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RESEARCH ARTICLE

NUTRITIONAL STATUS AND KNOWLEDGE, LIFE STYLE AND DIETARY PRACTICES OF TRIBAL ADULT WOMEN

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ABSTRACT

Background: Study objective was to assess the nutritional status and evaluating the nutritional knowledge of the selected tribal adult women.

Methodology: Study was conducted in Sholayur Village of Attappady, Palakkad District. Sample of 100 tribal adult women belonging to the age group of 19 to 34 years were selected for the collection of data regarding socio economic status, monthly expenditure, food habits, life style pattern and nutritional knowledge was assessed before and after education. A 24 hour dietary recall method was used to assess the dietary intake of the subjects. Anthropometric measurements like height, weight, hip circumference and waist circumference were measured. Body mass index was calculated for the selected subjects.

Results: Mean height and weight were compared with standard values and found that height was below the standard values of NCHS (2010) and weight was normal. BMI of the subjects found that, 55 per cent of the subjects had normal BMI and Eight per cent of the subjects had BMI of < 16 and it categorized as severe malnutrition. Nine per cent of the subjects had BMI in the range of 16-16.99 and it was categorized as moderate malnutrition. Waist hip ratio showed that 44 per cent of the selected subjects had the low risk of obesity and 24 per cent of the subjects had high risk of obesity. Cereals and pulses were consumed daily and green leafy vegetables consumed regularly. Consumption of fruits and milk were poor. Food intake was less than the ICMR suggested RDA except green leafy vegetables and nutrient intake was found to be inadequate except vitamin C. Nutritional knowledge was assessed and it was statistically significant at one per cent level.

Conclusion: Nutritional status and knowledge of the tribal adult women was unsatisfactory and they need in-depth nutrition education and intervention programmes for their holistic development.

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INTRODUCTION

Tribal people are the most conservative, orthodox and superstitious, which impede their growth and development in all walks of life. Most of the tribes are poor, backward and generally lead a hard and miserable life. Due to the part of developmental efforts, tribals are forced to rehabilitate in a totally new settlement (Rajihari, 2008). According to 2011 census, the tribes in India account for 8.2 percent of the total population. The tribal diets are different from the entire population as they include certain uncommon foods different cooking manner (Mittal, 2006). Their lifestyles and food habits are different from that of their rural neighbors. They depend on minor forest produce and manual labour for livelihood and not having adequate income. Their food consumption pattern is dependent on the vagaries of nature and varies from extreme deprivation in the lean seasons and high intakes in the post-harvest period (Krishna, 2010). Tribal women's

health status varies widely both within and among countries because of such factors as local disease prevalence, health-related behaviors and women's educational attainment, exposure to health information, influence on decision making and access to health care. Highest levels of malnutrition among women are found by several studies. Nutritional anemia was a major problem for women in India and it's more observed in the tribal belt. Women who had better knowledge of nutrition also exhibited better dietary behavior, thus underlying the importance of nutrition education for improving dietary behavior. With these backdrops, it was felt that important to study the nutritional status and dietary practices of the selected tribal adult women and to assess their nutritional knowledge.

MATERIALS AND METHODS

The area chosen for the conduct of the present study was Palakkad District, Kerala. Sholayur Village of Attappady

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situated on the North Eastern side of Palakkad District. Attappady is one of the largest tribal settlements in the state of Kerala. The selected sample comprised of tribal adult women belonging to the age group of 19 to 34 years. A total of 100 tribal adult women were selected for the collection of data regarding socio economic status, monthly expenditure, food habits, life style pattern, nutritional knowledge about foods included and avoided in health and diseased conditions.

24 hour dietary recall method was used to assess the dietary intake of the subjects. Based on this, the mean food intake and the mean nutrient intake of the selected individuals were calculated using the table values and the nutrient adequacy was computed by comparing the nutrient intake with the Recommended Dietary Allowances for Indians. The nutritional status of the subjects was assessed by using parameters like anthropometric measurements such as height, weight, Body Mass Index (BMI) and Waist to Hip Ratio (WHR). All the subjects were examined for clinical deficiency signs.

Thirty subjects were selected for nutrition education intervention for 60 days. For the assessment of nutritional knowledge of the tribal adult women, a questionnaire consisting of 20 objective type questions was formulated. For each correct answer, one mark was allotted and for wrong answer, zero mark was given. On the basis of wide variations in the scores obtained by the subjects, nutritional knowledge was divided into three categories viz. low scores (0-5), medium scores (6-12) and high scores (13-20).

RESULTS AND DISCUSSION

Socio economic profile

Socio economic profile of the selected subjects presented in Table I. Nuclear family was more prevalent among the families (76 per cent) of selected tribal adult women and having different family size.

Table I Socio economic profile of the selected subjects

Characteristics	Number (N=100)	Characteristics	Number (N=100)
Type of family	76		
Nuclear	24	Types of house	36
Joint		Terrace	14
Family size	76	Thatched	50
1-4	20	Tiled	
5-6	4	Electricity facility	29
6-8		No	71
Educational level	8	Paid	
Illiterate	18	Sanitary arrangements	
Primary	28	Toilet inside the house	26
High school	40	Community toilet	-
Higher secondary	2	Defecation in open field	74
Diploma	4	primary health center	
Graduate		Within the settlements	12
Occupational status		Nearly village	38
Agriculture	31	Far away from the settlements	50
Government	2		
Coolie	40		
Unemployed	27		

Majority of the families (76 per cent) had one to four members. Twenty per cent of the families had five to six members. It was noted that only four per cent of the families had six to eight members. The literacy rate in the selected subjects was found to be 92 per cent and the illiterates was only eight per cent, this rate was low compared to NNMB data surveyed in 2012. "Daily wages" was the main occupation in these areas and nearly 40 per cent of the adult women were coolie workers of agriculture, private sectors and business corporate. The percentage of thatched house (14 per cent) was less compared to terrace (36 per cent) and tiled house (50 per cent). Majority of the families belonged to low income group.

The data of the present study showed that 100 per cent of the selected subjects availed water facilities in their area. Electricity was also available in this area and only. In the studied area, 100 per cent of the subjects and their family members benefited the primary health center and they received suitable medicines from the hospitals for their diseased conditions. Location of the PHC was observed and it was found that 50 per cent of the selected subjects reported that it was far away from their residential area and 38 per cent were reported that it was nearer to their settlement. Twelve per cent of the women reported that it was within their settlements.

Life style pattern

Table II depicts the regular activities of the tribal adult women.

Table II Regular physical activities of the selected subjects

Activities	Number (N=100)	Percent
Type of work		
Heavy	41	41
Moderate	38	38
Sedentary	21	21
Regular physical exercise		
Yes	0	0
No	100	100
Mode of travel		
Walking	68	68
By bus	32	32
Have the habit of		
Chewing tobacco	11	10
Beetle leaves/nuts	100	90
Sleeping hours		
6	24	24
6-8	76	76
> 8	-	-

Forty one per cent of the subjects were found to be heavy worker. They are engaged to coolie work and rest of them was engaged sedentary or moderate activities. None of the selected subjects adopted physical activities and were not aware of health benefits of physical exercise. Mode of travel observed in the selected tribal women were found that 68 per cent of the selected subjects were preferred walking to reach one or other place. None of them possessed any kind of their own vehicles. Habit of chewing beetle leaves was observed among cent per cent of the tribal adult women. Eleven per cent had the habit of chewing tobacco. Seventy per cent of the tribal adult women had a good sleep of 6-8 hours daily. Twenty four per cent of them slept for less than 6 hours and none of there was in the bed, beyond eight hours daily.

Anthropometric measurements

The present study showed that mean heights were compared with standard height and found that was below the standard values of height of NCHS (2010). Mean weight was compared with standard weight of NCHS and found the results were normal.

The Body mass index and waist hip ratio of the selected subjects are presented in Table III. Body mass index of the selected tribal adult women were computed and found that, 55 per cent of the subjects had normal BMI and Eight per cent of the subjects had BMI of < 16 and it categorized as severe malnutrition. Nine per cent of the subjects had BMI in the range of 16-16.99 and it was categorized as moderate malnutrition. Twenty two per cent of the subjects had the BMI of mild malnutrition. Only three per cent of the subjects were in the category of overweight and obese. This reflects the availability of quality and quantity energy and other macro and micro nutrients and their physical activities.

Waist hip ratio showed that 44 per cent of the selected subjects had the low risk of obesity and 32 per cent had moderate risk of obesity and 24 per cent of the subjects had high risk of obesity.

Table III BMI and Waist hip ratio of the selected subjects

BMI (kg/ m ²)	Classification	Percent
<16	Severe malnutrition	8
16-16.99	Moderate malnutrition	9
17-18.49	Mild malnutrition	22
18.5-24.9	Normal	55
25-29.9	Overweight	3
30 and above	Obese	3
Waist hip ratio	Health risk	Percent
< 0.80	Low risk	44
0.81-0.85	Moderate risk	32
> 0.85	High risk	24

Dietary survey

Food and nutrient intake

Cereals and pulses were consumed by all the tribal adult women daily. Green leafy vegetables were consumed in alternate days. Regular intake of milk and milk products was only by 21 per cent and Meat, poultry and fish were consumed monthly twice due to their poor economic status. Food intake of the selected subjects was observed (Table IV). It was found that the consumption of cereal was up to the level of Recommended Dietary Allowances (RDA) of ICMR (2010). Except green leafy vegetables, the intake of all other food items was less than the ICMR suggested RDA.

Table IV Mean food intake of the selected subjects

Food groups	ICMR-RDA (2010)	Actual intake	% Excess or Deficit
Cereals	330	400	+21.2
Pulses	75	70	-6.6
GLV	100	115	+15
Other vegetables	200	190	-5
Roots and tubers	200	190.5	+4.75
Milk and milk products	300	165	-45
Fruits	100	70	-30
Sugar and jiggery	30	14	-46.6
Fats and oils	2	20	-20

Nutrient intake of the selected tribal adult women (Table V) in the present study was found to be inadequate when compared with RDA of ICMR (2010) except vitamin C.

Table V Mean nutrient intake of the selected subjects

Nutrients	ICMR-RDA (2010)	Actual intake	% Excess or Deficit
Energy (kcal)	2230	1652	-25.9
Protein (g)	55	45	-18.18
Fat (g)	25	19	-24
Calcium (mg)	600	536	-10.6
Iron (mg)	21	17.2	-3.8
Carotene (µg)	4800	3985	-18
Thiamine (mg)	1.1	0.9	-18.18
Riboflavin (mg)	1.3	1.1	-15.3
Niacin (mg)	14	11	-21.4
Vitamin C (mg)	40	49	+22.5

Clinical examination

The results of the study revealed that prevalence of spongy and bleeding gums was commonly noticed and it might be due to vitamin C deficient in their diet. Angular stomatitis was also commonly prevalent among four per cent and it might be due to deficient intake of B complex vitamins. The prevalence of dental caries was 16 per cent among the selected subjects.

Assessment of nutritional knowledge

Nutritional knowledge was assessed before and after nutrition education using the specially designed questionnaires. Before imparting education 50 per cent, 43 per cent, 7per cent of the selected subjects secured the scores in the level of low, medium and high respectively. After nutrition education the percentage scores secured by the selected subjects revealed that the improvement was statistically significant at one per cent level (Table VI).

Table VI Nutritional knowledge of the selected subjects

Score	Before		After		' t ' value
	Number	Percent	Number	Percent	
Low (0-5)	15	50	5	17	2.919*
Medium (6-12)	13	43	18	60	
High (13-20)	2	7	7	23	

CONCLUSION

The salient findings of the study revealed that the socioeconomic and nutritional status of the selected tribal adult women were not satisfactory up to the standard of living. Nutritional knowledge of the tribal adult women was unsatisfactory and they need in-depth nutrition education and intervention programmes for their holistic development.

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