

CHILDREN BELONGING TO (BPL) BELOW POVERTY LINE FAMILIES: PREVALENCE OF DISEASED CONDITIONS

Shafia Jan

Institute of Home Science, University of Kashmir, Srinagar

BACKGROUND

Poverty is a state or condition in which one lacks the financial resources and essentials for a certain standard of living. Poverty can have a diverse effect on the health and nutritional status of an individual. Various key factors that have been found to influence whether people are healthy or unhealthy include income and social status, education and literacy, employment/working conditions, social environments, personal health practices and coping skills, health care services, and so on. Under nutrition is a major public health concern in India, particularly in children under five and belonging to poor income families. Despite India's growth in the economy, the child mortality rate due to under nutrition is still high in both urban and rural areas. Studies that focus on below poverty line families are scarce. Hence the present study was carried out to assess the prevalence of under nutrition as well as diseased conditions in children in District Srinagar of J & K, India.

DESIGN

It was a cross sectional study using random sampling procedure.

SUBJECTS

51 children aged 4-15 years were selected from low income families of Srinagar city.

METHOD

A questionnaire was administered to all participants for assessing the undernutrition, dietary behaviours and health seeking behavior. Anthropometrics indices like wasting, stunting, underweight and vulnerability to malnutrition models were also used .

RESULTS

Results of the study finds that majority of the families had Rs. 3000 as monthly income which is not sufficient to meet the nutritional and health related demands of the children. A good percentage were found to be underweight.

CONCLUSION

Low maternal education was mainly associated with underweight. Improvement of maternal education will improve the nutritional status of the child. Strategies are needed to improve the economic status of the community.

1. INTRODUCTION

Health as per WHO is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." The maintenance and promotion of health is achieved through combination of physical, mental, and social well-being, World Health Organization (WHO, 2017). Nutritional status on the other hand is the state of health as influenced by the utilization of nutrients in the body. It is influenced by the adequacy of food intake both in terms of quantity and quality and also by the physical health of the individual (Park, 2017). Malnutrition is the condition that develops when the body is deprived of vitamins, minerals and other nutrients it needs to maintain healthy tissues and organ function. Malnutrition occurs in people who are either undernourished or over nourished. Malnutrition is a consequence of poverty, as poverty increases food insecurity and hidden hunger; which contributes to the problem of malnutrition. Malnutrition can be categorized into under nutrition (e.g., wasting, stunting, and underweight), over nutrition (e.g., obesity), and micronutrient-related malnutrition (WHO, 2020). Under nutrition in childhood was and is one reason behind the high child mortality rates witnessed in developed nations. Constant under nutrition in childhood is connected to more slow mental turn of events and serious wellbeing weaknesses sometime down the road that lessen the personal satisfaction of people. Nutritional status is a significant list of this quality. In this regard, understanding the nutritional status of kids has broad ramifications for the better improvement of people in the future.

Growth monitoring is generally used to evaluate nutritional status, wellbeing and improvement of individual children, and furthermore to assess by and large nourishing status and strength of populaces. Compared to other health assessment tools, estimating child development is a moderately reasonable, simple to perform and non-invasive process (Srivastava, 2012).

2. REVIEW OF LITERATURE

Globally, it is estimated that 149 million children are stunted and 50 million are wasted (UNICEF, 2020). Under nutrition has been reported to be accounted for 45% of all child deaths either as a direct or underlying cause (Black et al., 2013) Malnutrition and poverty have become two sides of a same coin that are ravaging the developing countries (Adeyeye et al., 2017). Although poverty has reported to be the main cause of malnutrition, malnutrition at an early age can deepen the influence of poverty and entrap these malnourished individuals in the "cycle of poverty" with potentially serious and long lasting health consequences (Ord & Monks 2021). Studies have reported that both environmental and dietary factors are one of the causes of the malnutrition, especially in children. Diet and diseases are considered the primary determinants, with access to health care facilities, healthy food and physical environment, nutrition knowledge, feeding practices, education level, household income, and household food security influenced by the socio-demographics (Azétsop et al., 2013). Under nutrition is considered when there is one or more of the following: stunting, underweight, or wasting. Childhood under nutrition can have numerous long-term effects: a lower physical capacity for work, lower intellectual quotients, greater risk for morbidity and mortality, and cognitive impairment. Undernourished children also can have poor cognitive scores, a high absenteeism rate, and high class repetition compared with non-undernourished children (Ali et al., 2020). In an Indian study done on urban slums of Bareilly, Uttar-Pradesh (UP), most of the school-age slum children were found to have poor nutritional status. The risk of malnutrition was significantly higher among children living in joint families, children whose mother's education was [less than or equal to] 6th standard and children with working mothers (Srivastava, 2012).

A similar study was conducted by Murugkar DA, et al., which assessed the nutritional status of 200 school-going children (6-9 years) in the Bhopal district of Madhya Pradesh. Interviews consisting of food frequency questions and 24-hours dietary recall of children and anthropometric measurements including weight and height were used for data collection. The height, weight, and BMI of all children were significantly lower than the reference value ($p \leq 0.05$). Results also showed that 55% of the children were wasted and 47% were severely malnourished and the diet they consume lacks all the major and minor nutrients required for the growth of children except fat. The study concluded that nutritional inadequacies, poverty, lack of infrastructure, and poor education of mothers resulted in severe malnutrition in school-going children (**Murugkar, 2013**). A descriptive cross-sectional study was conducted by Amruth M, et al., on 424 primary school children to find out their nutritional status and dietary risk factors for malnutrition in Sullia, Karnataka. Probability proportional to size sampling method and anthropometric measurement was used and statistical analysis of data was done. The results showed the prevalence of underweight; stunting and thinness are 26.5%, 19.2%, and 26.5% respectively. It was also observed that private school children had better nutritional status than government school children and the prevalence of malnutrition was higher in boys than girls and children belonging to joint families [**Amruth, 2012**]. Another study conducted by Hasan I, et al., from Bangalore conducted a nutritional assessment cross-sectional study among 500 children in three Government Urdu higher primary schools of Azad Nagar and its surrounding area. The overall prevalence of malnutrition in school children was found to be 52% (260). The prevalence of malnutrition among boys was 53.85% (161) and among girls was 49.25% (99). The prevalence of stunting was more in boys that is 41.47% as compared to girls that are 38.81%. It was also found that nutritional status was highly related to personal hygiene and socio-economic status (**Hassan, 2011**). A study conducted by Fazili A, et al., also assessed the nutritional status of school-age children of 5-14 years in a rural health block of North India (Kashmir) using the WHO Z-Score System. Study results showed that the overall prevalence of underweight is 11.1%, stunting is 9.25% and wasting is 12.3% (**Fazili, 2012**).

A study was done by Nigudgi, et al., from Gulbarga, Karnataka among 935 students in higher primary schools of Gulbarga city assessed the nutritional status, to find out the burden of specific deficiency disorders and to assess the status of personal hygiene among them showed that 50.05% children were below the average weight for age, 22.35% children had specific deficiency diseases in which bitot's spot in 48.80% children and anemia in 10.05%. 91.44% of schoolchildren had good personal hygiene (**Nigudgi, 2012**). 150 school-going children from Allahabad belonging to age group 7-10 years were also studied by Ruchika H, et al. Data collection was done by 3 days dietary recall method. Heights, weights, and mid-upper arm circumference were measured and hemoglobin levels of children were estimated by cyanmethaemoglobin method. Clinical status assessing anemia was also recorded and results from a state that means height and weight in these children were significantly less than the national standards ($p < 0.05$) (**Handa, 2008**).

A study was done by Navaneethan P, et al., among 806 school-going students of Vellore, Tamil Nadu belonging to age group 11-18 years, showed that 83% of students were underweight for their age as per WHO's international standards. Only 16% of the students were in the normal range (BMI 18.5-24.9), and of the rest, 0.39% and 0.06% were in the BMI range of 25-29.9 (overweight) and 30-35.9 (obese) respectively. This regression model showed that age, sex, and father's occupation significantly affect their BMI. The study concluded that malnutrition among school children can be eliminated by providing additional healthy foods and by improving the Socio-Economic Background (SEB) (**Navaneethan, 2011**). So far no study has been conducted to evaluate the nutritional status of children from below poverty line families in Kashmir region. Therefore the present study was undertaken with an objective of assessing overall health and nutritional status of children belonging to BPL families and also to find prevalence of non-communicable diseases among them.

3. METHODOLOGY

The present study was undertaken to study the nutritional status and prevalence of diseases among children belonging to below poverty line (BPL). The data has been collected from two sources: Primary source which included a structured questionnaire and an interview schedule was also used in the collection of primary information from the participants. Secondary source included collection of data obtained from books, journals, published and unpublished dissertations from various reputed institutes.

3.1. Selection of Sample

While determining the size of the study, 51 BPL children in the age group of 4-15 years were selected randomly from district Srinagar. A total of 25 boys and 26 girls were interviewed and examined. These children were taken for the study from different areas like Chattabal, Nawakadal, Nowhatta, Khanyaar, Saidakadal, Fatehkadal areas of Srinagar district of JKUT.

3.2. Tools Used

interview schedule. A pre-designed and pre-tested questionnaire was used to interview the study participants. The questionnaire included various sections to elicit information on family characteristics like residence, religion, type of family, education and occupation of parents; and information on individual characteristics like age, sex and eating habits. A section on assessment of nutritional status included various anthropometric measurements such as height in cms and weight in kgs. Anthropometric measurements were taken and noted by trained researchers. Height of the subjects was recorded in cm to the nearest 0.1cm with a standard non flexible measuring tape, which was fixed to the wall. The subject was asked to stand straight without shoes against the wall of the room. For assessment of body weight an ordinary weighing scale was used. BMI of the samples was calculated on the basis of the height and weight using the formula.

$$\text{BMI} = \frac{\text{Weight (Kgs)}}{\text{Height (m}^2\text{)}}$$

Dietary Assessment included the information regarding the nutritional intake of the sample. This was done by using a 24 hour dietary recall method. The food intake during the last 24 hours was recorded in order to obtain information regarding the intake of calories, proteins, fats and fiber. Food Frequency Method of dietary assessment was also used to obtain frequency of food intake. The questionnaire was pre-tested on 5 children from each slum. Necessary modifications were made in the questionnaire before the start of the study. Various diseased conditions including nutritional deficiency diseases and Non nutrition related diseases were assessed. Vitamin A deficiency was diagnosed by the presence of Bitot's spots and conjunctival xerosis. Rickets was diagnosed by any abnormality in skeletal development, like knock-knees and bowed legs. Anemia was diagnosed from clinical signs such as pallor of the conjunctiva/tongue, spoon shaped nails. Non nutritional diseases such as Constipation, Cold and cough, Typhoid, Diabetes Type 1, vision, speech and hearing problems were diagnosed using various questions enquired from mothers of children.

3.3. Data Analysis

The data collected was carefully scrutinized and condensed into a master-chart so that all the information could be brought into proximity. The data thus collected was tabulated, analyzed and interpreted as per the needs of the study with the help of various statistical tools. statistical tests were applied. $P < 0.05$ was considered as statistically significant.

4. RESULT AND DISCUSSION

Demographic information (Table 1) represents that 51% of the children were boys and 49% were girls. Moreover 55% belonged to 5-10 years of age group. Majority of the respondents belonged to 5-10 years of age. Moreover it reveals that 57% of the children belonged to families with 5-8 family members and 55% had up to two siblings at home. Parental occupation showed that majority of mothers were housewives whereas majority of fathers (70.6) were involved in semiskilled profession such as---- Information on parents education revealed that 62.7% of mothers and 74.5% of fathers were found to be illiterate.

Table: 4.2 shows the distribution of respondents as per various ailments that the children were suffering from. As evident from the table majority of the respondents (31%) at the time of the study were suffering from acute intestinal infections, 7.8% were suffering from severe constipation 1.9% from diabetes type 1 and 19.6% had recurrent ear infection, pneumonia and UTI). 17.6% were suffering from neurological disorders and developmental disorders. As far as hearing and speech impairments are concerned, 9.8% of the children were suffering from vision impairments, 5.9% were suffering from speech disorders and 2% were suffering from hearing disorders

Table 4.3 shows the BMI (body mass index) of all the respondents. BMI was calculated and then plotted on percentile chart for the BMI for all the children and it was observed that 67% percentage of the children belonged to underweight category, none of the children were to be suffering from obesity however 5% belonged to overweight category. Majority of the respondents were from a family background with a monthly family income of Rs. 3000.

The paper aimed to identify the prevalence of under nutrition among below poverty line children. Poverty and childhood malnutrition are believed to be interlinked (**Pena and Bacallao, 2002**), which is mediated by inadequate diet plan, lower education level, poor living standards, and lack/no access to health facilities, safe water, proper sanitation and hygiene. Our results showed highest prevalence of under nutrition among study participants. Similar findings have been witnessed by (**Panda et al, 2020**) where Under nutrition among children from poor households was highest. Recent estimates from NFHS-4 (2015–16) suggest that childhood malnutrition varies considerably across Indian districts. The prevalence of stunting among children under age five was lowest in Kollam (13%), a district of Kerala and highest in Bahraich (65%), a district of Uttar Pradesh. Similarly, the prevalence of underweight was lowest in Aizwal (7%), a district of Mizoram and highest in Pashchimi Singhbhum (67%), a district of Jharkhand

Table 4.1- Socio demographic characteristics

		No.	Percentage
Age(in years)	>5	7	27
	5-10	28	55
	11 and above	16	31
Gender	Females	25	49.0
	Males	26	51.0
Total number of members in the family	>4	15	29
	5-8	29	57
	9 and above	7	14
Number of siblings	1-2	28	55
	3-4	18	35
	5& above	5	10
Fathers occupation*	Unemployed	2	3.9
	Unskilled	5	9.8
	Semi- skilled	36	70.6
	Skilled workers	8	15.7
Mothers occupation	Housewives	44	86.3
	Unskilled	6	11.8
	Semi- skilled	1	2.0
Fathers Education*	Illiterate	38	74.5
	Matriculation	6	11
	Higher secondary	4	7.8
	Graduate	3	5.9
Mothers education	Illiterate	32	62.7
	Matriculation	12	23.5
	Higher secondary	2	3.9
	Graduate	2	3.9
Total monthly family income (in rupees)*	Less than Rs 3000	20	39.2
	3000-5000	15	29.4
	5000-10000	8	15
	10000 and above	8	15

*Scale:Socio-economic status scale by Kuppuswami (2014)

Table: 4.2 Distribution of respondents as per various ailments

		No	%
Nutritional deficiency Diseases	Vitamin A deficiency	-	-
	Vitamin D deficiency		
	Anemia		
Frequent episodes of any	Diarrhea, intestinal infection	16	31
	Constipation	4	7.8
	Cold and cough	16	31
	Typhoid	4	7.8
	Diabetes Type 1	1	1.9
	Any other (ear infection, pneumonia, UTI, Down syndrome, muscular dystrophy)	10	19.6
$\chi^2 = 11.315$ $df = 8$ $p\text{value} = .184$			
Hearing or speech impairment	Vision problems	4	7.8
	Speech problems	3	5.8
	Hearing problems	1	2
	None of the above	43	84.3
	Total	51	100.0
$\chi^2 = .573$ $df = 2$ $p\text{value} = .764$			

Table 4.3 Distribution of Respondents As Per Body Mass Index

			Total	
			No.	%
BMI(kg/m ²)	Underweight	Less than 5 th percentile*	34	67
	Normal	5 th -85 th percentile	14	27.5
	overweight	85 th -95 th percentile	3	5
	Obese	>85 th -99 th percentile	0	0
		Total	51	100.0
$X^2 = 3.738$ $df = 2$ $p\text{value} = .154$				

*Source: national center for health statistics in collaboration with the national Centre for chronic disease prevention and health promotion

5. CONCLUSION AND RECOMMENDATION

Based on the findings of the present research and statistical analysis, it was found that majority of the children belonged to families with illiterate parents. Most of the children were undernourished and were suffering from intestinal infections like diarrhea, dysentery, and other viral infections like cold and cough, some of the respondents were suffering from some developmental diseases

like Down syndrome, muscular dystrophy. It is recommended to make policy efforts to support novel health care, nutrition and education to reverse generations of adverse social conditions which will be required to achieve health equity for urban poor children. Nutrition education is a key factor which will improve the nutritional status of these families and hence of their children, as nutritional status of the children contributes to the nutritional status of a community. A strategy should be made to make them aware of the hygiene and diseases caused by the unhygienic conditions. Thus, a major decline in infectious conditions can be seen.

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