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Malnutrition among under Five Children in Uttarakhand

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ABSTRACT

BACKGROUND: Globally more than one third of child deaths are attributable to under nutrition. Eighty percent of the world's undernourished children live in 20 countries, with India being home to nearly 60 million children who are underweight.

OBJECTIVE: This study aimed to assess malnutrition among under five children in a selected hospital of Dehradun, Uttarakhand.

METHODOLOGY: A quantitative research approach was used with descriptive cross-sectional research design. Non probability convenient sampling technique was used to select 70 under five children who fulfilled the inclusion criteria. The data collection tools included Socio -demographic profile and Anthropometric assessment of the children. The data was analyzed based on objectives by using descriptive and inferential statistics. Data was analyzed using WHO anthroplus software and SPSS 21.0.

RESULT: The result showed that out of 70 children 17.14% showed mild wasting, 18.57% showed moderate wasting and (21.43%) showed severe wasting. 11.43% children showed mild stunting, moderate stunting was present in 15.71% children and severe stunting was present in 27.14% children. 31.43% children were moderately underweight and 30% were severely underweight.

CONCLUSION: The study concluded that majority of the children were malnourished.

KEYWORDS: *Malnutrition, Under five children*

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INTRODUCTION

Malnutrition is a silent emergency. Malnutrition is both under nutrition and over nutrition ranging from severe nutrient deficiencies to extreme obesity. Globally; more than one third of child deaths are attributable to under nutrition. Nutrition plays a key role in physical, mental and emotional development of children and much emphasis has been given to provide good nutrition to growing populations especially in the formative years of life [1]. At present in India 48% children < 5year age are chronically malnourished and 43% are underweight (NFHS-3). More than half (54 percent) of all deaths before age five years in India are related to malnutrition. [2]. Anthropometric assessment is widely used and often regarded as the best single measure for health and nutritional status in children. Interpretation of the growth of a population is largely dependent on the growth reference standard used [3]

Wasting, stunting, and underweight are among those anthropometric indicators commonly used to measure under nutrition in a population of under- five children [4]. According to the World Health Organization (WHO), wasting, stunting, and underweight are defined as Z-scores less than −2 standard deviations of weight for height, height for age, and weight for age, respectively [5]. Wasting and stunting reflect acute and chronic exposures for nutritional deficiency, respectively. In addition, underweight reflects both acute and chronic exposures for nutritional deficiency [6].

OBJECTIVES:

The present study was conducted with the aim to assess malnutrition among under five children as measured by Anthropometric assessment and to find association between malnutrition and sociodemo graphic variables.

METHODOLOGY

Quantitative approach with descriptive cross sectional research design was used to assess malnutrition among under five children. The study was carried out at pediatric outpatient department of Himalayan Institute Hospital Trust in Uttarakhand. Convenient sampling was used to select 70 children who came to attend outpatient department for any health issue, who fulfilled the inclusion criteria. Informed written consent was taken from the participants. Socio-demographic data was collected through a semi-structured tool. For Anthropometric measurements all equipment were calibrated and validated. Weight of the samples were taken with the help of standard electronic weighing scale to the nearest 0.1kg, with minimum clothing and bare feet. Height was measured at the nearest 0.1cm using a wall mount measuring tape in standing position without shoes on a flat surface with back of the head, shoulder blades, buttocks and heels touching the wall. Mid arm circumference was measured at the midpoint of the upper arm. The arm was extended to hang loosely by the side with the palm facing inward. The tape was wrapped gently but firmly around the arm at the mid point.

The following cutoffs for classification of nutritional status were taken.

Weight for Age (WAZ): <-3SD (Severe Underweight) and -2 SD to -3 SD (Underweight).

Length (HAZ): <-3SD (Severely Stunted) and -2 SD to -3 SD (Stunted).

BMI for Age: <-3SD (Very Thin), -3 SD to -2SD (Thin), -2 SD to 2 SD (Normal), >+2SD (overweight), and >+3SD (obese)[7].

WHO AnthroPlus software was used for assessing nutritional status indicators such as undernutrition, stunting and wasting. Statistical Package for Social Sciences (SPSS) version 21.0 was used for data analysis.

Result:

Table no 1. Frequency and percentage distribution of socio demographic characteristics of participants.

N=70

S. no	Sociodemographic variables	Frequency	Percentage%
1	**Age**		
	Infants	23	32.86
	Toddlers	32	45.71
	Preschoolers	15	21.42
2	**Gender**		
	Male	32	45.71
	Female	38	54.28
3	**Religion**		
	Hindu	63	90
	Muslim	5	7.14
	Sikh	2	2.85
4	**Educational status of mother**		
	Primary	6	8.57
	Secondary	28	40
	Senior secondary	25	35.71
	Graduation and above	11	15.71
5	**Educational status of father**		
	Primary	5	7.14
	Secondary	13	18.57
	Senior secondary	31	44.28
	Graduation and above	21	30
6	**Occupation of mother**		
	Housewife	59	84.28
	Private job	11	15.71

7	**Occupation of father**		
	Self employed	20	28.57
	Private job	40	57.14
	Government job	10	14.28
8	**Socioeconomic status**		
	Upper middle class	9	12.86
	Lower middle class	25	35.71
	Upper lower class	36	51.43

Table no. 1. Illustrates that (32.86%) of the children were infants, (45.71%) were toddlers and (21.42%) were preschoolers. Majority of the children were Hindu (90%) and rest were Muslim (7.14%) and Sikh (2.85%). (40 %) mother's got secondary education and (15.71%) were graduated. (44.28%). (30%) father's were graduated,(28.57%) father were self-employed, (57.14%) were on private job and (14.28%) were in government job. (51.43%) of children belonged to upper lower class, (35.71%) belonged to lower middle class and (12.86%) belonged to upper middle class. Exclusive breastfeeding was done by majority of the mothers (98.57%). Birth weight of majority (70%) of the children was between 2.5- 3.5 kg. Majority of the parents were having two children (54.28%). (18.57%) children lived in urban area, (44.28%) in rural area and (37.14%)lived in semi urban area. Majority (68.57%) children were vegetarian while only (7.14%) were non vegetarian. Majority (74.28%) of children started weaning after 6 months. Majority of the children (74.28%) were completely immunized, (24.28%) were incompletely immunized and (1.43%) were partially immunized. History of illness was present in 22.86 % of children.

Table no 2 – Frequency and percentage distribution of anthropometric indices among under five children
N=70

S. no.	Anthropometric indices	Categories	Frequency	Percentage%
1	**Wasting**	Normal	30	42.85
		Mild	12	17.14
		Moderate	13	18.57
		Severe	15	21.43
2	**Stunting**	Normal	32	45.71
		Mild	8	11.43
		Moderate	11	15.71
		Severe	19	27.14
3	**Underweight**	Normal	27	38.57
		Moderate	22	31.43
		Severe	21	30

Table no. 2. Illustrate that out of 70 children (17.14%) showed mild wasting, (18.57%) showed moderate wasting, (21.43%) showed severe wasting. (11.43%) children showed mild stunting, moderate stunting was present in (15.71%) children and severe stunting was present in (27.14%) children. (31.43%) children were moderately underweight and (30%) were severely underweight.

Figure no.1. Percentage distribution of stunting, wasting and underweight according to age groups.

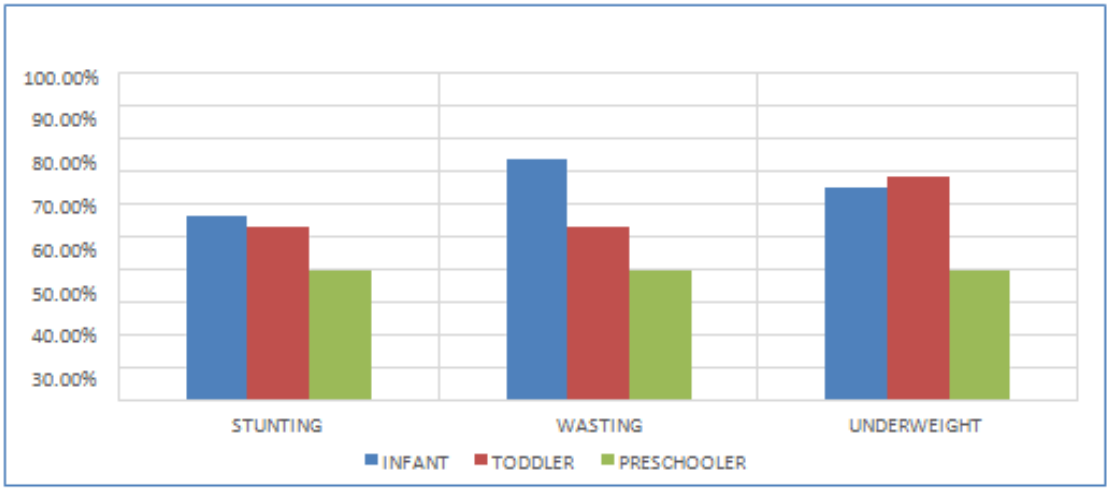

Figure no.1- shows that in infants the percentage of stunting, wasting and underweight were (56.52%, 73.91%, 65.21%) respectively. In toddlers the percentage of stunting, wasting and underweight were (53.37%, 53.12%, 68.75%) respectively. In preschoolers the percentage of stunting, wasting and underweight are (40%, 40%, 40%,) respectively.

Figure no. 2: Percentage distribution of stunting, wasting and underweight according to gender.

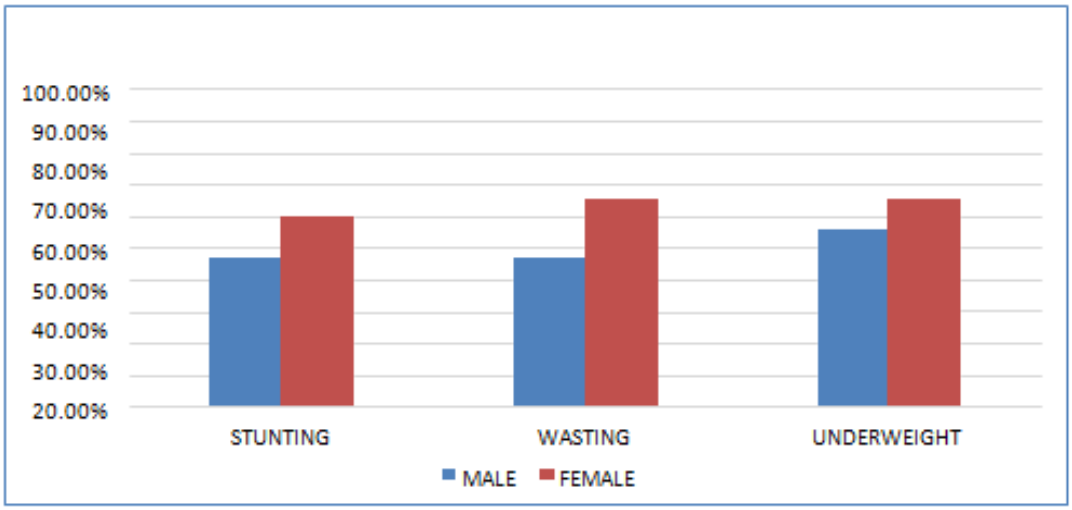

Figure no. 2. shows that in males the percentage of stunting, wasting and underweight were (46.87%, 46.87%, 56.25%) respectively and in females the percentage of stunting, wasting and underweight were (60.52%, 65.78%, 65.78%) respectively.

No significant association was found between sociodemographic variables with stunting, wasting and underweight.

DISCUSSION

The findings of the present study was supported by Abu Rehan (2020) conducted a community based cross sectional study to assess under nutrition and various socio demographic factors affecting it in under five children of rural and urban area of Rishikesh. The result showed that the prevalence of underweight was 37.3%, stunting 43.3% and wasting 24.5%.

Contrary to our study Dilshad Ahmad (2020) conducted a study on effect of socioeconomic factors on malnutrition among under five children in Multan district of Pakistan. In this study, prevalence of higher level malnutrition was estimated due to lower socio economic status among major population in the community specifically in rural areas. Stunting was significantly associated with family size, maternal education, wealth quintile and children of some month.

CONCLUSION

From the findings of the study it can be concluded that out of 70 children (17.14%) shows mild wasting, (18.57%) shows moderate wasting, (21.43%) shows severe wasting. (11.43%) children show mild stunting, moderate stunting was present in (15.71%) children and severe stunting was present in (27.14%) children. (31.43%) children were moderately underweight and (30%) were severely underweight.

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