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Original Research Paper

Nutritional Status of Tribal Women: An Epidemiological Study Among Santal-Munda Tribes of North 24Th Parganas District of West Bengal, India

Home Science

KEYWORDS : Tribal women, BMI, Women, Nutritional Status

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ABSTRACT

Women constitute substantial population in any society and their statistics reflects the type of society and cultures they live in. Thus for studying the intake of a society analysis of women's position in terms of their status and role becomes significant. Tribal women in India are at a great disadvantage due to illiteracy and ignorance ; the picture is same at West Bengal also. Objective of the present study is to analyze the nutritional status among Santal-Munda tribal women residing at rural area of Amdanga block; North 24th Parganas district, West Bengal. In this study most of them are having normal BMI [76.27 %] but quite a few of them were found to be overweight [4.23 %] as well as under nutrition was also prevalent [19.49 %] among these tribal women with 6.8% severity. The present analysis indicate that the prevalence of undernutrition is still a major problem. In addition, there was also an emerging trend for overweight/obesity, thereby indicating a double burden of malnutrition as observed in other ethnic group of this developing country.

INTRODUCTION:

Nutrition has been a major health issue in India for centuries. Chronic hunger and under-nutrition is the worst tribulation of the poverty that still plagues millions of households in India. India, in recent past, has made a considerable progress in social and economic fronts but improvement in nutritional status especially of the women is found to be lagging behind [1].

Women constitute substantial population in any society and their statistics reflects the type of society and cultures they live in. Thus for studying the intake of a society analysis of women's position in terms of their status and role becomes significant. The wheel of development and fortune of the society depends upon the progress and development of women. She contributes a lot for the welfare of the society but unfortunately she is the most discriminated one. The discrimination against women starts right from her birth and continues till her last breath. Differences frequently emerge in consideration of health and nutritional status between the sexes. Throughout their life cycles female receive less food and also inferior quality of foods than do male [2; 3; 4].

The socio-economic and socio- cultural dimensions of the subject "women and nutrition" have two fold significance. Firstly the cultural norms and practices and socio-economic situation determine the extent to which women are able to contribute to the nutritional levels of their families and secondly those also determine their own nutritional status. According to the survey conducted by Indian Council of Social Science Research 48.53 percent respondents stated that women serve the family first and eat last. In poor families this results in greater malnutrition of women [5].

The tribal group forms an important and sizeable segment of the Indian population constituting 30 millions and they vary in terms of race, religion, culture, language, economic condition and dietary patterns. It is estimated that the tribal population constitute 8.6 percent of the total population of India. This population enlists under condition of severe socio-economic stress and hence more vulnerable to malnutrition and related health problems. Tribal women in India are at a great disadvantage due to illiteracy and ignorance [5].

Although adult nutritional status can be evaluated in many ways [6], the body mass index (BMI) is most widely used because its use is inexpensive, non-invasive and suitable for large scale surveys [7;8;9]. Data are scarce on the nutritional status of various tribal populations of India [10-14].It has been recently suggested that it is imperative to evaluate the nutritional status of the various unexplored tribes of India especially Eastern India which is relatively ignored [13;15-17].

According to census 2011, there are 11,60,069 tribal households in the state. Total tribal population in the state is 52,96,953 including 26,49,974 males and 26,46,979 females. Scheduled Tribes (STs) constituting 5.08% of the total population of the state. The state has registered 20.2% decadal growth of ST population in 2001-2011.There are total 38 notified STs in the state. Among them Santal represents more than half of the total ST population of the state (51.8%) and Munda represents only 7.8%.Their literacy status is very poor 42% [18] .In West Bengal, merely 8.4% of total literates among STs are having educational level above matriculation [18]. Nutrition is important because life is dependent on an adequate supply of proper nutrients, activity level, her mortality, life expectancy and future pregnancy and lactation performance. One of the major factors determining nutritional status of any community is the food consumption which is influenced by a wide range of factors like agro-climatic difference, food availability. Study on various tribal population show that the tribal are nutritionally deficient [19-23]. However, there is paucity of information regarding the women of tribal groups and hence the present study was undertaken to assess the socioeconomic and demographic background as well as to assess the nutritional status of rural Santal and Munda women from North 24th Parganas districts of West Bengal.

MATERIALS AND METHOD:

A total of 117 Tribal mother within reproductive age group have been investigated between March to October 2013 in two rural villages of North 24th Pgs district of West Bengal.

This cross sectional study was conducted among Santal-Munda Community, living in the villages of Amdanga block (Adhata and Masunda) which is located approximately 40.9km north from Kolkata, the provincial capital of West Bengal.

Information on age, sex, height and weight were collected on a pretested questionnaire following interview and examination.

Anthropometric measurements (i.e., height and weight) were performed in all subjects according to the standard procedures [6].The weight was measured by using digital

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scale to the nearest 0.1kg and height was measured using anthropometric rod to the nearest of 0.1 cm, respectively. BMI was computed using the following standard equation BMI=weight (kg)/ height (m2).Nutritional status such as thinness and overweight was evaluated following the published international BMI cut-Off points for Asian Tabel 1.

Table 1: The International Classification of adult underweight, overweight and obesity according to BMI

Classification	BMI(kg/m²)	
	Principal cut-off points	Additional cut-off points
Underweight	<18.50	<18.50
Severe thinness	<16.00	<16.00
Moderate thinness	16.00 - 16.99	16.00 - 16.99
Mild thinness	17.00 - 18.49	17.00 - 18.49
Normal range	18.50 - 24.99	18.50 - 22.99
		23.00 - 24.99
Overweight	≥25.00	≥25.00
Pre-obese	25.00 - 29.99	25.00 - 27.49
		27.50 - 29.99
Obese	≥30.00	≥30.00
Obese class I	30.00 - 34.99	30.00 - 32.49
		32.50 - 34.99
Obese class II	35.00 - 39.99	35.00 - 37.49
		37.50 - 39.99
Obese class III	≥40.00	≥40.00

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

The subjects were selected following purposive sampling method. The estimated sample size (n=81) was calculated by using standard formula found elsewhere [25] based on 64.5% prevalence of thinness among tribal women [15], with desired precision of ±10%.An additional 45% (81+36=117) women were added to make the sample more representative and compensate for the design effect. Hence total sample size was 117.

STATISTICAL ANALYSIS:

Statistical analysis of Chi-square test, Odds Ratio, Confidence Interval etc. was performed using SPSS software ; statistical significance was considered as p value less than 0.05.

RESULT AND DISCUSSION:

The vast majorities of the adult population in the studied households were engaged in unskilled manual labour. The majority was illiterate and does not much exposed to modernization though they are living just 17 km away from modern civilized busy city Barasat .Thus they belong to lower socio-economic class. Among our studied population; all were mother (having children >2 years of age); aged 27±4.7 years. Their mean height was 150.07±6.135 and weight was 46 ±7.708 kg. After assessing their BMI we observed that no women were Obese (≥30), 4.3% were Pre-obese; 19.49% were underweight (≤18.50) among them 6.8% were severely underweight (<16.00) and suffering from Chronic Energy Deficiency Grade-III.

In this target population 44.91% (95% of CI=35.94-53.88) women had home delivery during their child birth, and 80.50% (95% of CI=73.35-87.65) women's family had no latrine (minimum facility); 28.81% (95% of CI=20.64-36.98) mother had undernourished children.

In case of finding association between undernutrition and socio-demographic factors, the literacy rate, birth spacing, number of children in the family have shown some important association with nutritional status of targeted tribal mother.

It was also observed (Table-2) that undernourished mother had 1.20 times more chance to get undernourished children. Birth spacing between two children (<2years) is significantly associated with under nutrition, which indicates if the mother had <2 year spacing between her first and second child birth, then she will have 8.65 times more chance of being undernourished than the those who have >2 years gap between her two child birth.

In this target population 93.22% (95% of CI=88.68-97.76) were illiterate and among them chances of being undernourished is 2.047 times more than literate one; Maternal education had a significant influence on nutritional status. Several studies indicated that malnutrition is a serious health concerns that Indian women face [26].It threatens their survival as well as that of their children. The negative effects of malnutrition among women are compounded by heavy work demands, by poverty, by child bearing and rearing and by special nutritional needs of women, resulting in increased susceptibility to illness and consequently higher morbidity. A recent study indicated that the impact of Nutritional Status of mother is more pervasive than the impact of other factors on birth weight [26]. The dietary intake of rural pregnant women was lower than the recommended level. Surprisingly Over weight is also persisting among this tribal population and significant association were found with literacy rate, birth spacing ,though maximum subjects were moderate / heavy worker.

Under-nutrition/malnutrition remains to be an everlasting problem in Asian countries [27]. Studies worldwide [28] and from India [27,28,29,30,31,32,33] have utilized BMI to study nutritional status of the tribal population. Therefore, the use of BMI and WHO BMI-based cut-off points (Asian population) for the evaluation of under-nutrition are expropriate for use among the tribal populations of India. Several recent studies [34;35;36;37] have highlighted the nutritional status of the various tribes of Eastern India. But pragmatic information on the nutritional status (based on BMI) of the Santal-Munda tribe residing at north 24th Parganas is lacking. In view of this, the current study is an effort to present certain unique data on the nutritional status of the Santal-Munda women. In spite of all this though most of them are having normal BMI [76.27%] but quite a few of them were found to be overweight/obese [4.23%] as well as under nutrition was also prevalent [19.49%] among these tribal women with 6.8% severity. The overall nutritional status of studied Santal-Munda women was not satisfactory but undernutrition is less prevalent compared to other studies conducted among tribal population [17,27;35;36;37]. Tribal women were particularly vulnerable to undernutrition compared to their rural counterparts, but over nutrition is another new coming complication persisting among them now a days particularly in this tribal women population cohort.

CONCLUSION:

In conclusion, the present analyses indicated that the prevalence of undernutrition is still a major problem. In addition, there was also an emerging trend for overweight/obesity, thereby indicating a double burden of malnutrition as observed in other ethnic group of this developing country.

The study highlights the need for necessary steps for more community participation in various developmental programmes for removal of poverty and improve literacy rate among females.

This small study indicate that there may be other cause of overweight and obesity among these highly active ethnic group

which needs an in depth investigation with a larger population.

As it was a very small study it has its limitations. An appropriate step is urgently required for improvement of nutritional status of this marginalized scheduled tribe community. It may be recommended that more empirical and field based studies should be undertaken on the nutritional status of similar small and underprivileged tribal communities.

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Table-2: Association between different Socio- Demographic Factors and Persistence of Undernutrition/Overnutrition among selected Tribal mother (n=117):

Different Socio-Demographic Factors	% (95% of CI)	Association with Undernutrition(BMI ≤18.50)			Association with Over nutrition(BMI ≥25.00)		
		Chi-square test	p value	Odds ratio (95% of CI)	Chi-square test	p value	Odds ratio (95% of CI)
Literacy Rate	6.77 (11.3-2.24)	0.6585	0.4170	2.047 (0.3512-11.93)	10.12*	0.0014	14.33 (1.84-111.44)
Hospital Delivery	55.08 (46.11-64.05)	1.5126	0.2187	0.562 (0.2230-1.416)	0.0096	0.9219	1.096 (0.1745-6.88)
Number of Children ≥2	66.10 (57.56-74.64)	0.0172	0.895	1.066 (0.4070-2.795)	0.0942	0.7588	1.33 (0.211-8.413)
Number of Family member >3	72.03 (63.93-80.13)	3.0038	0.0830	0.3321 (0.0912-1.210)	0.1732	0.6772	1.47 (0.233-9.33)
Birth Spacing <2 years	14.40 (8.07-20.73)	13.02*	0.0003	8.65 (2.39-31.266)	7.055*	0.0078	15.41 (1.21-189.4)
Absence of Latrine (minimum facility)	80.50 (73.35-87.65)	0.5859	0.4440	0.600 (0.1605-2.243)	1.14	0.2856	2.66 (0.4142-17.169)
Persistence of undernutrition among their own child	28.81 (20.64-36.98)	0.1307	0.7177	1.203 (0.4410-3.282)	2.587	0.1077	4.12 (0.649-26.213)
Poor Socio-economic status	80.00 (72.78-87.22)	0.952	0.3292	0.5250 (0.1415-1.948)	3.684	0.0549	5.25 (0.819-33.62)

* Significant at p<0.05

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