

Nutritional Status of Tribal Women in Bihar

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Undernourished women tend to deliver low birth weight babies (Karmer, 1987) and to have pregnancy complications (Baird, 1947). Perinatal mortality and prematurity rates were found to be high among short statured women (Barros, 1987). It is known that both weight before and during pregnancy can have a direct bearing on the birth weight of the offspring (Simpson, 1975). It is known that both weight before and during pregnancy can have a direct bearing on the birth weight of the offspring (Simpson, 1975). Women among less privileged communities in India are malnourished (Samuel and Rao, 1992) and their dietary energy intake is not adequate to compensate their heavy physical work load (Chatterjee and Lambert, 1990). Women in developing countries were found to be short and thin. In these countries women were found to weigh below the 55 kg norm used by WHO. For instance data from several studies in Asian and African countries reported the average weight of nonpregnant nonlactating young women to be in the range of 40-50 kg (Kisanga, 1990). Several cut-offs have been used to screen mothers at risk of having pregnancy complication, most studies from India and other developing countries have used <145 cm for height and 38-40 kg for weight as cut-offs for screening high risk mothers (Krasovec, 1991). Although several studies on maternal nutritional status have been carried out in India among general population (Samuel and Rao, 1992, Tripathi et al., 1987) but there is a dearth of information pertaining to the nutritional status of mothers among tribal population. Similarly studies pertaining to knowledge on maternal nutrition is scarce both in general and tribal population. The present study was carried out to measure the extend of malnutrition among tribal women of Singhbhum district of Bihar state.

The present study was carried out in Singhbhum district of Bihar state. Bihar is one of the most backward states in the country and is located in the northern part of India. Within Bihar, Singhbhum is the most backward district.

It has a large population of tribals who are socially and economically backward. The common tribes found in this region are Santal, Birhor, Bhoomij and Mahalli. In this district, the Tat Steel Rural Development Society is carrying out a health and development programme since 1979 in 300 villages divided into several units. Seven villages were randomly selected from the Jamshedpur Unit. The respondents for this study were all nonpregnant women in the age group of 15-45, who had not accepted permanent family planning method. There were 552

households with approximately 2660 people in 7 villages. Out of these households, 222 mothers were eligible for this study. Height was measured with the help of an anthropometer rod to the nearest 0.1 cm. Weight was measured using a portable bathroom scale calibrated at regular intervals. Body Mass Index was calculated using the formula weight (kg)/height (mtrs). Knowledge and practice of tribal women on maternal nutrition was collected with the help of an interview schedule. Socio-economic and demographic data were also collected using the same schedule.

Complete data were available for 222 tribal women. Majority of them were Hindus (99.6%). Among the different tribes Santal (59.0%) was the largest group. They were followed by Bhoomij (25.2%) and Mahalli (11.7%). Birhor tribe was the smallest group (4.1%). Over 96.0% of the tribal women were illiterates engaged in agricultural manual work (97.3%). Table 1 shows the demographic characteristics of tribal women, in this population 36.0% experienced at least one abortion. The percentage of tribal women with four or more liking children was high (25.7%). Around 19.0% of the tribals had one or more child deaths. Nutritional status of tribal women is presented in Tables2-4. If <145 cm is taken as a cut-off point for short stature then 23.9% of the tribal women of this study can be termed as short statured (Table 2). Similarly if <38 kg is taken as a cut-off for pregnancy weight then 36.0% of the tribal women from this study could be termed as low weight. On the other hand if <45 kg is taken as a cut-off then 95.9% of them would be categorised as low weight (Table 3).

Table 1- Demographic Characteristics of Tribal Women

	No.	%
Abortions		
Nil	142	64.0
One	71	32.0
Two	8	3.6
Three	0	0
>=Four	1	0.4
Number of living children		
Nil	38	17.1

One	44	19.8
Two	51	23.0
Three	32	14.4
>=Four	57	25.7
Number of Child deaths		
Nil	179	80.6
One	40	18.0
Two	3	1.4

Table 2 – Distribution of Height of Tribal Women

Height of mother	Nos.	%
<145 cm.	53	23.9
145-150 cm.	99	44.6
>150 cm.	70	31.5
Total	222	100.0

Table 3 – Distribution of Weight of Tribal Women

Weight of mother	Nos.	%
<38 kg.	53	23.9
38-45 kg.	133	59.9
>45 kg.	9	4.1
Total	222	100.0

Table 4 shows the distribution of Body Mass Index (BMI) of tribal women. Using BMI <18.5 as the criteria for Chronic Energy Deficiency (CED) 71.2% of the

women were found to suffer from various degrees of CED as defined by James et al. (1988). Among them 9.5% were found to suffer from CED Grade III (<16.0, severe), 17.1% from CED Grade II (16-17 mild), and 44.6% from CED Grade I (17-18 moderate) from of malnutrition. Mean BMI was 17.9. Table 5 presents the data on the knowledge and some practices of women on maternal nutrition. The knowledge of tribal women on additional diet increasing birth weight was high with 68.0%. However, their knowledge on anaemia was comparatively low with 40.1%. With regards to iron and folic acid tablet consumption only 21.2% women stated that they had consumed the tablets in their previous pregnancy. Around 17.1% of the tribal women did not answer this question as they were either newly married or had not conceived. Data were also collected as to the practice of wearing slippers while going out. It was found that only 4.0% tribal women were wearing slippers regularly while 64.0% were wearing occasionally and 32.0% were not wearing at all.

Table 4 - Distribution of Body Mass Index of Tribal Women Based of Chronic Energy Deficiency Classification (CED.)

		Total No.	%
16.0	CED Grade III (Severe)	21	9.5
16.0-17.0	CED Grade II (Moderate)	38	17.1
17.0-18.5	CED Grade I (Mild)	99	44.6
18.5-20.0	Low weight Normal	46	20.7
20.0-25.0	Normal	18	8.1
25.0-30.0	Obese Grade I	0	0
>30	Obese Grade II	0	0
Total 222 100. (X = 17.9)			

Table 5 - Knowledge and Some Practices of Tribal Women on Maternal Nutrition

	No.	%
Additional diet during pregnancy increases birth weight		

Agree	151	68.0
Disagree	32	14.4
Don't know	39	17.6
Knowledge on anaemia		
Yes	89	40.1
No	133	59.9
Consumption of iron and folic acid tablets in previous pregnancy		
Yes	47	21.2
No	137	61.7
Not applicable	38	17.1
Habit of wearing slippers		
Regularly	9	4.0
Occasionally	142	64.0
Never	71	32.0

The findings of this study reveal that the tribal women of Singhbhum district were highly undernourished. The present study reported 23.9% tribal women as having height <145 cm and 95.9% having weight <45 kg. If <38 kg is taken as cut-off for weight then 36.0% of these women can be termed as low weight. This is quite high when compared to studies reported from other parts of India. In their study in rural Tamil Nadu, Samuel and Rao (1992) had found 14.1% as having height <145 cm and 37.3% as having weight <40 kg. Similarly Anderson (1989) reported 56.0% of women in Gujarat and 63.05 of women in Maharashtra as having weight <40 kg. In another study from Uttar Pradesh 54.6% mothers were found to have weight <40 kg and 31.3% mothers were found to have height <145 cm (Tripathi et al., 1987). The percentage of malnutrition among tribal women of the present study is high when compared to developed countries. Only 1% of U.S. women were found to have weight less than 40 kg. (Krasovec, 1991). Abortion and child death rates were also found to be high among the tribal population studied. Poor maternal nutritional status could be one of reasons for this high rate. However, it was not possible to identify whether poor maternal nutritional status was contributing to high abortion rates as our sample size was

small. Knowledge of tribal women reported as having not consumed iron and folic acid tablets during their previous pregnancy. This was the case with the rest of the country where low consumption of iron and folic acid tablets was reported by a multi centric study (ICMR, 1989). Tribal women in this study did not have the habit of wearing slippers when they go out. This may increase the chances of getting bookworm infestation thereby causing anaemia.

Thus majority of the tribal women in Bihar are at risk of delivering low birth weight babies and have pregnancy complications. Some of the reasons for under nutrition among tribal women could be poor diet intake, ignorance, early marriage, and high morbidity due to unhygienic practices and surroundings. Undernutrition of mothers may be carried over to their children. Hence there is a need to provide special attention to this group in improving their nutritional status by intervening appropriate health and nutrition programmes like nutrition education, iron supplementation and deworming both during adolescence and during adulthood.

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