

Study on prevalence of malnutrition among infants (6-12 months) in urban Udaipur (Rajasthan)

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■ **ABSTRACT** : Nutritional status in children is most vulnerable during the weaning stages when both macro and micro nutrients may be insufficient to maintain growth and development. The present study was undertaken to discover the prevalence of malnutrition among the children (6-12 months) Data on demography and socio-economic aspects were collected on a total of 50 children *i.e.* using interviewing their mother. Anthropometric measurements were taken to assess the nutritional status. All the measurements were taken following standard techniques. The major findings were as follows: Out of 50 respondents, the degree of malnutrition was higher mainly in boys rather than girls in case of weight for age, head and chest circumference. Classification based on height for age shows that out of 50 respondents most of the subjects 78 per cent were short heighted. only 22 subjects were in normal category. Similar result of some studies showed that more per cent of male subjects suffered from different grades of malnutrition than female subjects. Possible reasons may be that mothers are not giving proper attention to the child due to working outside. Mostly mothers left their children at Anganwadi centre. Mothers have to be educated about the importance of breast feeding, proper time to start weaning, advice against indulging in harmful feeding practice. A health and nutrition survey must be conducted at proper intervals.

■ **KEY WORDS** : Malnutrition, Weaning, Infants

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Breast feeding is the most precious gift a mother can give her infant. "When there is illness or malnutrition, it may be a life saving gift, when there is poverty, it may be the only gift" (Lawrence, 1994). Good nutrition during infancy forms the basic foundation of health in particular for growth, development, survival and maintenance throughout the life. Nutritional status in children is most vulnerable during the weaning stages when both macro and micro nutrients may be insufficient to maintain growth and development. The pattern of supplementary feeding during the first year of life is increasingly recognized as important determinants of malnutrition. Malnutrition is often associated with inappropriate feeding practices occurring during the first year of life. These links between malnutrition and child feeding practices have been recognized (Sethi *et al.*, 2003). Breastfeeding and weaning of an infant are not only crucial for optimal growth and development but also are important

determinants of future physical and mental well being because of the rapid growth spurt and development of organs and tissues during the first year of life (Waterlow, 1992).

The present study was undertaken to find out prevalence of malnutrition among infants (6-12 months).

■ RESEARCH METHODS

The study was conducted in urban Udaipur, Rajasthan. There were fifty infants (6-12months) selected in which total twenty respondents from anganbadi Paharda, Ganeshnagar, and thirty respondents from anganwadi Shaktinagar areas were selected. The primary tools use in the study was a detailed performa. Information infants age, sex were obtained by interviewing mothers. Height, weight, head and chest circumference were measured to assess the nutritional status of the subjects. The height-for-age index measures linear growth retardation among children, primarily reflecting chronic

malnutrition. The weight-for-height index measures body mass in relation to body height, primarily reflecting acute malnutrition. Weight -for -age reflects both chronic and acute malnutrition. The anthropometry can be used to assess the type, extent and duration of malnutrition in a community. It is relatively efficient to detect individuals at height risk of mortality associated with malnutrition.

RESEARCH FINDINGS AND DISCUSSION

The data of present investigation were collected and statistically interpreted for obtaining the result which were arranged and discussed in accordance with specific objectives of the study and presented in the following heads :

Table 1 shows that 30 per cent male children were in the age group 6-8 months, 11 per cent male children were in age group 8-10 months and 10 per cent were in age group 10-12, while female child per cent were 16 per cent (6-8 months) 12 per cent (8-10 months and 10 per cent (10-12 month).

Table 2 and corresponding Fig. 1 show that 46 per cent respondents belonged to the age group 6-8 months, 34 per cent belonged to age group 8-10 months and 20 per cent belonged to age group 10-12 months.

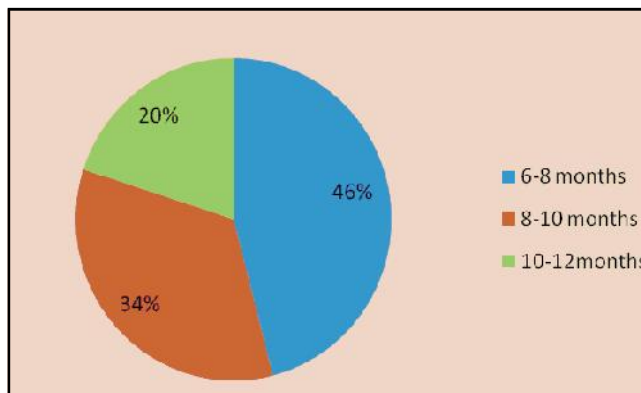


Fig. 1: Distribution of infants on the basis of age group

Weight for age :

The mean weight of boys and girls ranged from 5.76 to 6.96 kg and 4.8 to 6.28 kg that was 68.87 to 71.02 per cent and 62.72 to 68.26 per cent of their standard weight for 6-12 months boys and girls, respectively (NCHS 1977).The above table shows that the observed weight of children were not appropriate according age (Table 3a and 3b).

Age in months	Male		Female		Total Percentage
	No. of children	Percentage (%)	No. of children	Percentage (%)	
6-8 months	15	30	8	16	46
8-10 months	11	22	6	12	34
10-12months	5	10	5	10	20
Total	31	62	19	38	100

Age group in months	No. of children	Percentage
6-8	23	46
8-10	17	34
10-12	10	20
Total	50	100

Age in months	Standard weight(kg)	Respondents		% standard
		Weight(kg)	n	
6-8	8.3	5.76#1.05	15	68.67
8-10	9.1	6.51#1.14	11	71.53
10-12	9.8	6.96#0.93	5	71.02

#standard weight NCHS(1977)

Age in months	Standard weight(kg)	Respondents		% standard
		Weight(kg)	n	
6-8	7.7	4.83#1.06	8	62.72
8-10	8.5	5.98#1.13	6	70.35
10-12	9.2	6.28#0.90	5	68.26

Gomez classification based on weight for age shows that out of 50 respondents all subjects were moderately underweight and none of the subjects were in normal category. From the figure it is clear that proportion of malnutrition among boys were higher than girls (Table 3c and Fig. 2).

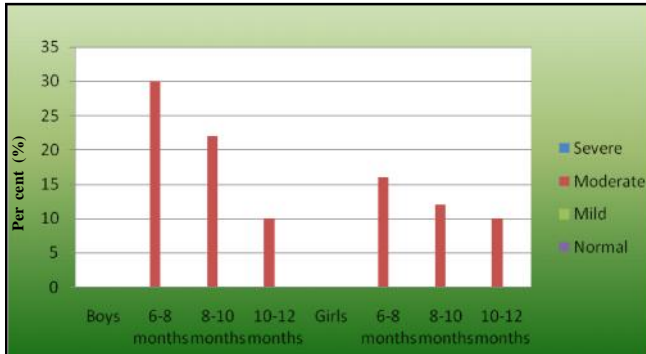


Fig. 2: Percentage distribution of subjects by grades of malnutrition using weight for age

Height for age :

The mean height of boys ranged between 61.88 to 69.84 cms. that was 89.16 to 93.3 per cent of their standard height for 6-12 months. Similarly mean height of girls ranged from 58.5 to 66.28 that was 86.62 to 90.05 per cent to their standard height for 6-12 months (Table 4a and 4b).



Fig. 3: Percentage distribution of subjects by grades of malnutrition using height for age

Gomez classification	Type/degree of malnutrition	Respondents (age in years)						Combined (n=50)
		Boys (n=31)			Girls (n=19)			
		6-8 months	8-10 months	10-12 months	6-8 month	8-10 month	10-12	
<60	Severe	-	-	-	-	-	-	-
60-75	Moderate	15(30)	11(22)	5(10)	8(16)	6(12)	5(10)	50(100)
75-90	Mild	-	-	-	-	-	-	-
>90	Normal	-	-	-	-	-	-	-

Age in months	Standard height (cms)	Respondents		% standard
		Height (cms)		
6-8	69.4	61.88 # 2.98(n=15)		89.16
8-10	72.3	68.72 # 2.70(n=11)		95.0
10-12	74.8	69.84 # 1.51(n=5)		93.3

standard height NCHS(1977)

Age in months	Standard height(cms)	Respondents		% standard
		Height(cms)		
6-8	67.53	58.5#2.4(n=8)		86.62
8-10	70.4	63.31#4.01(n=6)		89.92
10-12	73.6	66.28#2.7(n=5)		90.05

Mclaren's classification	Type of stature	Respondents (age in years)						Combined (n=50)
		Boys (n=31)			Girls (n=19)			
		6-8 months	8-10 months	10-12 months	6-8 months	8-10 months	10-12 months	
<80%	Dwarf	-	-	-	-	-	-	-
80-93%	Short	15(30)	-	5(10)	8(16)	6(12)	5(10)	39(78)
93-105%	Normal	-	11(22)	-	-	-	-	11(22)

Values in parenthesis denote percentage

Classification based on height for age shows that out of 50 respondents most of the subjects 78 per cent were short heighted. only 22 per cent subjects were in normal category (Table 4c and Fig. 3).

Weight for height:

The mean weight of boys and girls were increased with advancement of age but on comparison with standard values, inconsistent pattern was noticed (Table 5a and 5b).

According to classification based on weight for height given by Gopaldas and Seshadri depict that greater part of subjects were severe followed by malnutrition.

According to classification based on weight for height given by Gopaldas and Seshadri depict that greater part of subjects were normal (56%) followed by moderate (34%) and (16%) marginal malnutrition. Majority of both the sexes were in normal category (Table 5c and Fig. 4).

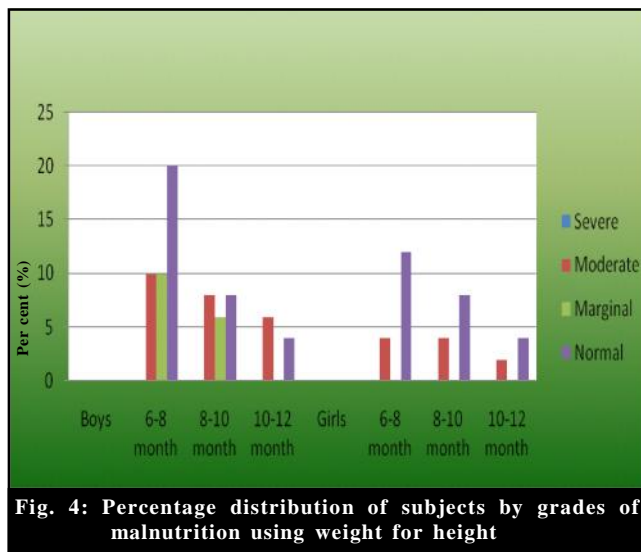


Fig. 4: Percentage distribution of subjects by grades of malnutrition using weight for height

Age in months	Height (cms)	Expected weight (kg) #	Respondents	
			Observed weight (kg)	% Standard
6-8 months	61.88#2.98	8.3	5.76#1.05(n=15)	69.39
8-10 months	68.72#2.70	9.1	6.51#1.14(n=11)	71.53
10-12 months	69.84#1.51	9.8	6.96#0.93(n=5)	71.02

Standard height NCHS (1977)

Age in months	Height (cms)	Expected weight (kg) #	Respondents	
			Observed weight (kg)	% Standard
6-8 months	67.53	7.7	4.83#1.06(n=8)	62.72
8-10 months	70.4	8.5	5.98#1.13(n=6)	70.35
10-12 months	73.6	9.2	6.28#0.90(n=5)	68.26

Standard height NCHS (1977)

Gopaldas and Seshadri, classification	Type/ degree of malnutrition	Respondents (age in months)						Combined (n=50)
		Boys (n=31)			Girls (n=19)			
		6-8	8-10	10-12	6-8	8-10	10-12	
<75%	Severe	-----	----	----	----	-----	-----	-----
75-84%	Moderate	5(10)	4(8)	3(6)	2(4)	2(4)	1(2)	17(34)
85-90%	Marginal	5(10)	3(6)	-----	-----	-----	-----	8(16)
>90%	Normal	10(20)	4(8)	2(4)	6(12)	4(8)	2(4)	28(56)

Gopaldas and Seshadri classification	Type/ degree of mal- nutrition	Respondents (age in years)						Combined (n=50)
		Boys (n=31)			Girls (n=19)			
		6-8	8-10	10-12	6-8	8-10	10-12	
<1	Normal	9(18)	6(12)	3(6)	5(10)	4(8)	5(10)	32(64)
≥1	Mal-nourished	6(12)	5(10)	2(4)	3(6)	2(4)	-----	18(36)

Values in parenthesis denote percentage

Head and chest circumference ratio :

From the Table 6 it is obvious that more than half of the subjects (64%) were normal and other were malnourished (36%) according to head and chest circumference ratio. Fig.5 specifies that boys were comparatively more malnourished than girls. Thus, it could be concluded that the growth of the subjects were inappropriate according to the standard.

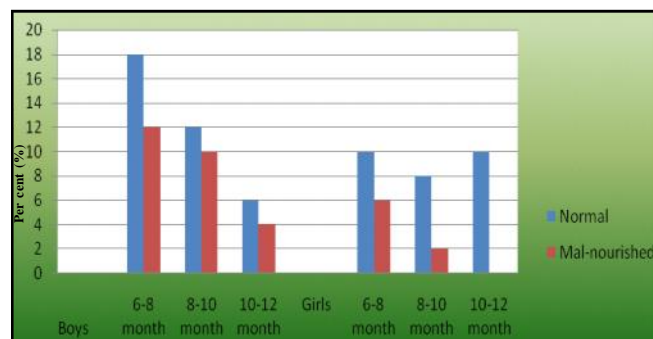


Fig. 5: Percentage distribution of subjects by grades of malnutrition using head chest circumference ratio

Conclusion :

The present study was undertaken to discover the prevalence of malnutrition among the children (6-12 months). Data on demography and socio-economic aspects were collected on a total of 50 children *i.e.* using interviewing their mother. Anthropometric measurements were taken to assess the nutritional status. All the measurements were taken following standard techniques. Anthropometric measurements were expressed as percentage of the standards available from NCHS for a given age and sex and classified for malnutrition using height, weight. The major findings were as follows: Out of 50 respondents, the degree of malnutrition was higher mainly in boys rather than girls in case of weight for age, head and chest circumference. Boys and girls have about the same levels of stunting and underweight, but boys were somewhat

more likely than girls to be wasted. The disadvantage of boys in this regard is surprising in view of other evidence that girls tend to receive less care than boys in India. The mothers are not giving proper attention to the child due to working outside. Mostly mothers left their children at Anganwadi centre.

Mothers have to be educated about the importance of breast feeding, proper time to start weaning, advice against indulging in harmful feeding practice. A health and nutrition survey must be conducted at proper intervals. It may be highly useful for the policy making purposes and to prevent malnutrition. There is a need for timely monitoring of Anganwadi centres.

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