

Feeding Practices and Nutritional Status of Tribal Children Under 5 Years of Age in ITDA Paderu Division, Visakhapatnam

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Abstract :

Introduction : Nutritional status of any community is influenced by interplay of various factors including beliefs, customs, food availability in the region. Children from tribal groups are particularly under privileged. They have higher rates of morbidity and are known to receive less than desired nutritional intake. The present study was conducted with the objectives to study the feeding practices of Tribal Children aged 6 months to 5 years and to assess the nutritional status of these children.

Methodology: A Community based cross-sectional study conducted in ITDA Paderu division of Visakhapatnam district. Study population include tribal children in the age group of 6 months to 5 years. A sample of 181 children were surveyed. After taking consent, information was obtained from mother/care taker on feeding practices according to IYCF and IMNCI guidelines.

Results: Majority (88.4%) of children received exclusive breast feeding. In 26% children introduction of solid and semisolid food was delayed beyond 6 months. Among the children aged 6 months to 2 years, 80% had minimum diversity in their diet, 71.2 % had minimum meal frequency and 48.5% were taking minimum acceptable diet. Among the children 2 to 5 years of age, 62.6% were taking 3 meals and 2 nutritious foods per day. Prevalence of Underweight (<-2 of WHO Z score) was found as 49.2%, stunting as 51% and wasting as 32.2%.

Conclusion: Feeding practices of tribal children in the early infancy are satisfactory. However in the late infancy and early childhood, there is deficiency in the frequency and adequacy of the feeds leading to wasting and stunting.

Keywords – Feeding practices, IYCF, Nutritional status, Tribal children, Visakhapatnam

I. Introduction

Nutritional status of any community is influenced by interplay of various factors including beliefs, customs, food availability in the region. This in turn influences the physical growth and nutritional status of the whole community[1]. According to the 2011 census, the scheduled tribes comprise about 8.6% of total India's population[2]. Since most of the tribal habitations are located in isolated villages and hamlets coinciding with forest areas, there are natural hurdles in their ability to access nutritious food and also health care. The literacy, economic and health indicators for tribal people are poorer than for the rest of the population which in turn influence their food intake. Women and children from these groups are particularly under privileged. They have higher rates of morbidity, and are known to receive less than desired nutritional intake. According to NFHS-3, 54.5 % children under 5 years belonging to Scheduled Tribes have been reported to be underweight.[3].

II. Methodology

A Community based cross-sectional study was conducted in ITDA Paderu division of Visakhapatnam district with objectives 1) To study the feeding practices of Tribal Children aged 6 months to 5 years 2) To assess the nutritional status of these children. A sample of 181 children (calculated based on prevalence as reported by NNMB study) between 6 months to 5 years were surveyed. Multistage simple random sampling technique was applied to select 9 villages in tribal mandals located in 3 Community Health and Nutrition Centres. A house to house survey was conducted to interview 20 children in each village. In case of less populated villages/ small hamlets, where 20 children could not be covered, the subsequent village/ hamlet was included. After taking consent, information was obtained from mother/care taker (above 15 years of age) on feeding practices according IYCF and IMNCI guidelines. As feeding practices differ in children of different age groups, the study population were categorized into two groups 1) 6 to 23 months of age 2) 2 to 5 years of age.

Information on indicators such as exclusive breast feeding, continued breast feeding, age at introduction of solid and semisolid food was obtained for all the children. Information on other IYCF indicators such as minimum meal frequency, minimum dietary diversity, and minimum acceptable diet was obtained for children aged between 6 to 23 months. For children between 2 to 5 years, information on feeding as per IMNCI guidelines[4] was obtained. Anthropometric measurements such as height, weight and mid upper arm circumference were measured for all the children. Three standard indices of physical growth such as Weight-for-age (underweight), Height-for-age (stunting), Weight-for-height (wasting) expressed in terms of WHO Z scores were used to describe the nutritional status of children.

III. Results

Among the study population, 47% were male and 53% were female children. The total number of children in 6 to 23 months were 66, and 2 to 5 years were 115. Among all, majority (88.4%) received exclusive breast feeding, 11.6% children received artificial feeding along with breast milk in the first 6 months of age (table 1). In 74 % of the children, introduction of solid and semisolid feeding was in the 6th month of their age. In 26% of children it was delayed beyond 6 months. Table no 2 shows that 80 % of the children had 4 or more (out of seven) types of food groups included in their diet as per the definition of the Minimum diversity of foods by WHO under IYCF guidelines however only 19.7% of children were consuming less than 4 varieties of food groups in their diet. Regarding the meal frequency, 71.2 % children were consuming meals more than required minimum number or frequency. Only 48.5% of children were taking at least or more than minimum acceptable diet. Table no.3 shows that 62.6% of the children in the age group of 2 yrs to 5 yrs were taking 3 meals and 2 nutritious foods per day as per IMNCI guidelines. Majority of them (86.2%) were taking feeds on their own, 13.8% were being fed by parents or care taker. Sharing of food from the same plate along with other children or parents was observed in 9.2%.

Anthropometric measurements:

Figure no.1 shows the height and weight distribution of the study population. Mean weight of study children was at -1.99 Z score and mean height was at -2.17 Z score. Table no. 4 shows that almost half of the children (49.2%) were underweight i.e., weight for age less than < - 2 of WHO Z score. Among the underweight, 32.5% were severely underweight. Except for the first 12 months, in all other age groups around half of the study children had weight for age below -2 of WHO Z score. The prevalence of underweight was high in 13-24 and 25-36 months of age (59% & 55.1% respectively).

As shown in the above table no 5, 59% of the study children were stunted i.e., they had height for age < -2 of WHO Z score. Among them, 64.5% had severe stunting (<-3of WHO Z score) , which was more observed in 49-60 months age group. Regarding weight for height, table no. 6 shows that 22.2% the study children had wasting i.e., their weight for height less than < -2 of WHO Z score. Among them, 35% had severe wasting (<-3of WHO Z score). Wasting was more prevalent in 13-24 months of age. Out of 181 children 100 children (55.24%) were with MUAC < 13.5 cm.

IV. Discussion

IV.I.I Feeding practices of tribal children:

It was observed that during the first six months of age of the study children, majority (88.4%) received exclusive breast milk. Among the tribal people, the practice of consuming cow or buffalo milk or any other dairy product is very negligible. Even for the purpose of feeding infants and young children mothers depend on breast milk as compared to other sources indicating a positive cultural factor benefitting the health of the new born. However this finding is in contrast to other studies which reported a poor percentage of exclusive breast feeding among other tribes. It was reported as low as 20.8% among Kol tribes of Madhya Pradesh by Tiwari et al where as in studies by Burhanuddin et al, Mondal et al and Sinhababu et al^[5,6,7,8] it was between 31 % to 57%. The child rearing practices followed by the tribal women in our study are favorable to the children. Practice of introduction of solid or semisolid food (complimentary foods) by six months of age was observed in 74 % of children This is similar to finding of Laxmiah et al^[9] who reported it as 76%. Other studies among Santals by Mondal et al^[5] and among tribes of Bankura district by Sinha babu et al^[7] reported it as 46.6% and 55.7% respectively.

Regarding the IYCF practices, most of the children in the age group of 6 – 24 months received more than 4 types of food groups such as grains, roots, legumes, fruits, dairy products, eggs and flesh food in their diet. Mothers of more than 80% of the children demonstrated Minimum dietary diversity. Also majority of the children were receiving foods more than the recommended number of times in a day for their age. In contrast to this finding, Mondal et al^[5] has reported a low minimum dietary diversity standards (30.85%) and minimum meal frequency (41.49%) in their study. However in the present study it is observed that only half (48.5%) of

the children had minimum acceptable diet i.e. having both minimum dietary diversity and minimum meal frequency. Which means rest of the children were either receiving more food groups less frequently in a day or less food groups more number of times in a day. Therefore mothers need to be educated on these IYCF guidelines[10] to include more food groups and feed as frequently as advised.

Regarding feeding practices of children more than 24 months, IMNCI recommends at least 3 meals and 2 nutritious foods per day. In this study 62.6% of the children of 2 years to 5 years, were receiving adequate frequent meals as per the IMNCI guidelines[4] and 90.8 % were had separate plate for food. Majority of them (86.2%) were taking feeds on their own.

IV.I.II Nutritional status of Tribal children:

In our study, the prevalence of underweight among children under five was found to be 49.2%. Among the underweight, 35.29% were severely underweight (< -3 of WHO Z score).The age wise weight distribution of the children shows that less percentage of children were underweight during their infancy and as the age progresses more number of children are falling in to the bracket of underweight. This can be attributed to the fact that practices such exclusive breast feeding and timely initiation of complimentary feeds are keeping the infant well-nourished but as age progresses and the milk feed is slowly withdrawn, the quantity of food supplementation are not adequate to meet the demands of the young child’s growth and development thus forcing him into the bracket of underweight. Other studies[7] have also attributed the problem of underweight to inappropriate complementary feeding practices along with late initiation and low rates of breast feeding.

Height for age index reflects chronic energy deficiency. In this study, it is observed that the percentage of children being stunted increases as the age progresses which means children in the younger age groups being well nourished are gaining good height but as the age progresses, due to inadequate complimentary feeds, they gradually end up having low height for their age or severe stunting. However the weight for height index (wasting) indicating acute malnutrition shows that more percentage of children in the 13 – 24 months are wasted. This is the critical age bracket where the inadequacy in the complimentary feeds directly affects the weight of the child leading to acute malnutrition. Gradually it is found to be zero in the older age groups suggesting that for the low height gained over a period of time, weight for that height is normal. According to Mid upper arm circumference, out of 181 children 100 children (55.24%). were malnourished i.e., were having < 13.5 cm.

V. Figures and Tables

Table no.1 Breast feeding and complimentary feeding practices of tribal children

Breast feeding	Number (%) n=181
Exclusive breast feed	160(88.4)
Artificial feed along with breast	21(11.6)
Continued breast feeding	Number (%) n=181
<1yr	34(18.7)
1-2yrs	37(20.5)
>2yrs	110(60.8)
Age at Initiation of solid or semisolid feeds	Number (%) n=181
5 months	7 (3.9)
6 months	134 (74)
7 months	27 (14.9)
8 months	8 (4.4)
9 months	3 (1.7)
12 months	2 (1.1)

Table No. 2. IYCF indicators in children between 6 to 24 months of age

Minimum dietary diversity	Number (%) n=66
Taking diet with more than Minimum dietary diversity	53 (80.3)
Not taking diet with Minimum dietary diversity	13 (19.7)
Minimum meal frequency	Number (%) n=66
Taking diet with more than Minimum meal frequency	47 (71.2)
Not taking diet with minimum meal frequency	19 (28.8)
Minimum acceptable diet	Number (%) n=66
Taking diet with more than minimum acceptable diet	32 (48.5)
Not taking diet with minimum acceptable diet	34 (51.5)

Table no 3 Feeding practices of children above 2yrs - 5yrs of age

Frequency of intake of meals	Number (%) n=115
Taking 3 meals and 2 nutritious foods per day	72 (62.6)
Not taking 3 meals and 2 nutritious foods per day	43 (37.4)
Feeding practice	Number (%) n=115
Self-feeding	99 (86.2)
feeding by care taker	16 (13.8)
Shared feeding in same plate	Number (%) n=115
Yes	11 (9.2)
No	104 (90.8)

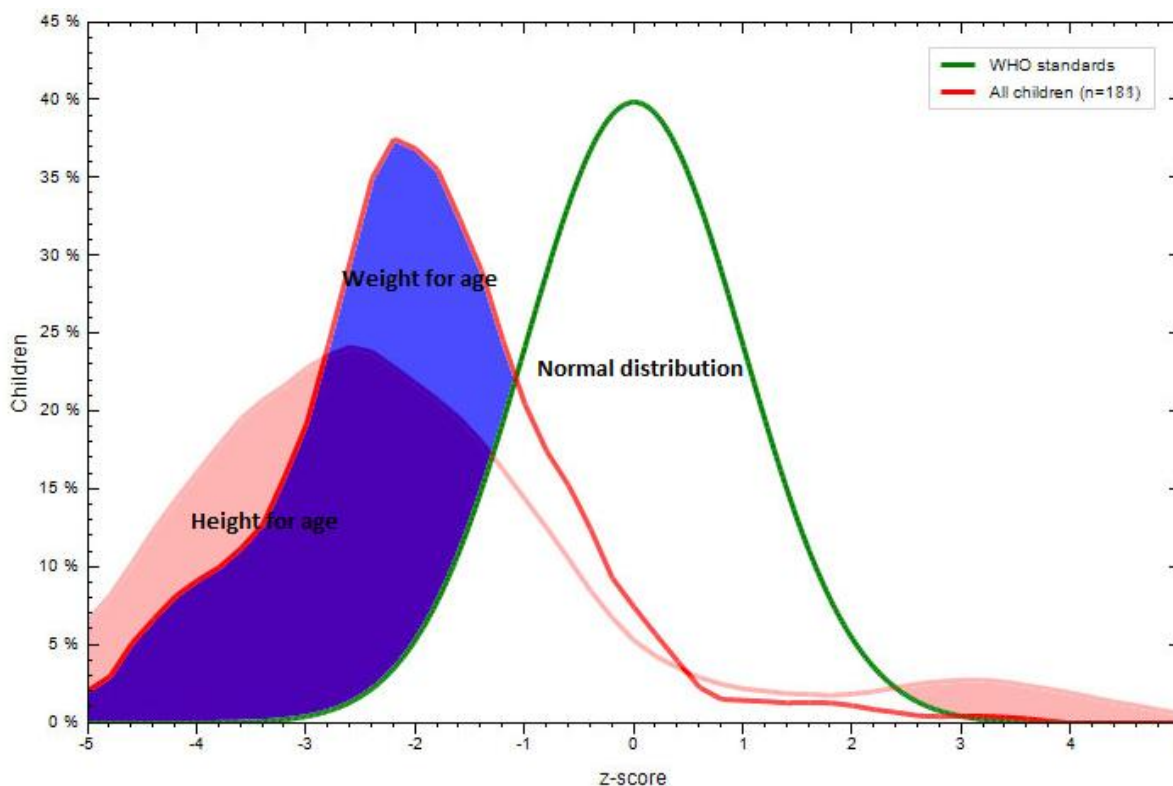


Figure No.1 Distribution of Height and Weight of Study children

Table no. 4. Prevalence of Underweight in study children

Age groups	Total number of children	Normal n (%)	Under weight < -2 of WHO Z score n (%)	Severe Underweight among underweight
6-12 months	33	22 (66.7)	11(33.3)	5 (45.45)
13-24 months	39	16 (41)	23 (59)	7(30.43)
25-36 months	49	22 (44.9)	27 (55.1)	11(40.7)
37-48 months	29	15 (51.7)	14 (48.3)	1 (7.14)
49-60 months	31	17 (54.8)	14 (45.2)	5 (35.71)
Total	181	92 (50.8)	89 (49.2)	29 (32.58)

Table no. 5. Prevalence of stunting in study children

Age groups	Total number of children	Normal n (%)	Stunting < -2 of WHO Z score n (%)	Severe stunting among stunting < -3 of WHO Z score n (%)
6-12 months	33	21(62.5)	12(37.5)	7(58.33)
13-24 months	39	23 (59)	16 (41.0)	11 (68.75)
25-36 months	49	18 (38.3)	31 (61.7)	24 (77.41)
37-48 months	29	9 (31)	20 (69.0)	7(35)
49-60 months	31	3 (9.7)	28 (90.3)	21 (75)
Total	181	74 (41)	107 (59.0)	69 (64.48)

Table no. 6. Prevalence of wasting in study children

Age groups	Total number of Children	Normal n (%)	Wasting <-2 of WHO Z score n (%)	Severe wasting < -3 of WHO Z score n (%)
6-12 months	33	25 (75.9)	8 (24.1)	2 (25)
13-24 months	39	19 (48.7)	20 (51.3)	11 (55)
25-36 months	49	41 (83.7)	8 (16.3)	1 (12.5)
37-48 months	29	25 (86.2)	4 (13.8)	0 (0)
49-60 months	31	0 (0)	0 (0)	0 (0)
Total	181	141 (77.8)	40 (22.2)	14 (35)

VI. Conclusion

Tribals follow child friendly feeding practices as reflected in the breast feeding and weaning practices. It is understood from this study that feeding practices in the early infancy are satisfactory. However as the child grows old, there is deficiency in the frequency and adequacy of the feeds because of which the child becomes wasted and stunted. Reasons for which may be poverty, illiteracy and non-accessibility to nutritious foods and health education.

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