

## NUTRITIONAL STATUS OF AGED TRIBAL PEOPLE: A STUDY OF BIRHOR COMMUNITY IN PURULIYA DISTRICT, WEST BENGAL

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### **Abstract:**

The Nutritional Status and socio-economic profile of tribal people is an essential issue in India due to their marginalization from the mainstream population concerning various facilities. Under-nutrition is one of the main factors contributing to morbidity and death in the Developing Nations. India is home to more than half of the world's undernourished people. As determined by Body Mass Index (BMI), Chronic Energy Deficit (CED) prevalence is a reliable predictor of the population's poor demographic, socio-economic, and environmental circumstances, particularly among adults in developing nations. In addition, 57% of stroke fatalities and 24% of deaths from Coronary Heart Disease (CHD) in India are directly attributable to hypertension. Considering the standard of socio-economic and socio-demographic variables, it is undeniable that the tribes of India are the weakest segments of the population.

The term '*Birhor*' is derived from the Mundari dialect, where '*Bir*' means forest and '*hor*' stands for man of the jungle. Through the ages, Birhor folk have been living a nomadic life. Anthropologists have classified Birhor tribes as a proto-austroloid racial group and their language has been kept in Mundari group of languages. Loss of perpetual rights on forest resources, lack of employment opportunities, unfulfilled promises by politicians and hankering for bread and butter, these people are leading a miserable life. In 1971, their population in the Chotanagpur region was 3,598. In 1981, it touched 4,377. According to the Indian National Trust for the Welfare of Tribals (Intwot) survey their population now is (Census 2011) only 5017.

It is therefore, very crucial to investigate the socio-economic condition of the Birhor tribe concerning their employment, way of life, income status, level of education, eating habits and standard of life. This paper is an effort to analyse the socio-economic circumstances of the aged members of Birhor tribe in the Puruliya district by assessing the nutritional status and research on the relationship between BMI and hypertension in the elderly tribal population.

**Keywords:** Malnutrition, BMI, hypertension, Chronic Hunger Deficit, Tribal development, Social exclusion.

### **Introduction:**

The Nutritional Status and socio-economic profile of tribal people is an essential issue in India due to their marginalization from the mainstream population concerning various facilities. Under-nutrition is one of the main factors contributing to morbidity and death in the Developing Nations. India is home to more than half of the world's undernourished people. As determined by Body Mass Index (BMI), Chronic Energy Deficit (CED) prevalence is a reliable predictor of the population's poor demographic, socio-economic, and environmental circumstances, particularly among aged people in developing nations. In addition, 57% of stroke fatalities and 24% of deaths from Coronary Heart Disease (CHD) in India are directly attributable to hypertension. Considering the standard of socio-economic and socio-demographic variables, it is undeniable that the tribes of India are the weakest segments of the population.

According to Census (2011), Indian tribe contributes a population of 104.3 million out of the total population of 1.21 billion. India has more than 104 million tribal people who constitute 8.6 % of the total population. India probably has the largest number of tribal communities in the world (Topal and Samal, 2001). There are 705 Scheduled Tribes (ST) and 75 (approx.) Particularly Vulnerable Tribal Groups (PVTG) with diverse cultural and socio-economic developmental stages (Census, 2011).

In West Bengal, they constitute 14% of the total tribal population, the second largest tribe after Santal mainly settled in the districts of Paschim Medinipur, Bankura, Jalpaiguri, South 24 Parganas (Census, 2011). The Oraon are an agricultural tribe found mainly in Bihar, Jharkhand, Orissa and West Bengal. They are also distributed in Tripura, Assam, Maharashtra, some parts of Madhya Pradesh. They have a distinctive cultural identity of their own, with a language, which belongs to the Dravidian language family. According to Census (2011), Indian tribe contributes a population of 104.3 million out of the total

population of 1.21 billion (8.6 % of the total population). India probably has the largest number of tribal communities in the world (Topal and Samal, 2001). There are 705 Scheduled Tribes (ST) and 75 (approx.) Particularly Vulnerable Tribal Groups (PVTG) with diverse cultural and socio-economic developmental stages (Census, 2011). *Birhor* is come under the PVTG.

### Objectives:

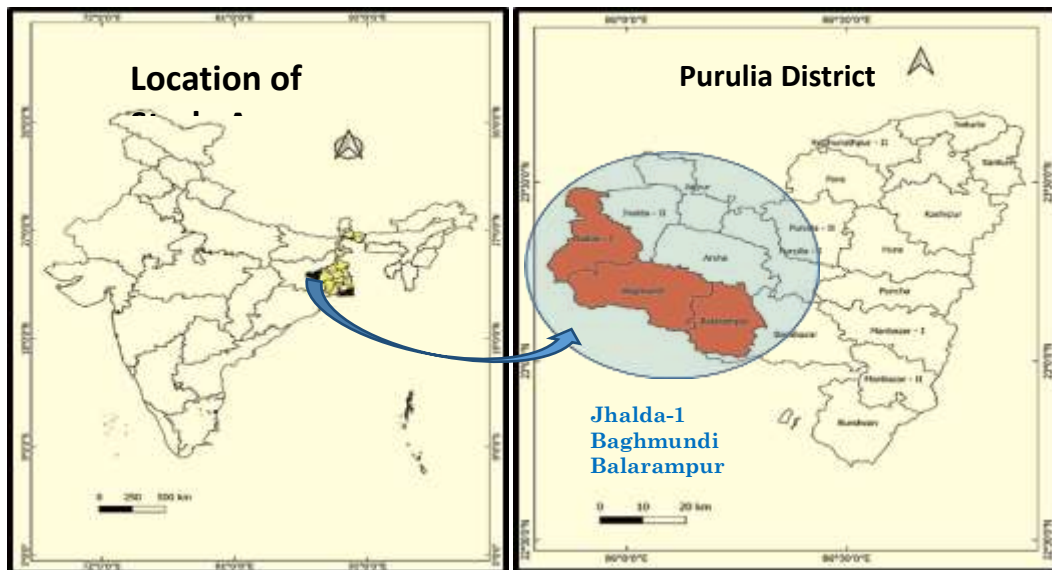
The main objectives of this study are:

to analyse the socio-economic status of the aged members of *Birhor* tribe in the Purulia district,  
to evaluate the nutritional status of the aged members of *Birhor* tribe of Purulia district of West Bengal,  
and

to assess the relationship between BMI and life sustainability in the elderly *Birhors* of the study area.

### Study Area:

Purulia is located at 22° 36' N to 23° 30' N latitudes and 85° 45' E to 86° 39' E longitudes. The total area covered is 6259 Km<sup>2</sup>.



### Villages under Study

Jhalda-1: Tulin, Pusti & Masina

Bagmundi: Baghmundi, Barria & Birgram.

Balarampur: Genrue, Dabha & Tentlo

### Materials and Methods:

Our Community based cross-sectional study was undertaken mainly among the *Birhor* tribes of Purulia district.

Respondents were selected from the villages of three CD Blocks (Bagmundi, Balarampur and Jhalda-1) of Purulia district for sample study

(these three Blocks have high concentration of *Birhor* community).

Each respondents were interviewed through a predesigned pretested and structured questionnaire schedule. A total of 102 samples (50 male & 52 female) were collected whose age group ranges from 55 years to 79 years.

Respondents are selected through simple random sampling.

The participants were classified into three age groups,

Group I: 55-65 years,

Group II: 65-70 years and

Group III: >75 years.

The study was carried out during the period of February to July, 2018

The BMI was computed using the standard equation:

$$[\text{BMI} = \text{Weight (kg)} / \text{height (m}^2\text{)}]$$

Nutritional status was evaluated using internationally accepted BMI guidelines (WHO, 1995), Where, the cut-off points were used:

CED BMI: < 16.0, 16.0-16.9 and 17.0- 18.4 kg/ m<sup>2</sup>, respectively

We followed the World Health Organization's classification (1995) of the public health problem of low BMI, based on adult populations worldwide. This classification categorizes prevalence according to

percentage of a population with BMI < 18.5.

- Low (5-9%): warning sign, monitoring required.
- Medium (10-19%): poor situation
- High (20-39%): serious situation
- Very high ( $\geq 40\%$ ): critical situation
- Student's t-test is done to justify the sex differences.
- Age-group differences were justified through one way ANOVA (F test).
- Sex differences in CED were determined by chi-square ( $\chi^2$ ) test.

All statistical analyses were undertaken using the Statistical Package (SPSS- 16). Statistical significance was set at  $p < 0.05$ . The socio-economic status is assessed by modified Kuppaswamy socio-economic classification scale. Usually three components viz. education, occupation of head of the family and monthly family income are considered to assess the socio-economic status.

### Results:

The *Birhors* are of short stature, long head, wavy hair and broad nose. They belong to the Proto-Australoid racial stock. According to the India census (2011) India consists of only 17,241 *Birhor* tribal populations, which is only 0.01% of the total tribal population of India.

Sl. No.	Name of the States	Total Population	Percent n=17241	Rural Population	Percent n=16089	Urban population	Percent n=1115
1	Jharkhand	10,726	62.21	10,230	63.58	496	44.48
2	Bihar	377	2.18	323	2	54	4.84
3	Madhya Pradesh	52	0.3	11	0.06	41	3.37
4	Maharashtra	145	0.84	45	0.27	100	8.96
5	Odisha	596	3.45	555	3.44	4	0.35
6	Chhattisgarh	3104	18	3015	18.73	89	7.98
7	West Bengal	2241	12.99	1910	11.87	331	29.68
8	India	17241	100	16089	100	1115	100

In West Bengal, the *Birhor* tribal community constitute 14% of the total tribal population, the second largest tribe after Santal mainly settled in the districts of Paschim Medinipur, Bankura, Jalpaiguri, South 24 Parganas (Census, 2011). The *Birhor* is an agricultural tribe and they have a distinctive cultural identity of their own, with a language, which belongs to the Dravidian language family.

Mean, standard deviation, t-test and significance ( $p$ ) of age and some anthropometric variables viz., weight (kg), height (cm), mid-upper arm circumference (MUAC; cm), waist circumference (WC; cm), hip circumference (HC, cm), biceps skinfold (BSF; mm), triceps skinfold (TSF; mm), sub-scapular skinfold (SSSF; mm) and BMI ( $\text{kg}/\text{m}^2$ ) of  $\geq 18$  years old *Birhor* tribals are presented as.

Significant ( $p < 0.001$ )

- sex differences in mean
- Wt ( $t = 3.637$ ,  $p < 0.001$ )
- Ht ( $t = 6.035$ ,  $p < 0.001$ )

Variables	Sex				T	P
	Male		Female			
	$\mu$	sd	$\mu$	sd		
AGE	36.8856	5.4056	35.87	5.57632	0.39	0.697
WT	45.0806	6.43555	45.33	7.35766	3.637	0
HT	44.4039	5.40427	42.6293	5.07853	5.035	0
MUAC	24.75	2.43583	23.7267	3.57954	0.92	0.057
WC	73.0056	5.45035	70.692	6.00079	0.223	0.724
HC	80.5806	4.50886	80.6347	5.30249	-0.066	0.948
BSF	3.3028	0.76629	3.0573	0.75584	0.292	0.098
TSF	4.225	0.02745	4.2333	0.23642	-0.004	0.986
SSSKF	5.6547	0.20478	5.32	0.54754	0.073	0.763
BMI	20.89	2.6559	20.2377	3.32534	0.448	0.54

Chronic Energy Deficiency (CED Grade I, II and III) among the Aged *Birhor* of Purulia:

- Undernutrition (CED grades age and sex combined) among *Birhor* was 26.5%.

- The sex specific rates were 33.3 % (F) and 19.4 % (M),
- It was also observed that young adult females (>75 years) had the highest prevalence of CED (36.4 %) and lowest in group-I males (9.5 %).
- There was a highly significant sex difference in CED prevalence based on BMI ( $X^2= 10.334$ ,  $df = 4$ ,  $p= 0.05$ ).

**Conclusion:**

Tribal development is a multi-dimensional vast and complex issue. The most important aspects of tribal development are education, occupation, socio-economic development, food security, and health and nutrition facilities. No singular policy is enough to fulfil their distinct needs. To have a notable tribe specific socio-cultural development as well as betterment of their standard of living, it is thus, necessary to understand their socio-economic conditions, cultural norms & traditions, food habits, life style, and their nutritional status. The *Birhors* are deprived from basic necessities of life. They could not maintain their livelihood due to their marginalized incomes, lack of education and social backwardness. It is very important to explore the socio-economic status of *Birhor* tribe with respect to their occupation, lifestyle, income, education and food habits, more specifically their basic way of life.

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