



## PHYSICAL GROWTH AND NUTRITIONAL STATUS ASSESSMENT OF SCHOOL CHILDREN OF 6-12 YEARS IN SOCIOECONOMICALLY CHALLENGED AREAS OF RURAL BURHANPUR (MADHYA PRADESH)

Nutritional Science

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### ABSTRACT

Stronger immunity, fewer illnesses, improved health, and a productive society are all results of good nutrition. The majority of school-age children in India are undernourished or malnourished. Anthropometry is a quick and easy way to evaluate a child's dietary and socioeconomic status as they grow. Physical development, measured by weight and height, is seen as a crucial indicator of a community's growth and progress. So the aim of this study was to determine the prevalence of stunting and wasting. 150 children between the ages of 6 and 12 from socioeconomically deprived parts of rural Burhanpur were selected using the purposive sampling (volunteering) method and their heights and weights assessed using standardised techniques. Weight-for-age z-score (WAZ) BMI-for-age z-score (BAZ) and Height for age Z (HAZ) scores were calculated, and WHO growth references were used to categorise nutritional status. The prevalence of stunting, wasting and underweight children was found very high. . The overall prevalence of stunting was 72%, wasting was 77.94% and underweight students for their age were 66.73% as per WHO's international standards. School-aged children are frequently left out of surveys and surveillance programmes for nutrition and health. Therefore, there is a need for a nationwide health and nutritional survey that includes school-age children. The government of India needs to start a comprehensive nutrition education programme. Hence nutrition intervention programs should be launched among school children of rural Burhanpur district.

### KEYWORDS

school age children, good nutrition, nutritional status, growth references

### INTRODUCTION

Physical growth of a child is a reflection of its state of nutrition. In developing countries, the nutritional status of the children is a reflection of the general well-being of the society. Children's growth is a fundamental characteristic; a child's development is entirely dependent on the satisfaction of his basic needs, which must be met for higher growth to take place. Being at school is a big deal because this is when the body stores the majority of its nutrients. Children's rapid growth is aided by these stores. Assessing growth requires accurate measurement at regular intervals. One of the main effects of the relationship between nutrition and environment is thought to be physical growth. Early childhood physical development is thought to be one of the most accurate and sensitive indicators of a person's health and nutritional status. A community's health status can be ascertained as well as national and local policy can be designed with the help of an assessment of children's nutritional status.

In the study of food and nutrition evaluation, the formative years of childhood and adolescence are crucial since they are the time when future adult eating patterns are created. Malnutrition (under nutrition and over nutrition) affects a person's growth, development, and physical fitness over the long term and is a significant health problem in many developing nations. Even though under nutrition is hard to measure, its existence is frequently confirmed in public health and clinical contexts using anthropometry, more specifically weight and height.

Anthropometric measures are still the main method for determining how well-nourished children are. They are also applied in clinical settings to evaluate health intervention programmes and monitor children's growth patterns. Anthropometrics can be sensitive indications of a child's or infant's growth, development, and health. The only widely applicable, affordable, and non-invasive method for determining the dimensions, proportions, and makeup of the human body is anthropometry. The most significant element of society is the school-age population. Children's nutrition is an important part of living a healthy life. It also contributes to the healthy development of the mind and body. A lack of basic health education, poverty, bad feeding habits, and irrational beliefs all contribute to these children's low health and nutritional status in India. Children are the nation's wealth, not only do they constitute a sizable section of the population, but they are also a "vulnerable" or at-risk category.

The nation's future is in the hands of the school-age population, which makes up around one-fifth of the overall population. The school age era is important in terms of nutrition because this is the ideal time to increase nutrient storage in the body in order to prepare for the rapid growth of adolescence. Children regularly develop new tissues and

replace their ageing ones. Compared to adults, they have larger dietary needs per unit of body weight. Under nutrition and malnutrition of some sort will unavoidably occur if children do not obtain the nutrition they require; the type and extent will depend on the type and quality of nutrients lacking in diets. The most important health issue in the world and the leading cause of child death continues to be malnutrition. More than 30% of people living in impoverished countries have micronutrient deficiencies, and nearly one-third of children there are either underweight or stunted. 20-30 % of elementary school students are malnourished.

Stronger immunity, improved health, and increased productivity are all benefits of good nutrition. About one fifth of all Indians are in the age bracket of 6 to 12 years old. During the adolescent growth spurt, the body needs a lot of nutrients that should have been stored in the body during childhood; otherwise, unfavourable health effects like growth retardation, academic regress, and lower labour ability may occur.

### METHODOLOGY

The current study was a community-based investigation, and the sample was chosen using a systematic purposive random sampling technique. Through the use of the purposive sampling (volunteering) method, 150 children between the ages of 6 and 12 from rural Burhanpur's socioeconomically disadvantaged areas were chosen. The mothers gave their previous approval. School children between the ages of 6 and 12 had their heights and weights assessed using standardised techniques. We measured weight and height using an electronic weight. Height and weight were measured to the nearest 0.1cm and 0.1kg respectively. We instructed the kids to take off their shoes and any bulky clothing aside from their school uniforms before obtaining their measurements. Each respondent was required to stand on the scale without using any kind of assistance, with their feet together, their hands by their sides, and their heads pointing ahead. The child's head was put on top of the height board, and the reading was then taken behind the youngster at a right angle to the board (wall).. Height and weight were measured, and the Body Mass Index (BMI) was calculated [weight (kg)/height (m) <sup>2</sup>]. Weight-for-age z-score (WAZ) BMI-for-age z-score (BAZ) and Height for age Z (HAZ) scores were calculated, and WHO growth references were used to categorise nutritional status. The frequency and standard deviations (SDs) of the anthropometric measurements were calculated using descriptive statistics.

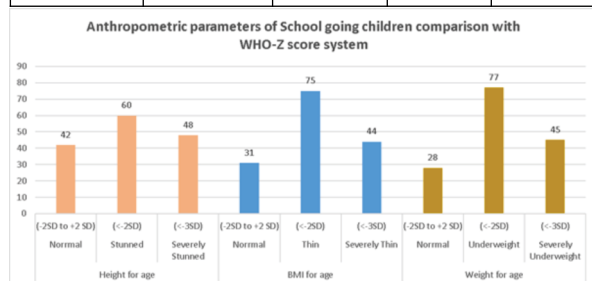
### RESULTS AND DISCUSSION

The table showed the classification of 150 school going children according to their height for age (HAZ). It can be concluded that 42 out of 150 i.e. 28% were normal, 60/150 i.e. 40% were stunted and 48/150 i.e. 32% were severely stunted. The overall prevalence stunting

(stunted + severely stunted) 72% among school going children. 20% Stunting was found in age group 7-8 years and 11-12 years while severely stunted children 27.08% found in the age group 10-11 years.

**Table 1. Anthropometric Parameters Of School Going Children Comparison With WHO-Z Score System**

Anthropometric parameters	Classification	Z- Score	Frequency (n)	Proportion
Height for age	Normal	(-2SD to +2 SD)	42	28
	Stunted	(<-2SD)	60	40
	Severely Stunted	(<-3SD)	48	32
Weight for age	Normal	(-2SD to +2 SD)	28	18.67
	Underweight	(<-2SD)	77	51.33
	Severely Underweight	(<-3SD)	45	30.00
BMI for age	Normal	(-2SD to +2 SD)	31	20.67
	Thin	(<-2SD)	75	50
	Severely Thin	(<-3SD)	44	29.33



#### Graphical Representation Of Anthropometric Parameters Of School Going Children Comparison With WHO-Z Score System

The above table also showed the classification of 150 school going children according to their Weight for age (WAZ). It can be concluded that 28% out of 150 i.e. 18.6% were normal, 77/150 i.e. 51.33% were thin and 45/150 i.e. 30% were severely thin. The overall prevalence wasted (underweight + severely underweight) 77.94% among school going children. It was also observed that highest number of children that is 20.8% found underweight in age group of 10-11 years and highest severely thin 28.89% found in aged group 11-12 years.

The above table shows the classification of 150 school going children according to their BMI for age (BAZ). It can be concluded that only 20.6% students that is 31 were in the normal range. Out of 150 students 56 students i.e. 37.33% were underweight and 44 students i.e. 29.4% were severely underweight. The overall prevalence underweight students for their age were 66.73% as per WHO's international standards. Highest underweight 21% children found in age group of 10-11 years where as highest severely underweight 29.55% found in aged group 11-12 years.

#### CONCLUSION

Even after implementing numerous methods to lessen childhood malnutrition, the majority of children remain undernourished, necessitating additional ground-level assistance for the beneficiaries. This can be accomplished through raising the Socio-Economic Status (SES) of the families, raising the level of education, promoting gender equality, appropriately implementing government policies, diversifying the food supply, and engaging both the government and non-governmental organisations (NGOs).

It is advised that parents, guardians, and other caretakers regularly monitor the diets of youngsters. The mid-day meal in schools, other feeding programmes, and Anganwadi (pre-schools) should all be periodically examined to determine whether any adjustments are necessary. They should be reorganised in accordance with the availability of seasonal foods so that children's needs for each food group, Dietary Diversity Score (DDS), and foods from each group (FVS) can be satisfied. Since education and health are closely intertwined, schools are the best place to benefit from health education.

Instead of focusing on a treatment, health education should place more of an emphasis on health problem prevention.

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