

Nutritional Status Of The Rabha Tribal Children Of Udalguri District Of Assam, India

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ABSTRACT:

Tribal populations in India are considered to be socio-economically the most disadvantaged group and tribal children have very poor health indicators when compared to the rest of the population. In the present study an attempt has been made to assess the nutritional status of under- five years age group among the Rabha children of Udalguri district, Assam, India. For assessing the nutritional status of children, three anthropometric indices- height for age, weight for height and weight for age, which are considered as good indicators of assessment of nutritional status were adopted. Among the 225 children who were assessed for malnutrition, 93 (41.33%) were stunted, 62 (27.56%) wasted and 68 (30.22%) underweight as per WHO Growth Standards. The prevalence of malnutrition was found more common in girls as compared to boys. Education of the mothers was found to have a strong inverse relationship with all three measures of nutritional status. Education among the parents to improve nutritional status in the children as well as modification in the lifestyle can help to decline this health concern.

Keywords: Rabha children, India, malnutrition, stunted, wasted, underweight.

1. INTRODUCTION

Nutrition during the first five years of life has an impact not only on growth and morbidity during childhood, but also has a persistent impact on their physical and mental development and on their health status as adult. Nutritional deficiencies give rise to various morbidities, which in turn, may lead to increased mortality. Under nutrition is considered as major public health problem that closely associated with child mortality rates. The survivors of under nutrition have its pervasive effects that include acute morbidity as well as long-term impairment of cognitive & social development, physical work capacity, productivity, and economic growth (Jethy, 2008).

In India, 20% children of under five years children are suffer from wasting due to acute undernutrition. More than one third of the world's children who are wasted live in India. Forty three per cent of Indian children under five years are underweight and 48 percent are stunted due to chronic undernutrition, India accounts for more than 3 out of every 10 stunted children in the world (UNICEF, 2017). Despite rapid economic development along with increase in food production in recent decades and several nutritional intervention

programmes in operation since the last three decades, childhood under nutrition remains an important public health problem in India (Somawar & Phuljhale, 2015).

Most of the Indian of children living in the backward and drought-prone rural areas, urban slums and those belonging to the socially backward groups like scheduled castes and tribal communities are highly susceptible to under nutrition (Vijayaraghavan *et al.*, 2000; Ghosh & Shah, 2004; Uppal *et al.*, 2005; NNMB, 2000). But condition is worst among the scheduled tribe communities. The majority of tribal people of India have their own geographically isolated lifestyle. Inadequate food habits along with traditional socio-economic activities may lead to a high proportion of child malnutrition (Balgir *et al.*, 2002; Rao *et al.*, 2006).

In the present study an attempt has been made to assess the nutritional status of under- five years age group among the Rabha children of Udalguri district, Assam.

2. MATERIAL AND METHODS

The sample for the present cross-sectional study was collected from five villages of Udalguri district, Assam namely Baniapara, Sastrapara, Batabari, Kuwabil and Belguri mostly dominated by Rabha tribal population. A sample of 225 under five years children (118 boys and 107 girls) were selected for the present study. In the present study, only the permanent tribal residents were included; floating population and children born to mother who did not stay in the area were excluded from the study. Anthropometric measurements in the form of height and weight were taken by using standard techniques (WHO, 1995). Height of children under two years of age was measured in supine position using infantometer (Seca, Germany) and older children were measured using anthropometer rod. The body weight of each child was measured using lever balance. The ages of the children were obtained from the birth records available with the sub health centre and were crosschecked with the parents by using local events calendar to ensure accuracy of the records. The heights and weights of each child were compared with National Center for Health Statistics (NCHS) reference data (WHO, 1983) for age and sex of children. The indices of nutritional status (weight for age, height for age and weight for height) were expressed in standard deviation units (z scores) from the reference median as recommended by the WHO (WHO, 1986). Children with more than two standard deviations below the reference median on any of the indices were considered to be undernourished and the children who fell more than three standard deviations below the reference median were considered to be severely undernourished.

3. RESULTS

Table 1 shows socio-demographic characteristic of tribal children of Udalguri district. In the present study a total of 225 children were surveyed out of which 52.44% were male and 47.56% were female. Most of the children were found to be the age group of >4-5 years (28.89%) followed by >1-2 years (24.24%), 0-1 years (17.78%), >2-3 years (14.67%) and >3-4 years (14.22%). Higher proportions of children were found in joint families (65.33%) than the nuclear families (34.67%). Semi *pucca* houses (56.89%) were predominantly found in the study population while 2.66% children have no sanitary latrine in their house home and they usually goes to the open air for defecation. One third children (33.33%) were using drinking water after boiling or filtering.

Mean anthropometric measurements of children is shown in the table 2. Boys were slightly taller and heavier than girls but the difference was not significant. Both the boys and girls were shorter and lighter compared to the NCHS reference data for their ages and sex.

Table 3 shows nutritional status of under five years children. In the present study, underweight, stunting and wasting children were found higher among the girls than the boys. As shown in table 4, children of educated mothers, more so having education above primary level were found to have lesser prevalence of underweight (16.17 %), stunting (17.20 %) and wasting (8.06%) while comparing with illiterate mothers where underweight, stunting and wasting prevalence were recorded as 55.88 % and 49.46 % and 50.00% respectively. Similarly, employed mothers have very few nutritionally weaker children with proportion 10.29 %, 15.05% and 16.13 % in comparison to home makers where the prevalence of underweight, stunting and wasting were 89.70% and 84.95 % and 83.87% respectively. Mother's control over purchase of dietary items was also found to be negatively related with child's nutritional status.

Overall, 55.56% (125 out of 225) of the children had shown incidence of morbidity, diarrhoea and dysentery(36.7%) being the commonest followed by pneumonia (15.43%), unspecified fever (10.11%), common cough (7.45%), flu (6.91%),unspecified jaundice (6.38%), skin disease (4.26%), anemia (4.26%), measles (2.66%), malaria (2.13%), mumps (2.13%) and asthma (1.60%).The percentages of male and female child morbidity are reported as 59.57and 40.43 respectively (Table 5).

4. DISCUSSION

Undernutrition plays an important role in mortality. Almost 50 percent of all deaths among children are associated with undernutrition (Rice *et al.*, 2000). Even if a child is only mildly undernourished, the mortality risk is increased. Because the prevalence of mild to moderate undernutrition is high, it contributes to a larger proportion of deaths than severe undernutrition. According to NFHS-4 reports in India, 38.4% children of under 5 years are stunted, 21.0% are wasted and 35.7% underweight. The proportion of stunted, wasted and underweight children in Assam is found to be 36.4%, 17.0% and 29.8% respectively (NFHS-4, 2017). In the present study 225 children who were assessed for malnutrition, 93 (41.33 %) were stunted, 62(27.56%) wasted and 68 (30.22%) underweight as per WHO Growth Standards. Rao *et al.* reported higher prevalence of underweight (72.1%) and stunting (67.8%) while prevalence of wasting (13.4%) was low among tribal pre-school children (Rao *et al.*, 2006). Another study reported similar prevalence for underweight and wasting, while prevalence of stunting was low among pre-school tribal children of Gond community (Rao *et al.*, 2005).The prevalence of undernutrition was higher among tribal children than their rural counterparts(IIPS, 2007).

Under nutrition is also found to be a serious public health concern among tea garden population in Assam particularly among vulnerable populations such as women in reproductive age group and growing children (Medhi *et al.*, 2006; Medhi & Mahanta, 2004). The present study shows higher prevalence of under nutrition among the girls than boys, while the reverse was observed in other studies (Singh & Mondal, 2013).

Good child care practices are influenced by the mother's education. In the present study, maternal education was found to be inversely associated with all three measures of nutritional status *viz.* underweight, stunting and wasting. For every measure of nutritional status, nutritional deficiencies decrease steadily with rising education of the mother. The percentage of children who were underweight was more than three times as high for children whose mothers had no education than for children whose mothers had completed above primary level education. The educational differentials were almost as large for wasting. Similar trend was also observed in the NFHS-4 study (NFHS-4, 2017).

The study shows that educated mothers have control over purchase of dietary items and can take care of their children more effectively which is reflected in better nutritional status of their children. Whereas children of poor employed mothers have no control over purchase of dietary items and thus suffer nutritionally. Thus the study underlines the need of improving mothers' status even in low economic set up which in turn will help in improving the nutritional status of their children.

Common causes of child morbidity were found as diarrhoea and dysentery, pneumonia, unspecified fever, common cough, flu, unspecified jaundice, skin disease, anemia, malaria, measles, mumps and asthma. In developing countries, under-five mortality is largely a result of infectious diseases and neonatal deaths. Undernutrition is an important factor contributing to the death of young children.

If a child is malnourished, the mortality risk associated with respiratory infections, diarrhoea, malaria, measles, and other infectious diseases is increased (Arnold, 2009).

5. CONCLUSION

The nutritional scenario of many countries including India have been changed radically during last few decades due to changes in dietary habits, socio-economic development, lifestyle modification and risk of non communicable diseases. In the present study the prevalence of under nutrition is found to be the major public health problem that increases the premature mortalities and morbidities. Therefore it is suggested to strengthen the behaviour change interventions especially for mothers on the topics related to nutrition, safe cooking practices and balanced diets for the better and healthy life of their children. As the most of the families in the study area are agrarian, interventions like nutrition gardens can also be planned accordingly. Low cost, indigenous locally available food products shall be mapped in their ecosystem and tribal women shall be made aware of their nutritive value. Awareness generation regarding the child health issues shall be provided through Anganwadi Centres under the umbrella of Integrated Child Development Services (ICDS) programme. By targeting children at an early age with proper awareness among mothers, the burden of under nutrition can be further reduced and controlled. The population from the lower socio economic status can be preferentially studied and targeted to uplift nutritionally and bring the changes in the issue of malnutrition in the society.

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Table 1

Socio-demographic characteristics of tribal children

| Characteristics | No | % |
|--------------------------------------|-----|-------|
| Sex | | |
| Male | 118 | 52.44 |
| Female | 107 | 47.56 |
| Age of the children (in yrs.) | | |
| 0-1 | 40 | 17.78 |
| >1-2 | 55 | 24.44 |
| >2-3 | 33 | 14.67 |
| >3-4 | 32 | 14.22 |
| >4-5 | 65 | 28.89 |
| Family type | | |
| Joint | 147 | 65.33 |
| Nuclear | 78 | 34.67 |
| House type | | |
| <i>Kachha</i> | 25 | 11.11 |
| <i>SemiPucca</i> | 128 | 56.89 |
| <i>Pucca</i> | 72 | 32.0 |
| Sanitary facility | | |
| Flush | 141 | 62.66 |
| <i>Kachha</i> | 78 | 34.66 |
| Open | 6 | 2.66 |

| Nature of use of drinking water | | |
|--|-----|-------|
| Filter or boil | 150 | 66.66 |
| Nothing | 75 | 33.33 |

Table 2:

Mean anthropometric measurements of tribal children

| Age | Mean Weight (in kg) | | Mean Height (in cm) | |
|-----------|---------------------|--------|---------------------|--------|
| | Male | Female | Male | Female |
| 0-1 years | 6.22 | 5.61 | 62.94 | 61.28 |
| 1-2 years | 8.38 | 7.64 | 72.46 | 71.55 |
| 2-3 years | 10.0 | 9.48 | 80.1 | 79.39 |
| 3-4 years | 11.68 | 10.15 | 84.21 | 77.83 |
| 4-5 years | 13.39 | 12.79 | 95.14 | 93.74 |

Table 3:

Nutritional status of tribal children

| Children | Underweight | | Stunting* | | Wasting | |
|---------------|-------------|-------|-----------|-------|---------|-------|
| | No | % | No | % | No | % |
| Boys (n=118) | 31 | 26.27 | 41 | 34.74 | 27 | 22.88 |
| Girls (n=107) | 37 | 34.57 | 52 | 48.49 | 35 | 32.71 |
| Total (n=225) | 68 | 30.22 | 93 | 41.33 | 62 | 27.56 |

* p value= significant

Table 4:

Relationship between variables of Mother's Status and Nutritional status of tribal children.

| Variables of Mother's status | Nutritional status of under five children | | | | | |
|--|---|-------|----------------|-------|---------------|-------|
| | Underweight(n=68) | | Stunting(n=93) | | Wasting(n=62) | |
| | No | % | No | % | No | % |
| Education status of mother | | | | | | |
| Illiterate | 38 | 55.88 | 46 | 49.46 | 31 | 50.00 |
| Up to primary | 19 | 27.94 | 31 | 33.33 | 26 | 41.94 |
| > Primary | 11 | 16.17 | 22 | 17.20 | 5 | 8.06 |
| Mother's employment | | | | | | |
| Home maker | 61 | 89.70 | 79 | 84.95 | 52 | 83.87 |
| Employed | 7 | 10.29 | 14 | 15.05 | 10 | 16.13 |
| Control over purchase of dietary item | | | | | | |
| Yes | 33 | 48.52 | 38 | 40.86 | 15 | 24.19 |
| No | 35 | 51.47 | 55 | 59.14 | 47 | 75.81 |

Table 5:

Sex wise patterns of morbidity of tribal children

| Pattern of disease | Male | | Female | | Total | |
|-------------------------|------|-------|--------|-------|-------|-------|
| | No. | % | No. | % | No. | % |
| Anemia | 4 | 3.57 | 4 | 5.26 | 8 | 4.26 |
| Asthma | 2 | 1.79 | 1 | 1.32 | 3 | 1.60 |
| Common cough | 9 | 8.04 | 5 | 6.58 | 14 | 7.45 |
| Unspecified fever | 14 | 12.50 | 5 | 6.58 | 19 | 10.11 |
| Flu | 3 | 2.68 | 10 | 13.16 | 13 | 6.91 |
| Unspecified jaundice | 9 | 8.04 | 3 | 3.95 | 12 | 6.38 |
| Malaria | 2 | 1.79 | 2 | 2.63 | 4 | 2.13 |
| Measles | 4 | 3.57 | 1 | 1.32 | 5 | 2.66 |
| Mumps | 1 | 0.89 | 3 | 3.95 | 4 | 2.13 |
| Pneumonia | 19 | 16.96 | 10 | 13.16 | 29 | 15.43 |
| Skin disease | 4 | 3.57 | 4 | 5.26 | 8 | 4.26 |
| Diarrhoea and Dysentery | 41 | 36.61 | 28 | 36.84 | 69 | 36.70 |
| Total | 112 | 100 | 76 | 100 | 188 | 100 |