

## **Impact of Family Ecological Factors on the Nutritional Status of School Age Children**

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### **Abstract**

Malnutrition is found to be a wide spread problem in India irrespective of topographical description. While malnutrition affects the people of all ages, it is agreed that children in the world die of malnutrition and related diseases every day. Keeping in view the importance of nutritional status of school age children the present study was undertaken in Dhaura village of Hasnganj block of district Unnao. In total 64 children aged 6-14 years were surveyed to assess the nutritional status. The results of the study revealed that as per waterlow classification 48.44 percent of the children studies were suffering from various grade of malnutrition. On the basis of MUAC, 45.31 percent children were found malnourished. The nutritional status of children was found to be significantly correlated with different family ecological factors like education of mothers, monthly family income and dietary practices of the family.

**Keywords :** Ecological factors, nutritional status, childrens

### **Introduction**

Children are the supreme assets and future of any nation, therefore their health and wellbeing is of great significance. Like pre-school children, 6-14 year old children are of concern from nutrition point of view, as they are still in growing age physically and their intellectual development is rapid. Inadequate nutrition impairs the physical and mental development of the children along with their performance at school<sup>[1]</sup>. Hence nutritional status assessment studies are necessary to map out the magnitude of malnutrition, to discover and to analyze the ecological factors that are directly or indirectly responsible and, where possible suggest corrective measures. Keeping the

above points in mind the present study was planned on 6-14 year old children.

### **Material and Methods**

In this study 35 families residing in Dhaura village of Hasanganj block of district Unnao, having at least one child in the age group of 6-14 years were purposely selected. The subjects for the study included 64 children in the age group of 6-14 years. Information regarding general profile of the families was collected by interviewing child's mother at home, in the formulated and pretested interview schedule. The information collected include, type of family, family size, number of the children in the family total family, income, education and occupation of the family.

The data presented in Table No. 1 revealed that majority of the families studied were parents. Income from all sources like animals, service, farming and other if any, was considered to calculate the total income of the family. Dietary practices include the storage and cooking of food, followed by the families were recorded in the Proforma. Evaluation of the dietary practices was done according to the scoring scale adopted from the scoring scale set for sanitary practices. Anthropometric measurements namely height, weight and mid upper arm circumference were recorded and extent of malnutrition in children was assessed by Waterlow classification based on height for age and weight for height. The collected data were classified in the light of the study. The classified data were tabulated and analyzed statistically with the help of approved statistical techniques.

### Results and Discussion

The data presented in Table 1 revealed that majority of the families were parents, income nuclear followed by extended all sources was considered to calculate total income. Dietary practices include the nuclear followed by extended and joint family type. Out of total 42.80 percent of the families had 3-6 members in the family with the mean family size of 6.74. The educational level of parents was not found to be very good in the present study. As table depicts, out of total 25.71 percent of fathers were illiterate, 17.14 percent, had schooling up to primary, 25.71 percent up to middle school, 20 percent up to high school and 11.43 percent got schooling up to intermediate level & above. Whereas in the case of mothers majority of mothers studied were illiterate i.e. 65.71 percent & 17.14 percent with primary school level, 14.29 percent with middle school level and only 2.86 percent of mothers were educated up

to high school level. Heads of the families surveyed were engaged in various types of occupation. Majority of them (60.00%) were doing agriculture farming, rest were engaged in other types of occupations such as farm labourer (20.00%) Business (11.45%) and service (8.57%).

Majority of the families studied belonged to lower cast (42.85%) followed by high caste (34.28%) and middle caste (22.85%). Further findings indicated that out of total 48.57 percent families fell in income group levels less than 2000/- per month. Only 11.43 percent families come in category whom monthly income was more than 4000/-.

Table 2 depicts the scores of dietary practices of the families. Few practices studied were storage of fruits and vegetables processing of salad, green leafy vegetables, roots & tubers adequacy of space for washing of utensils, disposal of kitchen waste and use of cleaning agents for utensils. Majority of the families (60%) under study had poor dietary practices. Only 5.71 percent families had good dietary practices. Babu (2000) stated that even with adequate food availability of household level, poor eating habits and methods of food preparation and cooking reduces the food and nutrition security of the individual

Table 3.1 depicts average weight of selected children. Body weight is the most direct and common measure of growth and it measures the current or transitory nutritional status. In this study average weight of both boys and girls was less when compared with the 50<sup>th</sup> percentile of NCHS values for weight for age standards.

Table 1. **Socio-economic profile of the families.**

S. No.	Category	Percent distribution of families	
		N	%
<b>1.</b>	<b>Type of family</b>		
	Nuclear	19	54.29
	Extended	09	25.71
	Joint	07	20.00
<b>2.</b>	<b>Size of family</b>		
	3-6 members	15	42.8
	7-9 members	16	45.71
	≥10 members	04	11.43
<b>Mean ± S.D.</b>		<b>6.74 + 2.50</b>	
<b>3.</b>	<b>Education of fathers</b>		
	Illiterate	09	25.71
	Primary School	06	17.14
	Middle School	09	25.71
	High School	07	20.00
	Intermediate and more	04	11.43
<b>4.</b>	<b>Educating of mothers</b>		
	Illiterate	23	65.71
	Primary School	06	17.14
	Middle School	05	14.29
	High School	01	2.86
	Intermediate and more	-	-
<b>5</b>	<b>Occupation</b>		
	Agriculture	21	60.00
	Labourer	07	20.00
	Business	04	11.43
	Service	03	8.57

6.	Caste		
	Lower caste(Sc/ST)	15	42.86
	Middle caste (OBC)	08	22.86
	High caste(General)	12	34.28
7.	Monthly income		
	<2000	17	48.57
	2000-3000	09	25.71
	3000-4000	05	14.29
	>4000	04	11.43
<b>Mean ± S.D.</b>		<b>2393.57+1242</b>	

.Table 2. Percent distribution of families according to their dietary practices

categories	Scores	Families (N=35)	
		n	%
Good	18-21	02	5.71
Fair	13-17	12	34.29
Poor	7-12	21	60.00

Table 3.1. Average weight of boys and girls

Age(year)	Average weight (Kg)		NCHS Standard	
	Boys	Girls	Boys	Girls
06	17.30 ± 3.42	15.42± 1.99	21.20	20.05
07	18.00±3.62	18.95±3.28	23.40	22.55
08	19.37±6.73	19.01±7.31	26.00	25.70
09	19.50±4.26	20.40±4.71	28.90	29.45
10	24.30±2.08	23.86±4.40	32.35	33.65
11	23.50±2.14	26.05±6.63	36.40	38.10
12	30.25±4.80	32.50±4.80	41.05	42.65
13	34.75±6.32	36.95±10.50	46.40	47.20
14	38.72±2.59	39.00±1.75	50.80	49.30

Table No. 3.2 depicts the average height of selected children height is an indicator of past nutritional status and is known to vary in individual due to genetic, ethnic and individual factors of growth. It changes with age and

nutritional status during the growing years. In this study mean height of both boys and girls was found to be less when compared with 50<sup>th</sup> percentile of NCHS values for height for age standards.

**Table 3.2. Average height of boys and girls**

Age(year)	Height in cm		NCHS Standard	
	Boys	Girls	Boys	Girls
06	111.33±6.78	115.52±4.69	117.50	116.70
07	116.20±5.30	117.09±5.21	123.05	122.05
08	122.00±6.24	119.92±8.76	128.30	127.85
09	123.00±4.00	126.23±5.28	133.50	133.70
10	133.25±3.70	128.51±7.43	138.90	139.90
11	131.00±5.78	136.74±7.77	144.85	146.50
12	141.50±2.95	145.70±6.81	151.30	153.05
13	146.37±1.82	146.00±7.10	158.20	158.05
14	148.50±2.34	151.45±4.39	163.10	161.50

NCHS values for height for age standards.

Table 3.3 indicates the mean MUAC of the children studied. It was found less when compared with 50<sup>th</sup> percentile of NCHS values for MUAC for age.

**Table 3.3. Average mid upper arm circumference of boys & girls**

Age (year)	Average MUAC(cm)		NCHS Standard	
	Boys	Girls	Boys	Girls
06	15.30±0.98	15.00±0.95	17.90	17.60
07	15.50±1.17	15.17±1.10	18.70	18.30
08	15.60±1.56	15.55±1.64	19.00	19.50
09	16.00±0.89	16.00±0.82	20.00	21.10
10	16.75±1.53	16.50±0.92	21.00	21.00
11	18.00±0.83	17.00±1.49	22.30	22.40
12	18.37±1.42	18.25±0.72	23.20	23.70
13	18.75±2.14	18.75±1.45	24.70	24.30
14	20.98±1.68	20.22±0.86	25.30	25.20

Table No. 4.1 presents the classification of children according to their MUAC for age. Of the total 54.69 percent of the children

were normal while 45.31 percent were found to be malnourished.

Table 4.1. Percent distribution of children according to their MUAC

Category	MUAC (%)	Children(N=64)	
		N	%
Normal	≥80	35	54.69
Malnourished	<80	29	45.31

This classification system is based on weight for height and height for age. According to water low classification system out of total , 51.56 children were

found normal and remaining 48.44 percent were suffering from various types of malnutrition.

Table 4.2. Percent distribution of children according to water low classification.

Category of nutritional status	Children (N=64)	
	N	%
Normal	33	51.56
Stunted	13	20.31
Wasted	14	21.90
Stunted and wasted bath	04	6.25

Table 5 depicts the correlation of nutritional status of children with different variable.

Table 5. Correlation of nutritional status of children with deferent variables.

Family size	-0.121
Education of father	0.055
Education of mother	0.190**
Monthly income	0.146*
Dietary practices	0.239**

\*Significant at (P <0.05) level of significance.

\*\*Significant at (P<0.01) level of significance.

It showed that nutritional status of the children was significantly positively correlated with education of mother, monthly income of the family and dietary practices of the family. Study of Solon (2001) also confirmed that protein energy malnutrition was a consequence

not only of inadequate food intake but also of poor living conditions, unhygienic environment and lack of child health care Dietary practices of family were found to be significantly positively correlated with the education of mothers and monthly income of the family.

## **Conclusion**

The present study concludes that malnutrition among school age children is yet prevailing and the mean height, weight and MUAC for both boys and girls were below the 50<sup>th</sup> percentile of NCHS standards. on the basis of MUAC, 45.31 percent children were found malnourished where as on the basis of waterlow classification 48.44 percent of the children studied were suffering from various grade of malnutrition. The nutritional status of children was significantly correlated with different family ecological factors like education of mothers, monthly family income and dietary practices of the family.

So there is a need of nutrition education of the mothers which may include information regarding the balanced diet, importance of good nutrition for both physical and mental development of the children, nutrient deficiencies, their consequences and available remedies and some income generating programmes should be launched so that income of family can be increased.

## **References**

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