

## An Assessment of Nutritional Status among Jenukuruba Tribe of Kodagu District

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### Abstract

The present study was undertaken to evaluate the Skinfold Thickness, Height for age, Weight for age, BMI and MUAC of Jenukuruba tribal people representing two taluks of Kodagu district, Karnataka State. In Karnataka Jenukuruba tribes are identified as PVTG. The data or information was recorded through interview schedule and a survey was conducted. Total 645 subjects studied from 252 household of the six hamlets of Kodagu District. The study reveals that the 23.9% of the Jenukuruba tribal peoples are suffering from Grade-III type of malnutrition.

**Keywords:** Jenukuruba; PVTG (Particular Vulnerable Tribal Groups); Skinfold Thickness; MUAC; Nutritional Status; Kodagu

### Introduction

The tribal population in India as per the 2011 census is 8.6% of the total population with 89.9% of them living in rural areas and 10.0% in urban areas. In Karnataka, 4.07% of the total ST populations with 19.27% of them residing at urban areas and remaining 80.72% of the peoples are found in rural areas. Good nutrition is a basic component of health. A healthy people leads nation in better way. Most of the tribal people of India have their own geographically isolated life style. Inadequate food habits along with traditional socio-cultural and biological activities may lead to a high proportion of child under nutrition [1,2]. Good nutrition of the people is an essential component of healthy life. The Indian tribal people are economically deprived.

Tribal peoples are acknowledged to have very close relationship with the ecosystem and the environment because of their fulfillment of daily nutritional requirements with food foraged from nature. Inadequacies in nutritional intake or under-nutrition can be considered a major source of many adverse effects on the growth and health of individuals [3].

Anthropometry is a key component of nutritional status assessment in children and adults. MUAC is the circumference of the left upper arm, measured at the mid-point between the tip of the shoulder and the tip of the elbow (Olecranon process and the Acromium).

### Material and Method

For the present study a total of 252 households comprising of 651 subjects which 310 male, 341 female were selected during the study. Fieldwork was conducted during the month of May to August. The Data were collected from different hamlets of Jenukuruba tribe of Kodagu District. Anthropometric measurements were taken using standard procedure. The anthropometric measurements (Height, Weight, Mid Upper Arm Circumference and Skinfold Thickness at Triceps) of Jenukuruba tribal people were recorded using techniques given [4]. The height was measured with the help of Anthropometric

rod, weight was measured with the help of weighing machine and it was measured to the nearest 0.1 kilogram., MUAC was measured with the help of tape to the nearest 0.1 cm. and skin fold thickness was measured to the nearest 0.1 millimeter with the help of skin fold caliper.

BMI was computed using the following standard equation:

$BMI = \text{weight (in Kg)} / (\text{height})^2$  (in meters). Nutritional status was evaluated using internationally accepted BMI guidelines (WHO 1990: 854). The following cut-off points were used: CED BMI <18.5 Kg/M<sup>2</sup>, normal: BMI=18.5-24.9 Kg/M<sup>2</sup>, overweight: BMI ≥ 25.0 Kg/M<sup>2</sup>.

The data was analyzed with the use of Statistical Package for Social Science 22.0 Version software.

### Jenukuruba tribe

In Karnataka Jenukuruba tribal peoples are identified as Particular Vulnerable Tribal Groups (PVTG), who has low level of literacy rate, pre-agricultural level of technology and population declining. The prefix Jenu means "honey", Kuruba indicates their caste name. The Kuruba is the name of the large shepherd community of Karnataka Plateau [5]. Their traditional occupation is collection of honey nowadays majority of them working as wage laborers. Physically Jenu Kuruba are short statured with mesocephalic head shape and broad facial and nasal profile [6] and show affinity to Kurumba of Nilgiri and Betta Kuruba to some extent. They are mainly distributed in Chamarajnar, Mysore and Kodagu districts of the state. Jenu Kuruba speaks Jenu nudi a dialect of Kannada, but while communicating with others they speak Kannada language. Ragi is their staple food. They consume rice, sambar and soppu (vegetables).

### Results and Discussion

A total of six hundred and fifty one individuals height, weight, MUAC and skinfold thickness at triceps were recorded with the help of anthropometric instruments. A total 651 individuals comprising 47.6% males and 52.3% were females (Table 1 and Figure 1).

Taluk	Hamlets	Male	Percent (%)	Female	Percent (%)	Total
Somavarpet	Heruru	108	46.5	124	53.4	232
	Kabbinaagadde	57	45.9	67	54.0	124
	Mavinahalla	33	58.9	23	41.0	56
Virajpet	Gadde hadi	66	47.4	73	52.5	139
	Gonigadde hadi	34	44.7	42	55.2	76
	Siddapura hadi	12	50	12	50	24
Total		310	47.6	341	52.3	651

Table 1: Hamlet wise and gender wise distribution of the sample.

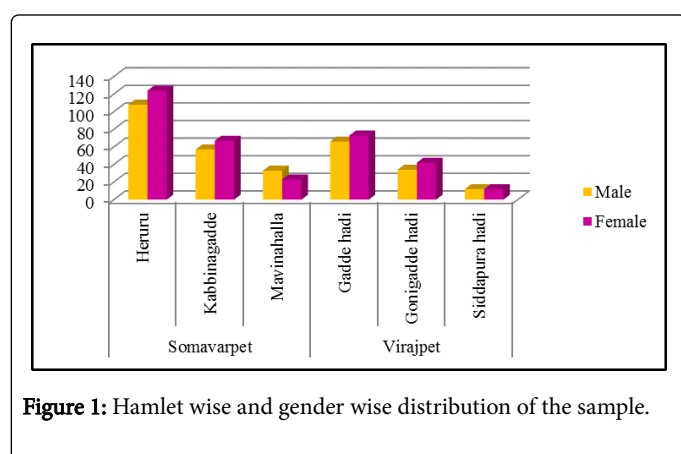


Figure 1: Hamlet wise and gender wise distribution of the sample.

Table 2 and Figure 2 shows that total 651 samples 23.9% of tribal peoples were suffering from Grade-III (<16.0) type of malnutrition, followed by Grade-II (16.0-17.0) (63.1%) and 11.2% of the peoples were suffering from chronic energy deficiency-I (17.0-18.5). Only 1.5% of the tribal peoples were normal (18.5-24.9). In accordance to present findings, a very high frequency of CED-III (48.7% among Males and 51.2% of Females).

BMI Grades	Male	Percent (%)	Female	Percent (%)	Total	Percent (%)
CED III (<16.0)	76	48.7	80	51.2	156	23.9
CED II (16.0-17.0)	196	47.6	215	52.3	411	63.1
CED I (17.0-18.5)	38	52.0	35	47.9	73	11.2
Normal (18.5-24.9)	00	00	10	100	10	1.5
Over weight (>25.0)	00	00	01	100	01	0.15
<b>Total</b>	<b>310</b>	<b>47.6</b>	<b>341</b>	<b>52.3</b>	<b>651</b>	<b>100</b>

Table 2: Distribution of BMI according to gender.

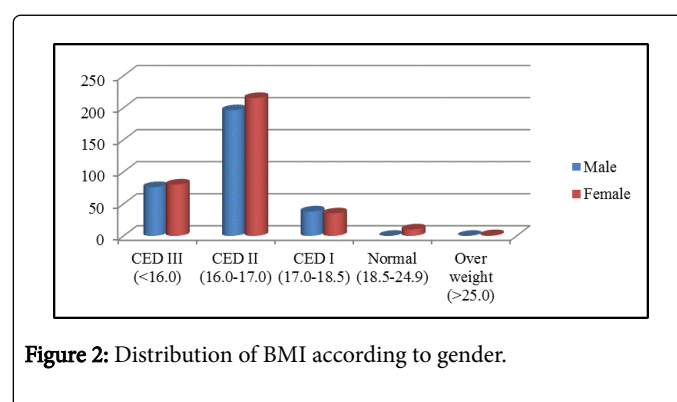


Figure 2: Distribution of BMI according to gender.

In the <5 years age group there was slight difference in the mean height of boys ( $93.3 \pm 12.6$ ) and girls ( $87.8 \pm 22.7$ ). In the 6-15 years age group there was no much difference in the mean height of boys and girls. In the age group of 6-15 years girls ( $135.0 \pm 16.5$ ) were shorter by about 2-3 cm and lighter by 1 kg as compared to boys ( $28.17 \pm 9.6$ ) of the same age group. In above 16-65 age group there was much differences in the mean height and mean weight of male and females. The tribal peoples were shorter and lighter when compared with the NCHS standards (Table 3).

Age Group	Height (cm)				Weight (kg)			
	Male		Female		Male		Female	
	Mean $\pm$ SD	Median	Mean $\pm$ SD	Median	Mean $\pm$ SD	Median	Mean $\pm$ SD	Median
<5	$93.3 \pm 12.6$	93.6	$87.8 \pm 22.7$	85.3	$12.2 \pm 3.53$	11.0	$12.2 \pm 8.9$	11.0
6-15	$135.0 \pm 16.5$	137.2	$133.0 \pm 14.7$	134.4	$28.17 \pm 9.6$	27.0	$27.7 \pm 9.6$	26.00
16-25	$158.9 \pm 7.6$	158.4	$150.9 \pm 6.5$	150.9	$48.3 \pm 6.1$	49.0	$42.9 \pm 5.4$	43.0
26-35	$159.7 \pm 6.7$	159.9	$149.2 \pm 4.9$	149.3	$51.4 \pm 7.17$	50.0	$46.3 \pm 8.1$	45.0
36-45	$202.8 \pm 5.8$	160.2	$150.6 \pm 5.13$	150.8	$49.8 \pm 6.50$	50.0	$46.4 \pm 8.9$	45.0
46-55	$160.6 \pm 6.03$	160.5	$148.7 \pm 6.51$	146.4	$49.7 \pm 7.61$	50.0	$42.7 \pm 6.45$	42.0
56-65	$161.2 \pm 4.78$	161.1	$149.6 \pm 4.98$	149.0	$48.7 \pm 7.04$	48.0	$43.6 \pm 5.42$	43.0

65+	162.5 ± 3.66	162.2	148.6 ± 3.10	148.4	43.3 ± 3.51	43.0	39.2 ± 2.16	38.0
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**Table 3:** Distribution of Height (cm) and Weight (kg) of Jenukuruba tribes according to age and gender.

In the <5 years age group there was difference in the mean MUAC of boys (15.08 ± 5.65) and girls (13.3 ± 1.6). In the 6-25 years age groups there was no much difference in the mean mid upper arm circumferences (17.04 ± 2.76, 24.28 ± 8.85 and 17.8 ± 2.78, 23.2 ± 8.43)

and mean skinfold thickness at triceps (9.87 ± 3.75, 11.16 ± 3.95 and 9.90 ± 3.47, 9.99 ± 3.84) of boys and girls and above 26-65 age group there was slight differences in mid upper arm circumferences and mean skinfold thickness at triceps (Table 4).

Age Group	MUAC				Triceps			
	Male		Female		Male		Female	
	Mean ± SD	Median	Mean ± SD	Median	Mean ± SD	Median	Mean ± SD	Median
<5	15.08 ± 5.65	14.10	13.3 ± 1.6	13.35	-	-	-	-
6-15	17.04 ± 2.76	16.40	17.8 ± 2.78	17.5	9.87 ± 3.75	11.0	9.90 ± 3.47	10.00
16-25	24.28 ± 8.85	23.00	23.2 ± 8.43	22.0	11.16 ± 3.95	10.0	9.99 ± 3.84	10.00
26-35	13.07 ± 8.67	23.00	22.6 ± 3.07	22.15	11.14 ± 4.23	11.0	10.7 ± 5.58	10.00
36-45	22.71 ± 1.84	22.40	23.5 ± 8.75	21.70	10.3 ± 4.34	10.0	11.2 ± 5.29	10.00
46-55	22.39 ± 2.83	22.4	21.6 ± 2.63	22.50	9.33 ± 4.80	8.00	9.52 ± 3.78	9.00
56-65	21.45 ± 1.82	20.5	36.0 ± 2.3	23.4	7.50 ± 2.87	6.50	9.45 ± 4.36	8.00
65+	19.50 ± 1.64	20.4	21.9 ± 2.66	22.0	7.00 ± 2.45	7.00	9.00 ± 3.67	9.00

**Table 4:** Distribution of MUAC (cm) and Triceps (mm) of Jenukuruba tribes according to age and gender.

## Conclusion

Health care is one of the most important of all human endeavours to improve the quality of life especially of the tribal people [7-9]. Health problems and health practices of tribal communities have been profoundly influenced by the inter-play of complex social, cultural, educational, economic and political practices. In most tribal communities, there is a wealth of folklore associated with health belief.

In Karnataka Jenukuruba tribal peoples were identified as Particular Vulnerable Tribal Groups (PVTG). The present study reveals that, the Jenukuruba tribe of Kodagu district is suffering from different grades of malnutrition [10]. The finding reveals precautionary actions are desirable to progress the health and nutrition condition of the Jenukuruba tribal peoples.

## Note

Standard international units for reading results are as follows:

BMI: Kg/M<sup>2</sup>, Height: CM, Weight: Kg, MUAC: CM, Skinfold: MM

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