

Nutrition Profile of the Tribal (Bhoksa) Women in Bijnor District, Uttar Pradesh

Anmol Lamba¹, Veena Garg²

¹Research Scholar, ²Dean, Faculty of Science

Department of Food and Nutrition, Bhagat Phool Singh Institute of Higher Learning, BPSMV, Sonapat, Haryana
Corresponding Author: anmollamba23[at]gmail.com

Abstract: Tribes are considered as socio-economically disadvantaged community. Tribals have their distinct customs, traditions and dietary pattern. In the present study an attempt was made to understand the socio-demographic profile of the women of Bhoksa tribe and to assess their nutritional status. The sample comprised of 120 scheduled tribal women from Bijnor district of Uttar Pradesh. A pre-designed questionnaire was used to collect socio-demographic information. Nutritional status of respondents was assessed by Anthropometric measurements. Data on weight and height was collected using standardized techniques. To calculate nutrient intake, twenty-four hour dietary recall method was adopted and was compared with the RDA given by ICMR. The findings of the study revealed poor nutritional status of tribal women as 64.17% respondents were underweight having BMI less than 18.5 and their nutrient intake was also insufficient showing high percentage deficit in calories, proteins, fat, iron and calcium intake.

Keywords: Dietary pattern, Tribal women, Nutritional status, RDA, ICMR.

1. Introduction

India is a diversified country with a blend of people living in urban, rural and tribal areas. The Tribal Population in India is 8.6 percent according to 2011 census.^[1] Uttar Pradesh is the most populous state of the country but has a small tribal population. The Scheduled Tribe (ST) population of Uttar Pradesh is 107,963 at 2001 census, constituting a meager 0.1 per cent of the total population (166,197,921) of the State. The State has a total of five major Scheduled Tribes – Tharu, Bhoksa (Buksa), Bhotia, Jaunsari and Raji. Out of the major five scheduled tribes, Bhoksa is the second major tribe, having a number of 4,367 followed by Bhotia, Jaunsari and Raji. Bhoksa are primarily concentrated in Bijnor followed by Pilibhit and Farrukhabad districts. Bhoksa tribe has been recognized as primitive tribe.^[2]

Tribes constituted separate socio-cultural groups having distinct customs, traditions, marriage, kinship, property inheritance system and living largely in agricultural and pre-agricultural level of technology. Their dependency on nature and impoverished economy may affect the nutritional status as compared to their counterparts in the general population.^[3]

The world is now bearing dual burden of both over nutrition and under nutrition. This can be called as Nutrition transition phase, which means that overweight and obesity predominate as diet related health problems in industrialized countries and under nutrition among large segments of world's population especially vulnerable sections such as tribal communities.^[4]

Nutritional status of the population largely depends on the consumption of food in relation to their needs, which in turn is influenced by the availability of food and purchasing power. The socio-economic conditions like agricultural pattern and occupation profile are different among different tribes and are determined by the eco-system they live in.^[5] Several studies have shown a close

relationship between the tribal eco-system and their nutritional status. The tribal populations are 'at risk' of under nutrition because of household food and nutrition insecurity.^[6] National Family Health Survey-3 (2005-06) brought out data on health & nutritional indicators and provides a clear picture of the status of tribal women. According to NFHS-3, 46.6% of tribal women had Body Mass Index (BMI) below 18.5, indicating chronic energy deficiency.^[7]

2. Methodology

Selection of Sample: It was a cross sectional and community based study, carried out by adopting stratified random sampling procedure. The study was conducted in Bijnor district of Uttar Pradesh among Bhoksa community on a sample size of 120 tribal women.

Tools and Techniques: The collection of data was done mainly by following methods:-

I. Interview method: A pre-tested and pre-designed performa was used to collect the socio-demographic information such as age, educational qualification, economic status, marital status and occupation. Personal interview was made to collect personal information.

II. Anthropometrical Measurements: The different anthropometric measurements were taken as height and weight. The weight was recorded to the nearest 0.1 kg with the help of portable weighing machine. The measurement of height was done with the help of anthropometric rode. Anthropometric particulars of subjects i.e. height and weight were further used to calculate BMI using the formula:

$$\text{BMI (kg/m}^2\text{)} = \text{weight (kg)/height}^2\text{(m}^2\text{)}.$$

According to the WHO classification of BMI, study subjects were categorized as Underweight (<18.5), Normal

weight (18.5- 24.9), Over weight (25-29.9), Obese grade I (30-34.9), Obese grade II (35-39.9) and Obese grade III (>40).

III. Diet Survey: Twenty four hour dietary recall was taken with the help of a format in which the meal and meal timings were mention to assess nutrient intake of the respondents.

IV. Statistical analysis: Using SPSS windows version 19.0, statistical analysis such as arithmetic mean, standard deviation, frequency and percent was carried out.

3. Results

Table 1: Socio demographic profile of respondents

Characteristics	Number of respondents	Percentage of respondents
Age (in years)		
18-25	30	25
25-30	41	34.2
30 and above	49	40.8
Education		
Illiterate	16	13.3
Upto Primary Level	41	34.2
Upto Secondary Level	37	30.8
Above Secondary Level	26	21.7
Occupation		
Housewife	88	73.3
Working	32	26.7
Marital Status		
Married	95	79.2
Unmarried	25	20.8
Total Income of Family (rupees/month)		
Upto 10,000	33	27.5
10,000- 15,000	56	46.7
>15,000	31	25.8

Table 1 reveals that all the subjects were in the reproductive age. Among them 25 percent were between 18-25 years, 34.2 percent within 25-30 years and 40.8 percent were of 30 and above years of age. About 13.3 percent of the respondents were illiterate, 34.2 percent were observed to study up to the primary level, 30.8 percent were up to secondary level and 21.7 percent respondents were educated above secondary level. 73.3 percent of women were housewife and remaining 26.7 percent were engaged in work. In terms of marital status about 79.2 percent subjects were married and 20.8 percent were unmarried. In terms of family income about 27.5 percent of respondents have income up to rupees 10,000 per month, 46.7 percent belonged to income group of rupees 10000-15000 per month and 25.8 percent of respondents were having income above rupees 15,000 per month.

Table 2: Body Mass Index (BMI) of Tribal Women

Grade	BMI	Number of Respondents	% of Respondents
Under weight	< 18.5	77	64.17
Normal weight	18.6 - 24.9	36	30.00
Overweight	25 – 29.9	07	5.83
Obese grade I	30 – 34.9	-	-
Obese grade II	35 – 39.9	-	-
Obese grade III	> 40	-	-

Table 2 indicates that 64.17 percent respondents were underweight (<18.5 BMI), 30 percent were belonging to normal weight having BMI between 18.6-24.9 and 5.83 percent were overweight (BMI 25-29.9). None of the respondents were in obese I, obese II and obese III category.

Table 3: Dietary Intake by 24 Hour Food Recall Method

Nutrients	Mean Intake	RDA	% of Deficiency
Calories (kcal)	1638 ± 242.45	2230	26.55
Protein (gm)	42.4 ± 6.81	55	22.91
Fat (gm)	17.9 ± 3.46	25	28.40
Iron (mg)	13.8 ± 2.76	21	34.29
Calcium (mg)	335 ± 176.43	600	44.17

Table 3 reveals the nutrient intake of respondents, 1638 ± 242.45 kcal was found to be mean calorie intake, 42.4 ± 6.81 gm as mean protein intake, 17.9 ± 3.46 gm as mean fat intake, 13.8 ± 2.76 mg as mean iron intake and 335 ± 176.43 mg as mean calcium intake which shows high percentage deficit in calories, proteins, fat, iron and calcium intake as compared to RDA.

4. Discussion

Tribes are relatively more vulnerable to food insecurity compared to their urban as well as rural counterparts. The present study revealed that the majority of tribal women (64.17%) were underweight which was almost similar as the result (64.5%) reported by Bose and Chakraborty (2005) among the Bathudis, a tribal population of Keonjhar District, Orissa.^[8] A study conducted by Hamid and Vaida (2017) reported a high prevalence of undernutrition (90.7%) among the scheduled tribe (Gujjar and Bakerwal) women of Kashmir.^[9]

The present study also reported that the nutrient intake of respondents was very low as compared to recommended levels. It shows that the respondents are gross deficit in the nutrient intake as 26.55% caloric deficit, 22.91% protein deficit, 28.4% fat deficit, 34.29% iron deficit and 44.17% calcium deficit in comparison to RDA given by ICMR. However other studies also reported that tribal community is deficient in adequate food intake as low nutrient intake was reported by Wani and Jan (2016) among adult Gujjar women of Kashmir.^[10] Maiti et al. (2005) also reported insufficient nutrient intake among tribal women of Jharkhand.^[11] Similar observations was also reported by

Chakma T. et al. (2014) among the Baiga tribe of Baihar, district Balaghat, Madhya Pradesh.^[12]

5. Conclusion

The findings of the study revealed the poor nutritional status of Tribal women as majority of respondents were undernourished and had insufficient nutrient intake. About 64.17% respondents were underweight having BMI less than 18.5 and their nutrient intake was also insufficient showing high percentage deficit in calories, proteins, fat, iron and calcium intake. The major reasons for undernutrition and insufficient nutrient intake among the tribal community may be food scarcity, imbalanced diet, poor purchasing power which is primarily due to low economic status, monotonous food habits and ignorance about locally available food.

References

- [1] Primary Census Abstract for Total population. Scheduled Castes and Scheduled Tribes, 2011 Office of the Registrar General and Census Commissioner. India. [http://www.censusindia.gov.in/2011-Documents/SC ST%20 Presentation% 2028-10-2013 ppt.](http://www.censusindia.gov.in/2011-Documents/SC%20ST%20Presentation%2028-10-2013.ppt)
- [2] Primary Census Abstract for Individual Scheduled Tribes-2001.
- [3] Sukhdas et al., (2014) Nutritional Status of Tribal Children in Andhra Pradesh. *Int J Med Health Sci.*, 3(1): 76-79.
- [4] Nayak MSDP, Sreegiri S. A study on nutritional status of tribal women in Visakhapatnam district, Andhra Pradesh, India. *Int J Community Med Public Health* 2016; 3:2049-53.
- [5] Hanumantha Rao, D., Brahman, G.N.V., Mallikharjuna Rao, K., Gal Reddy, Ch. And Pralhad Rao, N.: Nutrition Profile of certain Indian Tribes. Proceedings of the National Seminar on Tribal Development: Options held during May 22-24. Prasanna K. Samal (Ed.). Gyanodaya Prakasham, Nainital (1996). <http://www.khamman.com>, ITDA at glance.
- [6] A. Laxmaiah, K. Mallikharjuna Rao, R. Hari Kumar et al., (2007) Diet and Nutritional Status of tribal population in ITDA Project areas of Khammam District, Andhra Pradesh. *J. Hum. Ecol.*, 21(2): 79-86.
- [7] Ministry of Women and Child Development. Scheduled Tribe Women and Children: Issues and Challenges for development. New Delhi; Ministry of Women and Child Development. 2011. Available at: [http://www.pib.nic.in/newsite/erelease.aspx? relid=72382.](http://www.pib.nic.in/newsite/erelease.aspx?relid=72382)
- [8] Bose K, Chakraborty F. Anthropometric characteristics and nutritional status based on body mass index of adult Bathudis: a tribal population of Keonjhar District, Orissa. India, *Asia Pac J Clin Nutr.* 2005; 14(1): 80-82.
- [9] Hamid T. And Vaida N. A study on nutritional status of scheduled tribe (Gujjar and Bakerwal) women of Kashmir. *International Journal of Home Science* 2017; 3(3):203-205.
- [10] Wani M. and Jan S. A study on nutritional and health status of adult Gujjar women of Bandipora district of Kashmir. *International Journal of Home Science* 2016; 2(3): 332-335.
- [11] Maiti S., Unisa S. and Agrawal PK. Health Care and Health among Tribal Women in Jharkhand: A Situational Analysis. *Studies of Tribes and Tribals* 2005; 3(1): 37-46.
- [12] Chakma T, Meshram P, Kavishwar A, Vinay Rao P, Rakesh Babu (2014) Nutritional Status of Baiga Tribe of Baihar, District Balaghat, Madhya Pradesh. *J Nutr Food Sci* 4: 275. doi: 10.4172/2155-9600.1000275