilisation in the body [4]. A practical platform for delivering an integrated package of interventions, such as nutritious meals or snacks, is the school. Nutritional status refers to a person's overall health as determined by nutrient intake and utilisation in the body. [5].

The school age period are important nutritionally because they are the best time to build up nutrient stores in preparation for adolescent growth. Underweight, wasting, poor resistance to infection, stunted growth, and impaired cognitive development and learning are all consequences of a protein/calorie insufficient diet in children. In school-aged children, however, iron deficiency is linked to stunted growth, lowered immunity, poor cognitive development, and behavioural problems. [6].

Childhood malnutrition causes delayed cognitive development and major health problems later in life, lowering the quality of life of those affected. Eighty-eight percent of

*Corresponding author: mansigangwar0505@gmail.com

children in primary school. In this context, it is underlined that a knowledge of primary school children's nutritional state has far-reaching implications for future generations' healthy development. The goal of this study is to find out how common undernutrition is among government elementary school students [7].

As a result, it's critical to understand the nutritional status of schoolchildren, who are the foundations of the state and country. As a result, the current study was conducted in Lucknow with the following objectives:

- To study malnourishment children in the selected of Lucknow District.
- To collect data regarding malnourishment children (Sociodemographic data) and of selected respond.

2. Materials and Methods

A. Sampling, Data Collection and Analysis

During February and March 2022, a cross-sectional survey was conducted among school students in classes I to V, aged 6 to 10, at a government primary school in the semi-urban, sector-6, block C, Rajajipuram, Lucknow, Uttar Pradesh, India. According to the National Nutrition Monitoring Bureau, moderate under nutrition is common among primary school children in India. The study sample consisted of each class's students, chosen by systematic random sampling.

The Institutional Ethical Committee provided ethical approval. After clarifying the study's purpose, the school administration granted written authorization. A predesigned questionnaire was used to collect data on personal identity details, anthropometry, nutritional deficiencies, and other morbidities on the school grounds. The children's weights were recorded using standard anthropometric protocols. Children with their school uniform minus footwear were made to stand on the weighing machine and weight recorded with accuracy to 100g. Weight for age was chosen as the measure of nutritional status, and school records were utilized to determine the child's age. The data was then input into MS Excel and analyzed using descriptive and inferential statistics. MS Excel 2007 was used for statistical analysis.

All the selected children were examined for the presence or absence of any clinical signs and symptoms of anemia, including paleness of nails and conjunctiva. The procedure followed for the clinical survey.

3. Result

Data obtained was analyzed with respect to the objectives of the present study which were to find the prevalence of under nutrition and iron deficiency anemia among children. 6 to 10 year old, 40 children were surveyed.

A total of 40 children from government primary schools were studied. The baseline characteristics of the study subjects are shown in Table 1. There were 40 girls.

Table 2 shows that maximum (63.6%) malnourished children were in the 6 to 7 year age group when compared with the other age groups.

Table 1
Distribution of respondent according to age

Girls		
Age	Number of subjects	Percentage
6 to 7 years	11	27.5
8 to 9 years	18	45
10 years	11	27.5
Total	40	100

Table 2
Age-wise distribution of nutritional status of the study subjects

Age group	Malnutrition (%)	Normal (%)	Total (%)
6 to 7 years	7(63.6)	4(36.3)	11(100)
8 to 9 years	11(61.1)	7(38.8)	18(100)
10 years	6(54.54)	5(45.4)	11(100)
Total	24(60)	16(40)	40(100)

Table 3
Nutritional status as per IAP classification

Age in year	Nutritional status %				Total
	Normal	Grade I	Grade II	Grade III	
6 -7 years	5(38.4)	3(23.07)	3(23.07)	2(15.3)	13(100)
8-9 years	8(53.3)	4(26.6)	2(13.3)	1(6.6)	15(100)
10 years	6(50)	4(33.3)	2(16.6)	0	12(100)
Overall	19(47.5)	11(27.5)	7(17.5)	3(7.5)	40(100)

The prevalence of malnutrition was found to be apparently more among the female children. Therefore, chi square test of significance was applied to see if there was any statistically significant association.

Table 4
Clinical Status of children (6-10 years)

Clinical Signs	N =40	Percentage
Pale conjunctiva	2	5
Spoon Shaped Nails	3	7.5
Pale nails	2	5
Tiredness	8	20
Dull hair	3	7.5
scaly/flaky	1	2.5
Breathlessness	9	22.5

Spoon shaped nails in 7.5% of the subjects. Conjunctiva paleness was noticed only in a small proportion (5%) of the subjects. The high prevalence of anemia among the children surveyed could be related to the inadequate diet, poor socio-economic status, unhygienic environment and lack of parent's education.

4. Discussion

In the current study, 47.5% of the participants were of normal weight for their age. Under nutrition, the most prevalent was grade I (27.5%) followed by Grade II (17.5%) and Grade III (7.5%). Under nutrition, none of the youngsters had a grade IV. Malnutrition is the leading cause of illness and tiredness among school children in India, according to several surveys, followed by infectious diseases, intestinal parasites, eye and nails, and dental hair. Similar to what NNMB discovered, there was no statistically significant link between age and malnutrition prevalence. According to the Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys, there was no statistically significant difference in the prevalence of under nutrition among female children (DHS). Breathlessness

and fatigue were reported by 22.5 and 20% of the participants, respectively. Poor anthropometric indices, under nutrition, and iron deficiency anaemia may be caused by a lower-than-recommended food and nutrient intake.

5. Conclusion

The results of this study show that assessing the nutritional condition of children in elementary school provides reassurance regarding the child's health. The school authorities were given information regarding the nutritional status of the study subjects so that they may inform the parents and local health personnel and take appropriate and timely action. Prevention can be achieved by promoting healthy eating habits through good nutrition education.

References

- [1] Shashank KJ. et.al, (2016) "Nutritional Status of School Going Children Between the Age Group Of 6-12 Yrs in Rural Area of Bijpaur District" a review *National Journal of Community Nutrition*.
- [2] Ijarotimi, O. S. Determinants of Childhood Malnutrition and Consequences in Developing Countries. *Curr Nutr Rep* 2, 129–133 (2013).
- [3] Saxena S. et.al, (2014) "Malnutrition among School Children of Lucknow" a review *International Journal of Science and Research*.
- [4] Mishra S. et.al, (2013) "Malnutrition among School Children of Lucknow". Selective and scientific book publisher & distributor.
- [5] Neufingerl, N., et.al, (2010), "The nutritional status of school –aged children" a review *International Journal of Science and Research*, Volume 3 Issue 6.
- [6] Handa R. et.al, (2008) "Assessment of Nutritional Status of 7-10 Years School Going Children of Allahabad District" a review *Middle-East Journal of Scientific Research*.
- [7] Subhaprada S. et.al (2015) "Nutritional Status of Government Primary School Children in an Urban Slum, Kurnool, Andhra Pradesh" *International Journal of Current Medical and Applied Sciences*, vol.6. Issue 3, May 2015, pp. 167-170
- [8] National Nutrition Monitoring Bureau Technical Report No. 21, NIN, India 2002
- [9] Nutrition Sub-committee of Indian Academy of Pediatrics: Report, Indian Pediatrics, 9: 360, 1972.