Original Research Article
To Study Nutritional status of specially abled boys & girls of age 05 to 10 years at Amaltas School, at AIMS, Dewas, M.P.

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Abstract
Background & Methods: The aim of the study is to study Nutritional status of especially abled boy & girls of age 05 to 10 years at Amaltas School, at AIMS, Dewas, M.P.
Results: We found, Received Polio 73%, Received Measles 66%, Received BCG 61%, Received DPT3 69%, p value (0.049). Significantly associated with diarrhea and worm infestation, but comparatively related with other factors like pneumonia, ARI and fever. The results of chi square test with p (0.047).
Conclusion: The causes of malnutrition are not only recent but also long term deprivation resulting to chronic malnutrition. Malnutrition results from the interaction of poor-quality diets and poor-quality health and care environments and behaviours, so urgent steps should be taken to improve nutritional status of school children.

Key Words: Nutritional, especially abled, boy & girls
Study Design: Observational Study.

1. INTRODUCTION

Poor nutrition starts before birth, and generally continues into adolescence and adult life and can span generations. Chronically malnourished girls are more likely to remain undernourished during adolescence and adulthood, and when pregnant, are more likely to deliver low birth-weight babies.[1] Nutritional status is an important index for measuring quality of life especially in children. In this respect, understanding the nutritional status of children has far reaching implications on better development of future generations as well as future development of humanity.[2]

Children are the most important assets of a country because they will be tomorrow's youth and provide the human potential required for its development. Nutrition in the early years of life plays a big role in physical, mental and emotional development[3]. Poor and inadequate nutrition may lead to malnutrition, morbidity and mortality among children. Malnourished children are more likely to grow into malnourished adults who face heightened risks of disease and death. Under-nutrition is largely due to dietary inadequacy in relation to children's needs. Children who are undernourished are less creative both physically and intellectually as adults. Under-nutrition is coupled with more than half of all child deaths all over the World. It is highly prevalent in low and middle income countries[4]. In Asia, the rate of under-nutrition is the highest in the world. Here one in two children is malnourished. Half of the world's malnourished children are found in only three countries, India, Bangladesh and Pakistan. Age, gender and body weight largely determine the nutrient requirement of an individual. Body weights and heights of children reflect their state of health, nutrition and growth rate. Weights and heights of adults represent what can be attained by an individual

with normal growth. Nutritional status of children can be evaluated under three broad headings, namely, clinical, biochemical and anthropometric[5]. Choosing a suitable nutritional status measure is a complex decision based on objective data collection. For practical purposes, anthropometry is the most useful parameter for assessing the nutritional status of children. It is simple and inexpensive compared to other existing methods. The three most frequently used internationally suggested anthropometric indicators are stunting (low height-for-age), underweight (low weight-for-age) and wasting (low weight-for-height) (WHO, 1995). Stunting (ST) reflects a failure to reach linear growth potential due to sub-optimal health and/or nutritional conditions, underweight (UW) reveals low body mass relative to chronological age, which is influenced by both, a child's height and weight[6]. ST is an indicator of chronic under nutrition, the result of prolonged food deprivation and/or disease or illness. Chronic under nutrition in childhood is linked to slower cognitive development and serious health impairments later in life that reduce the quality of life and also the economic productivity of people. Alternatively, wasting (WS) is an indicator of acute under nutrition, the result of latest food scarcity or sickness[7].

2. MATERIAL AND METHODS

Present study was conducted at Amaltas School, AIMS, Dewas, M.P for 01 Year on 100 cases. For children, there were two dependent variables considered: Nutritional status and Anaemia in children 05 to 10 years of age. The independent variables were selected as follows: 1. Sanitation variables: source of drinking water, toilet facility. However, after consideration, only availability of toilet facilities was considered for analysis to give required information based on the fact majority of the households had no toilet facility hence a true representation of the poor sanitary conditions. 2. Socio-economic and demographic variables: Age, sex, residence, religion, caste, size at birth, sex of the child, size at birth 3. Maternal factors like (education and occupation). 4. Child feeding practices: Currently breastfeeding, 5. Morbidity/ infections: Children having diarrhoea/ blood in stools, fever and cough in the last two weeks prior to the survey were included.

Inclusion Criteria:
1. Children between 05 to 10 years of age.
2. Student of Amaltas School, AIMS, Dewas, M.P.

Exclusion Criteria:
1. Children more than age of 10 Years.
2. Student outside Amaltas School, AIMS, Dewas, M.P.
3. Nutritional status of normal boy & girls.

3. RESULT

Table No. 1: Demographic Profile

S. No.	Gender	No.	Percentage	P Value
1	Male	63	63	
2	Female	37	37	
				0.719
	Size at birth	No.	Percentage	
1	Very large	17	17	
2	Larger than AV	21	21	**0.566**

3	Average	48	48	
4	Smaller than AV	14	14	
5	Very small	-	-	
	Residence	**No.**	**Percentage**	**0.032**
1	**Urban**	27	27	
2	**Rural**	73	73	

We found, 63% male & 37% female, size of birth maximum at average 48% with p value (0.566).

Table No. 2: BMI, Diet insecurity & Wealth index

BMI	No.	Percentage	P Value
Moderate thinness	23	23	
Mild thinness	66	66	
Normal	02	02	
Overweight	09	09	**0.178**
Diet insecurity			
Highest	33	33	
Middle	25	25	
Lowest	42	42	**0.029**
Wealth index			
Poorest	79	79	
Poorer	67	67	
Middle	51	51	**0.273**
Richer	23	23	
Richest	08	08	

We found, BMI 66% Mild thinness & 23% Moderate thinness P (0.178), Diet insecurity maximum in lowest with 42% p value (0.029).

Table No. 3: Immunization status & Arm Girth & Leg Circumference

Variable	Yes	No	P Value
Received Polio	73	37	
Received Measles	66	34	
Received BCG	61	39	
Received DPT3	69	31	**0.049**
Age	**Arm Girth Mean (cm)**	**SD**	
05	21.9	0.08	
06	22.3	1.21	
07	22.7	2.84	**0.037**
08	23.1	1.07	
09	24.4	4.46	

10	25.2	3.27	
	Leg Circumference Mean (cm)	**SD**	
05	25.9	3.47	
06	24.3	2.66	
07	26.7	1.46	**0.024**
08	27.1	0.79	
09	28.4	0.13	
10	29.2	4.11	

We found, Received Polio 73%, Received Measles 66%, Received BCG 61%, Received DPT3 69%, p value (0.049).

Table No. 4: Association of health status or morbidity factors

Variable	Yes	No	P Value
Diarrhea	53	47	
Pneumonia	37	63	
Fever	55	45	**0.047**
ARI	31	69	
Worm infestation	49	51	

Significantly associated with diarrhea and worm infestation, but comparatively related with other factors like pneumonia, ARI and fever. The results of chi square test with p (0.047).

4. DISCUSSION

Height for age reflects the achieved linear growth and its deficits indicate long-term cumulative inadequacies of health or nutrition. Malnourished children are shorter in stature as compared to those who are brought up in better dietary care[8]. It is revealed from the data that 22.84% children aged 5-10 years showed normal (> +1SD) height for-age status, being 27.42% for boys and 26.12% for girls. Stunting is a predictor of risk and because it is strongly correlated with socio-economic status, reflects the overall development. In terms of stunting (HAZ below -1SD), the prevalence of stunting Grade-I (-1SD to -1.99 SD), Grade-II(-2SD to -2.99 SD) and Grade-III(≤-3 SD) were 63.89%, 8.95% and 1.23% respectively, being 62.3%,9.14% ,1.14% for boys and 63.15% ,8.72% ,2.01 % for girls[9]. Compared to other age groups, 6 years old boys (61.54%) and 5 years old girls (69.23%) showed the lowest prevalence of stunting. On the other hand, 7 years old boys (85%) and 5 years old girls (86.32 %) showed the highest prevalence of stunting. Highest percentage prevalence of Grade I (mild) stunting is shown by male children (70%) at 6 years and female children (70%) at 10 years.

Quetlet's Index, or BMI, is widely used as a measure of fatness, or the nutritional status of populations in both developed and developing countries. Figure 1 presents the comparison of BMI by age and sex of the studied children. The mean BMI was significantly higher among boys and girls at the age of 10 years. The lowest BMI for age are shown at the age 7 years for boys and the 5 years for girls respectively. Improvement in the socio-economic conditions of these tribes may lead to an increase in their BMI[10].

Analysis of the various anthropometric nutritional indices amongst children aged between 5 to 10 years revealed the prevalence of underweight, stunted and thinness among tribal children. Most of the tribal people of our country have their own geographically isolated life style. Inadequate food habits, along with traditional socio-cultural and biological activities, may lead to a high proportion of child as well as adult under-nutrition. In general, the indirect factors such as food habits, nutrition, occupation, income level, literacy level, housing conditions, water supply, sanitation, medical facilities and awareness are found to be crucial determinants of nutritional profile of individuals and community on the whole. Mother's education is strongly associated with the nutritional status of children[11]. The condition is further accentuated by the lack of awareness prevailing among majority of people regarding the type of foodstuffs required to meet the daily dietary requirements. However, it can be summarized that there are some limitations of our study such as small sample size in some age groups and inability to employ any strict sampling strategy.

It is a factual way of detecting nutrient deficiencies and can be done through several methods. At the household level, a 24-hour recall method is used to assess the type and quantities of food consumed in the past 24 hours. Food frequency questionnaire on the other hand helps to determine dietary patterns and behaviours of people as well as recording the number of times specific foods were consumed over a specified period of time[12]. Food balance sheet and inventory methods are almost similar in the way they collect information and helps people in management to establish dietary requirements of a population in a specified period of time

5. CONCLUSION

The causes of malnutrition are not only recent but also long term deprivation resulting to chronic malnutrition. Malnutrition results from the interaction of poor-quality diets and poor-quality health and care environments and behaviours, so urgent steps should be taken to improve nutritional status of school children.

6. REFERENCES

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