

# Nutritional status of children among the families of women agricultural labourers

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■ **ABSTRACT** : A study was conducted on 160 agricultural labourer households of Odisha having at least one child in the age group of 1-5 years. The nutritional status of children aged 1-5 years was evaluated and was classified into different grades of malnutrition based on weight for age, height for age and weight for height. From the study, it was revealed that the mean weight and height of both male and female children of all groups was much less than the NCHS. It was also found that 77.5 per cent, 78.13 per cent and 71.25 per cent were malnourished on the basis of weight for age, height-for-age and weight-for-height, respectively with highest percentage in the age group of 4-5 years. Majority of the malnourished children belonged to Grade II group. Only 15.63 per cent were totally normal basing on all three parameters *i.e.* weight/age, height/age and weight/ height. Majority 68.13 per cent among malnourished children were in the present and past underfed group (low wt/age, low ht/ age and low wt/ ht).

■ **KEY WORDS** : Nutritional status, Malnutrition, Weight-for age, Height-for-age, Weight-for-height, Agricultural labourers

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India is a predominantly agriculture based country and a majority of India's working population is engaged in agriculture. In recent years, there has been a rise in absolute number of agricultural workers as well as increase in the female workforce. The worst sufferers are the women agricultural labourers. Despite their hard labour, they lead a poor and wretched life. Under this condition, it becomes somewhat difficult to think of the proper growth and development of their children. Consequently the children meet the untimely death and those who survive live a life of poverty, hunger, diseases, ignorance, hatred and exploitation. UNICEF (1985) has pointed out that malnutrition is the biggest single cause of infant and child mortality in the third world countries. Majority of the children in developing countries consume inadequate diet and suffer from malnutrition (ICMR, 1986). Child growth refers to quantitative changes in the systems where as development takes into accounts the effective functioning of the various system of the child. To achieve the aforesaid quantitative

and qualitative changes, the role of parent is highly significant. Broadly speaking the parents should understand the needs and deficiencies of their children and take all possible care including nutrition to make the child physically, socio-economically and mentally sound. In the process of nation building the role of healthy children is a matter of concern for all the welfare states of the country. Considering the above facts in view, the investigation was made in the study to measure the growth parameters in relation to age.

## ■ RESEARCH METHODS

Two districts each of coastal and inland region of Odisha were randomly selected for the study. One block of each district was selected purposively based on the highest percentage of agricultural labourers. From each block, two villages were randomly selected. By adopting proportionate random sampling technique, agricultural labourer households were selected from each village. So, the total numbers of sample households from 8 villages were 160. Care was taken

to ensure that the labourer household should have women agricultural labourer. In each household, the major income must come from agricultural labour and wages.

The data were collected with the help of weighing machine which records weight up to 100.0 kg with a least count of 0.250 kg and non-expandable fiberglass tape up to the nearest 0.1cm for height.

## RESEARCH FINDINGS AND DISCUSSION

The experimental findings obtained from the present study have been discussed in following heads:

### Nutritional status:

The nutritional status of the child is abstract one which is arrived at from some basic growth parameters like height, weight, circumference etc. In the present study the height and weight of the children of agricultural labourers were measured to decide their nutritional level. The above measurements were interpreted with the available standards at various age groups.

### Mean weight of children:

The weight of all the children was measured to find out the difference from standard (NCHS) and presented in Table 1. The distribution of children of the sample in the age group of 1-2, 2-3, 3-4 and 4-5 years were 19, 30, 36 and 75, respectively. The mean weight of male children in the age group of 1-2, 2-3, 3-4 and 4-5 were recorded as 8.0, 9.2, 9.0 and 12.14 kg, respectively. They were found to be less than the means of respective aged children as per NCHS standard such as, 11.5, 13.5, 15.7 and 17.7 kg. Similarly the mean weight of female children was found out to be 7.5, 6.5, 9.5 and 11.75 kg as against 10.8, 13.0, 15.1 and 16.8 kg in NCHS standard in the age group of 1-2, 2-3, 3-4 and 4-5 years, respectively. From the above findings it was observed that the mean weight of both male and female children of all groups was found to be much less than the NCHS standard although there were cases which met the NCHS standards. Mean weight of male children of all the groups except the group 3-4 year old was found to be higher than that of female children. The above finding clearly indicates the advantage in nutrition enjoyed by the male children. Generally parents provide more food to their male children in accordance with

the prevailing social norms. Male child is generally provided with nutritious diet as well as food more than their share. In the age group of 3-4 the mean weight of female child was found to be higher than that of male but the magnitude was found to be very small.

Sr. No	Age (years)	Mean weight of male children (kg)	NCHS standard	Mean weight of female children (kg)	NCHS standard
1.	1-2	8.0	11.5	7.5	10.8
2.	2-3	9.2	13.5	6.5	13.0
3.	3-4	9.0	15.7	9.5	15.1
4.	4-5	12.14	17.7	11.75	16.8

### Mean height of children:

The height of the children was also measured like the weight and is presented in Table 2. The mean height of male children in the age group of 1-2, 2-3, 3-4 and 4-5 years old were found to be 72.0, 80.6, 92.5 and 97.63 cm, respectively, whereas, for these age groups, the heights as per NCHS standard were 82.4, 90.4, 99.1 and 106.6 cm, respectively. Similarly, the mean heights of female children of same age groups were observed to be 69.5, 72.0, 89.4 and 101.5 cm, respectively as against the NCHS standard of 80.9, 89.5, 97.9 and 105.1, respectively. At all ages, the mean height of the male children were found to be more than that of the female children except in the 4-5 year old. The mean height of all the age groups of both male and female children was found to be less than the NCHS standard. This may be due to their poor diet.

Sr. No.	Age (years)	Mean height of male children (cm)	NCHS standard	Mean height of female children (cm)	NCHS standard
1.	1-2	72.0	82.4	69.5	80.9
2.	2-3	80.6	90.4	72.0	89.5
3.	3-4	92.5	99.1	89.4	97.9
4.	4-5	97.63	106.6	101.5	105.1

### Nutritional status of children as per weight-for-age:

The results of nutritional status of children as per weight-for age from 1-5 years old according to IAP classification are presented in Table 3. It was observed that

Sr. No.	Nutritional status Age in years	Malnourished					Pooled	Normal
		Gr. I	Gr. II	Gr. III	Gr. IV			
1.	1-2	5 (3.13)	4 (2.5)	-	-	9 (5.63)	10 (6.25)	
2.	2-3	12 (7.5)	5 (3.13)	9 (5.63)	-	26 (16.25)	4 (2.5)	
3.	3-4	10 (6.25)	14 (8.75)	6 (3.75)	4 (2.5)	34 (21.25)	2 (1.25)	
4.	4-5	17 (10.63)	27 (16.88)	6 (3.75)	5 (3.13)	55 (34.38)	20 (12.5)	
	Total	44 (27.5)	50 (31.25)	21 (13.13)	9 (5.63)	124 (77.5)	36 (22.5)	

Figures in the parentheses indicate percentage

out of 160 children, 77.5 per cent were found to be malnourished as against 22.5 per cent normal.

It was further noticed that among the malnourished children, majority belonged to grade II group (31.25 %) followed by grade I (27.5 %), grade III (13.13 %) and grade IV (5.63%). Highest percentage (34.38) of malnutrition was found among the children who were in the age group of 4-5 years.

The result was in congruence with that of Raj *et al.*, (1985) who in their study of protein- energy malnutrition in children below six years of age in rural area of Allahabad, found that the incidence of PEM of infants was 73.2 per cent.

**Nutritional status of children as per height-for-age:**

Children coming under each malnourished category as indicated by percentage of height -for -age based on Waterlow’s classification is presented in Table 4. It was observed that highest percentage (78.13) children with lower heights were under malnourished group as against 21.88 per cent with normal nutritional status. About 46.0 per cent children were observed to be marginally malnourished followed by 23.13 per cent in the moderately malnourished

group. It was also found that 9.38 per cent children were in the severely malnourished group. Highest percentage (35.0) of malnutrition was found among the children who were in the age group of 4-5 years.

The result was well supported by Geetha *et al.* (2002) who reported that about 7.20 per cent of sample belonged to the category of severe degree of malnutrition. Similarly, high incidence of severe degree of malnutrition was 10.5 per cent in the ICDS areas of Bihar (NIN, 1992).

**Nutritional status of children as per weight-for-height:**

Classification of nutritional status of children based on weight- for- height is presented in Table 5. It was found that majority (71.25%) of children under study were malnourished as against 28.75 per cent normal children. The result indicated that highest percentage (40.0) of children had mild malnutrition followed by 20.0 per cent in the moderately malnourished and 11.25 per cent in the severely malnourished group. Highest percentage (30.0) of malnutrition was found among the children who were in the age group of 4-5 years.

Sen *et al.* (1980) in their study of weight- for-height

Sr. No.	Nutritional status (Age in years)	Malnourished			Pooled	Normal (>95 %)
		Marginal (90-95%)	Moderate (85-90%)	Severe (<85%)		
1.	1-2	9 (5.63)	1 (0.63)	4 (2.5)	14 (8.75)	5 (3.13)
2.	2-3	15 (9.38)	9 (5.63)	6 (3.75)	30 (18.75)	-
3.	3-4	19 (11.88)	6 (3.75)	-	25 (15.63)	11 (6.88)
4.	4-5	30 (18.75)	21 (13.13)	5 (3.13)	56 (35.0)	19 (11.88)
	Total	73 (45.63)	37 (23.13)	15 (9.38)	125 (78.13)	35 (21.88)

Figures in the parentheses indicate percentage

Sr. No.	Nutritional status (Age in years)	Malnourished			Pooled	Normal (>90 %)
		Mild (80-90%)	Moderate (70-80%)	Severe (<70%)		
1.	1-2	9 (5.63)	-	-	9 (5.63)	10 (6.25)
2.	2-3	18 (11.25)	6 (3.75)	-	24 (15.0)	6 (3.75)
3.	3-4	6 (3.75)	14 (8.75)	13 (8.13)	33 (20.63)	3 (1.88)
4.	4-5	31 (19.38)	12 (7.5)	5 (3.13)	48 (30.0)	27 (16.88)
	Total	64 (40.0)	32 (20.0)	18 (11.25)	114 (71.25)	46 (28.75)

Figures in the parentheses indicate percentage

Sr. No.	Nutritional status	Frequency, n=160
1.	Normal (normal wt/age, normal ht/age and normal wt/ht)	25 (15.63)
2.	Presently malnourished (low wt/age, normal ht/age and normal wt/ht)	5 (3.13)
3.	Presently underfed with past history of malnutrition (low wt/age, low ht/age and normal wt/ht)	5 (3.13)
4.	Presently normal fed with past history of malnutrition (normal wt/age, low ht/age and normal wt/ht)	11 (6.88)
5.	Presently underfed (low wt/age, normal ht/age and low wt/ht)	5 (3.13)
6.	Present and past underfed (low wt/age, low ht/age and low wt/ht)	109 (68.13)
	Total normal	25 (15.63)
	Total malnourished	135 (84.37)

Figures in the parenthesis indicate percentage

rated in assessment of protein calorie malnutrition found that only 50.0 per cent infant were malnourished.

### Nutritional status of children taking all three parameters:

The nutritional status of children taking weight/age, height/age and weight/ height in to consideration is presented in Table 6. It revealed that only 25 (15.63%) out of 160 children were totally normal basing on all three parameters. The rest 84.37 per cent had different degrees of malnutrition. Majority (68.13%) among malnourished children were in the present and past underfed group (low wt/age, low ht/ age and low wt/ht) followed by 6.88 per cent in the presently normal fed with past history of malnutrition group (normal wt/ age, low height/age and normal wt/ ht). The rest three groups *i.e.* presently malnourished (low wt/age, normal ht/age and normal wt/ht), presently underfed with past history of malnutrition (low wt/age, low ht/age and normal wt/ht) and presently underfed (low wt/age, normal ht/age and low wt/ht) comprised of 3.13 per cent children each. Prolonged exclusive breast feeding, delayed weaning, ignorance of nutritional need of children and high morbidity due to diarrhoea were probably some of the causative factors. It was also found out while analyzing their background that they were economically and educationally poor, lived in unhygienic environment and had poor inner resource capability. In addition to this, lack of time and mind to look after the child, suffering from various occupational and health hazards were probably some of the other causative factors. Most of the labour families had no homestead land for kitchen gardening and had limited adoption of recommended childcare practices.

### Conclusion:

From the study it was concluded that the mean weight and height of both male and female children of all groups was much less than the NCHS. It was also concluded that 77.5 per cent were malnourished on the basis of weight for

age and highest in the age group of 4-5 years (34.38 %). Majority of the malnourished children belonged to Grade II group (31.25 %). On the basis of height -for -age it can be concluded that 78.13 per cent children were under malnourished group with highest percentage (35.0) in the age group of 4-5 years. On the basis of weight- for- height majority (71.25 %) of children were malnourished with highest percentage (30.0) in the age group of 4-5 years. On the basis of nutritional status of children taking weight/age, height/age and weight/ height it can be concluded that only 25 (15.63 %) were totally normal basing on all three parameters. Majority (68.13 %) among malnourished children were in the present and past underfed group (low wt/age, low ht/ age and low wt/ ht).

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