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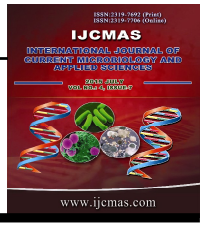

Original Research Article

Assessment of nutritional status among Santal-Munda tribal children in rural area of Amdanga block, North 24th Parganas District of West Bengal, India

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A B S T R A C T

Objective of the study is to analyse the nutritional status among Santal-Munda children residing at rural area of Amdanga block; North 24th Parganas district, West Bengal. This study involved a survey of 119 children (59 boys & 60 girls) aged 1 to 10 years. Anthropometric measurements of children were done using standard procedures. Demographic information were collected from the mother of the children by using structured interview schedule. Overall prevalence of underweight, stunting, and wasting was 38.65%, 21%, & 32.7%, respectively. About 8.40%, 4.20% and 9.20% of children were found to be severely underweight, stunted, and wasted. According to WHO classification of severity in malnutrition, the overall prevalence of underweight and wasting was very high. Nutritional status of studied tribal children were poor with high prevalence rate of under nutrition.

Introduction

India is a developing country. Since attaining independence in 1947, one of the greatest problems for India has been under nutrition among children. The country is still being confronted with this problem. As in other developing nations malnourishment is a burden on a considerable proportion of population, the most vulnerable being the youngest of the country (V.Rattan et al ,1997).It is well documented that 46% children under five in south Asia is moderately or severely underweight. Half of the world's malnourished children are to be found in only three countries- India, Bangladesh, & Pakistan (NFHS III,2009).According to UNICEF (2011):"In India, around 46% of all children below the age of three are too small for their age, 47% are underweight and at least 16% are wasted. Many of these children are severely malnourished.1 in 3 of the world's malnourished children lives in India"

A recent analysis by the maternal and child under-nutrition study group estimated that stunting, severe wasting and intrauterine

growth restriction together were responsible for 2.2 million deaths annually (Bisai et al, 2010) and most of these mortalities were found in under privileged communities. Tribal communities in India are considered as underprivileged.The total population of West Bengal at 2001 census has been 80,176,197 of this 4,406,794 persons are Scheduled Tribes (ST) constituting 5.5% of total population of the state .The state has registered 15.7% decadal growth of ST population in 1991-2001.There are total 38 notified STs in the state. The Santal represent more than half of the total ST population of the state (51.8%) and Munda (7.8%) (Kumar et al,2010).Several research studies on various tribal populations living in different parts of India have found them to be socially and economically disadvantaged (Mittal and Srivastava 2006).Also the study conducted by Bose and Chakraborty (2005,2006)suggests that there is an urgent need to evaluate the nutritional status of tribes in India. On this background, the present study was carried out to determine the nutritional status of Santal-Munda tribal children residing at rural area of West Bengal.

Materials and Methods

This cross sectional study was conducted among Santal-Munda tribal community from two randomly selected villages of Amdanga block of North 24th PGS district, which is located approximately 40.9km north from Kolkata, the provincial capital of West Bengal. Data on age, sex, height and weight were collected and recorded on a pretested questionnaire by house to house visit following interview and examination.

Children's age was recorded as reported by the mothers and verified further with other senior members of the households. Parents were informed about the objectives of the study and their consent was obtained. Altogether 119 children, 59 boys and 60 girls aged 1 to 10 years, were measured to evaluate the prevalence of under nutrition. Anthropometric measurements, i.e., height and weight of each subject, were taken according to the standard procedures (T. Lohman et al 1988).Weight and heights were measured using weighing scale and anthropometric rod to the nearest 0.1kg and 0.1cm, respectively. Age and sex specific mean height and weight of the Santal & Munda children were compared with WHO 2006 standards. Children were considered with underweight, stunting, wasting and thinness if their weight-for –age, Height-for-age and BMI-for-age Z scores below -2.0SD of WHO 2006 reference standards. While severe under nutrition was defined as Z-scores below -3.0 SD. In case of 5 to 10 years children different classification of WHO were used to assess their BMI for age. WHO criteria for assessing severity of malnutrition by percentage prevalence ranges of these three indicators were followed.

Results and Discussion

The nutritional status of Santal and Munda tribal children in North 24th PGS has not been investigated previously. Therefore this investigation is kind of preliminary record of data and information of anthropometric characters measuring nutritional status of tribal (Santal and Munda) children. The vast majorities of the adult population in the studied households are engaged in unskilled manual labour.

The majority were illiterate and does not much exposed to modernization though they are living just 17 km away from modern civilized busy city Barasat. Thus they belongs to lower socio-economic class.

Table.1 Nutritional Status of Santal-Munda children 1-10 years of age

Stages of Malnutrition	Total undernutrition(%, 95% Confidence limit)	Severe undernutrition(%, 95% Confidence limit)
Underweight (1-10 years) All (119)	38.65(29.9-47.41)	8.40(1.93-14.8)
Boys (59)	44.06(31.4-56.72)	3.39(0-8.01)
Girls (60)	33.33(21.41-45.25)	5.00 (0-10.51)
Stunting (1-10 years) All (119)	21.00(13.68-28.320)	4.20(0.6-7.8)
Boys(59)	16.94(7.37-26.51)	5.08(0-10.68)
Girls(60)	25.00(14.04-35.96)	11.66(3.54-19.78)
Wasting (1-5 years) All (49)	26.53(14.17-38.89)	10.20(1.8-18.7)
Boys(26)	30.77(13.03-48.51)	7.69(0-17.93)
Girls(23)	21.74(4.88-38.6)	13.04(0-26.80)
Thinness (5-10 years) All (70)	37.14(25.82-48.46)	8.57(2.07-15.07)
Boys(33)	42.42(33.82-51.02)	12.12(0.99-23.5)
Girls(37)	32.43(24.73-40.13)	5.41(0-12.7)

Table.2 Distribution of Present Study According to Classification of Assessment For Severity of Malnutrition By Percentage Prevalence Ranges (WHO 1995)

Different Terminology [Nutritional Indicators]		Prevalence Of Undernutrition
Underweight (1-10)	All (119)	Very High
	Boys (59)	Very High
	Girls (60)	Very High
Stunting (1-10)	All (119)	Medium
	Boys (59)	Low
	Girls (60)	Medium
Wasting (1-5)	All (49)	Very high
	Boys (26)	Very high
	Girls (23)	Very high

The age and sex specific means of weight and height were analyzed. The prevalence of under nutrition (underweight, stunting, and wasting) of these studied children is presented in table 1; In this study according to classification assessment for severity of malnutrition by percentage prevalence ranges (WHO 1995)(table 2) it has been observed that except stunting both underweight and wasting condition were at high prevalence level which also indicating

the poor nutritional status of tribal children (Santal and Munda)

The overall sample size of the both sexes including the age wise number of the subjects were not so remarkable. However, some results indicate clear trends of age sex variation and sexual dimorphism of nutritional status in boys and girls. A trend of increment of BMI with age in both boys and girls at least in some cases indicate growth trend. Age wise dimorphism is not so clear but age wise variation is significant in some occasions like according to Odds Ratio Under five children were significantly 2.65 [95% confidence limit 0.98 to 7.21] times more prone to be stunted/severely stunted than the 5-10 years children. Sexual dimorphism is not so clear but in terms of Odds Ratio, it is indicated truly in some occasions like for 1-10 year's children. The stunting wasting and underweight values indicate remarkable proportions of boys and girls (especially boys) are suffering from thinness and undernutrition. But in terms of chronic malnutrition girls are much more affected than boys. The situations of the under five girls have been observed to be even worse compared to the girls belongs to 5-10 years age group. According to Odds Ratio under five female were significantly 2.29 (95% Confidence limit 0.60-8.85) times more prone to be stunted than 5-10 years girls.

During childhood one cannot ignore the socio-economic status of a community. In general, tribal communities in India are neglected, discriminated in terms of income distribution and social status, which tend to have higher rates of undernutrition (Mitra M et al,2007).Therefore, tribal communities need much greater access to health care information, and opportunities and resources to improve their children's nutritional status. Thereby the children in the present study experienced instant nutritional stress. As found in the previous studies (Khongsdier R et al,2003).This study found that preschool children are more likely to suffer from undernutrition than school going children. Present study provided evidence that these children were under acute and chronic nutritional stress in the form of underweight, stunting, wasting, and thinness indicating the requirement for immediate appropriate public health nutritional intervention programs.

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