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ABSTRACT

Introduction: *The pre-Dravidian, the Dravidian (Brunette-Dolichocephalic), the Indo-Aryans (fair Dolichocephalism), Indo-Alpines (Branchycephal) and Mongolians constitute mainly the racial element in the population of India. According to Ghurye (1963), it is possible to contend that even if the tribes are not aborigines of the exact areas, they now occupy, they are the autochthones of India and to that extent they may be called aborigines. But as per Darwin's theory, general feature of any living organism can be changed and modified from its own character by environmental impact and gene mutation. Keeping the entire thoughts and theories, we justified the racial elements within definite sampling frame with the help of somatometry.*

Objectives: *The objective of the study is to examine and determine the racial variation amongst 15-20 years teenagers of tribals' communities in South Bastar district of Chhattisgarh.*

Methodology and Study Area: *The methods of data collection are based on secondary literature and somatometric analysis by direct measurement of the selected aspirants. On the basis of somatometric analysis of definite characters 11 parameters of measurement, are organized from 15 to 20 years, equal sample size of male (n=125) and female (n=125). The analysis is based on the comparison between standard range of racial classification and observed range of samples with mean value of measurements of its minor or negligible errors. For above purpose, five villages in Kowakonda block, district South Bastar Dantewada had been selected.*

Result: *The findings of our study stated that large number of teenage population is traced as Mongoloid feature. Brachycephalic elements amongst tribal population in south Bastar, are dominating characters rather than their own features of Dolichocephalic.*

Conclusion: *From the east there was a wide spread movement of the southern Mongoloid southwards in the Bay of Bengal and almost north eastern regions entered within tribals of Bastar, influencing the gene which is responsible for racial variation amongst them.*

Key Words: *Dravidian, Indo-Aryans, Indo-Alpines, Mongolians, South Bastar.*

INTRODUCTION

Famous anthropologist Montague says, "Race may be defined as a population which differs in the frequency of some gene or genes, which is actually exchanging or capable of exchanging genes across whatever boundaries separate it from othepopulatin of the species" (Jha, 1994). Due to this respect, many anthropologists classified inhabitants and the tribals of India.

According to Risley (1903), pre-dravidians and Dravidians are the dominating somatoscopic features in Deccan zone. Pre Dravidians are an autochthonous group characterised by dolichocephalic head, short stature and broad nose. Skin colour varies from dark brown to nearly black. Typical representatives are Bhill, Gond, Halba, Oraon and Santhals whilst Dravidians have long head, medium nose and medium stature, their skin colour is brownish black. This element is represented in the Tamil Brahmins, the people of Malabar, Travancore and Cochin, generally it is represented in the Telgu, Malayalam and Kannada speaking population. George Campbell stated that (Campbell, 1865) the Indian 'aboriginals' were divided into Kolarians (Kols, Bheels, Korikos, Bygahs etc.) and Dravidians (Gonds, Hulba.Gonds, Khonds, Kois etc.).

Significantly, races can be defined by the briefest of descriptions, with the recording of manners and customs by interview, and of the specimens' habitat, name, age, parentage and sex, by far the bulk of the report to measurements i.e. measurements of height, facial index, length of upper arm, lower arm, thigh and leg, breadth of chest and body, colour of skin, eyes, pupils, beard and moustache, length or other peculiarity of heel, any other physical peculiarities, and diet also (*Report of the Ethnological Committee on Papers laid before them and upon examination of specimens of Aboriginal tribes brought to the Jubbulpore Exhibition of 1866-67*, Nagpur, 1868). According to MPCRO report (MPCRO, 1874) there were twenty three 'certain' (13 Kolarian and 10 Dravidian) and six 'doubtful' aboriginal races, there is little reproduction of the anthropometric findings of the Committee.

In spite of above Risley stated the people of India were composed of seven basic racial types: the Mongoloid, the Dravidian, the Indo-Aryan, the Turko-Iranian, the Mongolo-Dravidian, the Aryo-Dravidian and the Scytho-Dravidian. Each group was the result of incursions by different racial types into the subcontinent, the Scythians arriving from central Asia sometime in the 2nd

millennium and sweeping down the west coast and the Aryans arriving shortly after. The Mongoloid and the Dravidian races were the original inhabitants of north-eastern India and the Dravidians the original inhabitants of the south and with these races the invading peoples sometimes mixed and sometimes, apparently, not. Most of those thought to be tribals were described as being of Dravidian or Mongolian stock, whilst the agricultural or peasant classes of north India were either of mixed stock, or were Aryan in origin. All this Risley believed could be proven by the simple act of measurement, though he admitted that his own evidence, at best, suggested only a threefold racial division between Aryan, Mongoloid and Dravidian (O'Hanlon, 1985).

However, modern anthropological thought, influenced by the latest developments in biology such as the concept of the cline and the mathematical theory of population genetics, has largely overthrown the notions of race developed by Risley and others in the late nineteenth century. Indeed the view of present day geneticists is that *homo sapiens* probably originated in Africa and that as a consequence the genetic diversity between Africans (for example between a Zulu and a Masai) is many times greater than that between Africans and Europeans, or even between Europeans and Chinese. Together with the theory of race, African anthropologists have also long since rejected the concept of the tribe. Both phenomena, when examined closely, reveal a variety of genetic and social processes at work, but few of these processes follow one another with sufficient consistency to merit a unitary form of ranking.

Any classifications of race, or social grouping, in this way, including the traditional notions of 'tribe' are, in effect, wholly arbitrary. In the African context, Aidan Southall has cleverly debunked a number of such traditional usages. There are, of course, numerous instances of self identification by certain groups, however an extraordinary number of ethnic or communal associations have either evolved in response to external pressures, or have been directly imposed. In such cases the history of 'tribes' tells us more about the powerful and the elite than about the subject peoples themselves.

In the case of Bastar, the ethnicity of physiological identity is going to change because of high levels of assimilation and integration within this culture, faced with the multiple problems of definition, of illusion and of transition and transformation as well as globalisation. Aidan South

all had argued that the contingent nature of stateless societies (characterised as they are by multi polities, ritual super integration, complementary opposition, intersecting kinship and distributive legitimacy) is of their essence and is not something we ought to be trying to sweep away by penetrating analysis. Although this sort of argument has its attractions, it nonetheless has little explanatory force and in reaction some anthropologists have dropped the study of tribes altogether in favour of sub-groups of people who really are lineally related by blood (Southall, 1965).

The difference lay, as Curtin describes it, in that “science” the body of knowledge rationally derived from empirical observation, then supported the proposition that race was one of the principal determinants of attitudes, endowments, capabilities and inherent tendencies among human beings. Race thus seemed to determine the course of human history (Curtin, 1964) by so many genetical and environmental aspects.

Objectives

With above background the objective of the study is to examine and determine the racial variation amongst 15-20 years teenagers of tribals’ communities in South Bastar district of Chhattisgarh.

METHODOLOGY

Extensive literature review and somatometric analysis of the subjects within sampling framework are the main tools of data collection. For racial identification of individual, 11 parameters of measurement had been selected which is sufficient to describe ethnicity of anyone. Somatometric indices are expressed as the percentage ratio of two measurements discussed in the result part but to use an index in any practical purpose it is necessary to have a classification of the different values of the same into different categories. So all the observed frequency and ratio are compared with its own measures of mean by minor error with the distribution of the population by percentage (%). For systematic metrical study of sample, useful technique and formulae has been used, which are given below in table 1.

Table 1:Somatometric Measures

Index	Landmark	Used Apparatus	Formula
Cephalic Index (Length-Breadth Index)	<i>Euryon (eu)- Euryon (eu)</i>	Spreading	Max. head brth./Max. head length × 100
	<i>Glabella(g) –Opisthocranion(op)</i>	Caliper	

Table 1: Somatometric Measures

Index	Landmark	Used Apparatus	Formula
Morphological Facial Index	<i>Nasion (n) – Gnathion (gn)</i>	Sliding Caliper	Morphological facial length/ Morphological facial brth. × 100
	<i>Zyzion (zy) – Zyzion (zy)</i>	Spreading Caliper	
Upper Facial Index	<i>Nasion (n) – Prosthion (pr)</i>	Sliding Caliper	Upper facial ht./ Bizy. brth. × 100
	<i>Zyzion (zy) – Zyzion (zy)</i>	Spreading Caliper	
Nasal Index	<i>Alare (al) – Alare (al)</i>	Sliding Caliper	Nasal brth./ Nasal ht. × 100
	Nasion (n)- subnasale (sn)		
Jugo-Frontal Index	Fontotemporale (ft) - Fontotemporale (ft)	Spreading Caliper	Min. frontal brth./ Bizy. brth × 100
	<i>Zyzion (zy) – Zyzion (zy)</i>		
Jugo-Mandibular Index	Gonion (go) – Gonion (go)	Spreading Caliper	Bi-gonial brth/ Bizy. brth. × 100
	<i>Zyzion (zy) – Zyzion (zy)</i>		
Leg Index	Height iliospinale -Height Tibiale	Anthropometer	Total leg length/ Ht. vertex x 100
	Floor – Iliospinale (is)		
	Floor – Tibiale (ti)		
Bi-acromial Breadth Index	Acromion (a)- Acromion (a)	Rod Compass	Bi-acromial brth/ Ht. vertex x 100
	Floor – vertex (v)	Anthropometer	
Bi-cristal Breadth Index	Iliocristale (ic) - Iliocristale (ic)	Pelvimeter	Bi-cristal brth./ Ht. vertex x 100
	Floor – vertex (v)	Anthropometer	
Pignet-Vervaeck Index		Rod Compass	Wt. + chest girth/ Ht. vertex x 100
Skelic Index	Height Iliospinale– Height Spherion	Anthropometer	Leg length × Ht. – Sitting ht./ Sitting ht. x 100

SAMPLE AND STUDY AREA

It is pertinent to note that some anthropologist described that Bastar is closet to Dravidian areas and the local tribes are considered in Pre-Dravidian race. There are so many factors are responsible to exist racial characters. Thus to justify our data equal sample in both male and female categories were comprises in each village. With above mindset south Bastar Dantewada district and its Kowakonda block is selected in where 5 villages had chosen. In sampling frame, 15-20 year both male and female in equal ratio were included under somatometric observation.

Table 2: Study Areas and Sampling Frame

State/District/Block	Block	Village	Population (15-20 years)	
			Male	Female
Chhattisgarh/ South Bastar/ Dantewada	Kowakonda	Majhaguda	25	25
		Nerli	25	25
		Nakulnar	25	25
		Kameli	25	25
		Gamawada	25	25
Total			125	125

Limitation and Strength of the Study

Sampling data is retrieved from 15-20 years teenage population amongst tribal communities of South Bastar regions and all the somatometric measurements are taken from mingled tribals' communities in the selected villages. So our analysis cannot justify racial character of a tribal community alone.

The somatoscopic variation cannot be clearly judge individual's life because throughout the life, face as well as body becomes mature before 15 years. Apart from that 15-20 years population is highly influenced by globalisation and we can say that this group would be the representative of the evolutionary elements for past and future. The major strength of this research paper is its somatometric analysis because there are two types of anthropological characters for the determination of racial elements. These are definite and secondly, indefinite; the definite characters are those which submit to quantitative and qualitative estimate and can be exposed in mathematical term (physical stature and cranial measurement) while the definite characters like the colour of skin, hair, eyes are difficult to measure and are not capable of expressing in term of figures.

RESULT AND DISCUSSION

Table 3 stated that large percentage of the male and female population included under brachycephal category with mean value of 82.36 for male and 83.54 for female while second large majority is mesocephal where mean value of cephalic index for male is 34.40 and 37.60 for female with minor errors. Dolichocephalic head is the characteristic feature of pre-Dravidians race

but it has been observed from the somatometric analysis, the majority of the samples come under brachycephal and mesocephal category which indicates the Mongoloid feature is persisting amongst large sample frame.

Table 3: Cephalic Index (Length-Breadth Index)

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Hyperdolichocephal	x-70.9	x-71.9	68.23	+1.13	9.60	67.89	+1.29	4.80
Dolichocephal	71.0-75.9	72.0-76.9	71.05	+2.04	2.40	73.68	+2.17	5.60
Mesocephal	76.0-80.9	77.0-81.9	76.84	+1.69	34.40	77.89	+1.63	37.60
Brachycephal	81.0-85.4	82.0-86.4	82.36	+1.79	49.60	83.54	+1.49	47.20
Hyperbrachycephal	85.5-90.9	86.5-91.9	85.92	+1.32	3.20	86.59	+1.77	2.40
Ultrabrachycephal	91.0+	92.0+	91.12	+1.79	0.80	92.15	+1.42	2.40

It has been revealed from table 4, the dominating morphological facial index in both male and female group is mesoprosop by 41.60 for male and 45.60 for female. The other dominating character within this population is euryprosop with 29.60 and 31.20 for male and female respectively. Mesoprosop face is another indicator of the Mongoloid character while Guha (1931) stated that most of the tribes of Central Southern India belongs to Proto- Australoid which is characterised by Euryprosop face.

Table 4: Morphological Facial Index

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Hypereuryprosop	x-78.9	x-76.9	69.89	+2.04	15.20	68.98	+1.78	8.80
Euryprosop	79.0-83.9	77.0-81.9	79.58	+1.67	29.60	78.15	+2.15	31.20
Mesoprosop	84.0-87.9	82.0-85.9	85.13	+1.46	41.60	82.51	+1.41	45.60
Leptoprosop	88.0-92.9	86.0-90.9	89.91	+1.89	9.60	87.18	+1.78	13.60
Hyperleptoprosop	93.0+	91.0+	93.96	+1.46	4.00	91.54	+1.93	0.80

Table 5 described the upper facial index of male and female in which both group are come under mesen category with 48.80 for male and 55.20 for female. The forehead is less developed and slightly retreated, where supraorbital ridges are often prominent and metrically it is known as euryen while large population come under Mongoloid feature regarding facial index of Mesen category.

Table 5: Upper Facial Index

Category	Range	Observed Range					
		Male			Female		
		Mean	Errors	Percent	Mean	Errors	Percent
Hypereuryen	x-42.9	38.71	±2.15	2.40	35.18	±2.79	10.40
Euryen	43.0-47.9	45.86	±1.67	31.20	42.58	±2.13	16.80
Mesen	48.0-52.9	51.15	±1.43	48.80	49.59	±1.28	55.20
Lepten	53.0-56.9	54.92	±2.01	12.00	54.35	±1.75	15.20
Hyperlepten	57+	58.92	±2.15	5.60	58.48	±1.96	2.40

According to table 6, the large majority of the respondents (male: 57.60 and female: 53.60) come under mesorrhine category and leptorrhine (male: 19.20 and female: 21.60) is other dominating category. The most obvious non metric characters which distinguished the Proto – Australoid type are depressed root of the nose, strong development of supraorbital ridges and a nose is broader than medium and metrically it is hyperleptorrhine but observed analysis depicts the large population of male and female are medium nose as Mesorrhine, symptom of Mongoloid features.

Table 6: Nasal Index

Category	Range	Observed Range					
		Male			Female		
		Mean	Errors	Percent	Mean	Errors	Percent
Hyperleptorrhine	x-54.9	52.15	±2.11	8.80	51.95	±2.43	8.80
Leptorrhine	55.0-69.9	59.58	±2.15	19.20	58.95	±2.15	21.60
Mesorrhine	70.0-84.9	79.52	±2.17	57.60	76.89	±2.14	53.60
Chamaerrhine	85.0-99.9	91.86	±2.16	10.40	87.15	±2.17	13.60
Hyperchamaerrhine	100.0+	101.23	±1.13	4.00	100.64	±1.17	2.40

Table 7 stated that 48 percent male and 47.20 female had comprised in medium category of jugo frontal index. Medium jugo-frontal index is the ethnic element of the tribes of Assam and

the frontier regions of Burma. The Sema Nagas of Assam and the Limbus of Nepal are said to be the true representatives of this type while large percentage of the observed tribals population come under this category which is considered as Papaeo-Mongoloid race by Guha (1931).

Table 7: Jugo-Frontal Index

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Very Narrow	x-69.9	x-71.9	66.58	+1.17	11.20	69.95	+1.21	13.60
Narrow	70.0-74.9	72.0-76.9	72.72	+1.83	32.80	73.18	+1.17	31.20
Medium	75.0-79.9	77.0-81.9	77.35	+1.49	48.00	79.45	+1.17	47.20
Broad	80.0-84.9	82.0-86.9	81.81	+1.78	5.60	83.78	+1.49	7.20
Very Broad	85.0+	87.0+	89.14	+1.83	2.40	87.69	+1.63	0.80

Table 8 depicted that large population of male (39.20 percent) and female (37.60 percent) are come under medium category of jugo mandibular index which is a prompting feature of mangolids (Guha, 1935). The mean value of observed measures of male is 76.53 and for female is 73.89.

Table 8: Jugo-Mandibular Index

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Very Narrow	x-69.9	x-67.9	52.86	+1.17	4.80	52.12	+3.16	7.20
Narrow	70.0-74.9	68.0-72.9	71.49	+1.29	28.80	68.96	+2.14	27.20
Medium	75.0-79.9	73.0-77.9	76.53	+1.36	39.20	73.89	+1.78	37.60
Broad	80.0-84.9	78.0-82.9	81.75	+1.75	21.60	79.95	+1.43	25.60
Very Broad	85.0+	83.0+	87.45	+1.24	5.60	84.11	+1.96	2.40

Table 9 is stated that the medium leg is the dominating character of the sampling group with 47.20 of male and 49.60 of female respectively while 36.80 percent male and 39.20 percent female come under short legged category and rest 11.20 percent female and 48.25 percent male come under high legged group.

Table 9: Leg Index

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Short Legged	x-53.5	x-54.0	46.78	+2.23	36.80	54.02	+2.78	39.20
Medium Legged	53.6-54.0	54.1-54.5	53.15	+1.16	47.20	56.23	+1.03	49.60

High Legged	54.1+	54.6	55.98	+1.03	16.00	48.25	+0.79	11.20
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Large percentage of both male and female are existing with medium shoulder where 63.20 and 69.60 percent of male and female come under this group respectively. Biacromial Breadth Index of Mongoloid is characterised by medium shoulder (Guha, 1938) and it has been analysed that observed mean value is 22.18 for men and 21.19 for female.

Table 10: Bi-acromial Breadth Index

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Narrow Shoulder	x-22.0	x-21.5	19.15	+1.79	11.20	20.52	+1.13	15.20
Medium Shoulder	22.1-23.0	21.6-22.5	22.18	+1.09	63.20	21.19	+1.29	69.60
Broad Shoulder	23.1+	22.6+	25.16	+1.56	25.60	23.17	+0.89	15.20

Medium pelvis is the dominating character amongst majority of the respondents which is a Mongoloid character. In observed population 73.60 percent of male and 55.20 percent of female is included under this category with mean value of 17.98 and 16.86 respectively.

Table 11: Bicristal Breadth Index

Category	Range		Observed Range					
	Male	Female	Male			Female		
			Mean	Errors	Percent	Mean	Errors	Percent
Narrow Pelvis	x-16.4	x-17.4	12.91	+2.39	20.80	13.52	+2.15	31.20
Medium Pelvis	16.5-17.4	17.5-18.4	16.86	+2.17	73.60	17.98	+1.16	55.20
Broad Pelvis	17.5+	18.5+	18.91	+1.06	5.60	20.16	+1.19	13.60

Table 12 described the pignet vervaek index come under medium category for both male (71.20 percent) and female (77.60 percent). The mean value of Pignet-vervaek index for male is 84.59 and for female it is 89.55 with minor error of the measurements.

Table 12: Pignet-Vervaek Index

Category	Range	Observed Range					
		Male			Female		
		Mean	Errors	Percent	Mean	Errors	Percent
Hypersthenic	x-70.0	64.45	+1.78	8.80	63.65	+1.98	3.20
Broad	70.1-82.9	70.94	+1.63	12.00	72.51	+2.16	8.00
Medium	83.0-93.0	84.59	+2.19	71.20	89.55	+2.13	77.60

Slender	93.1-104.0	95.23	+2.27	2.40	93.69	+2.17	4.00
Asthenic	104.1+	104.59	+0.89	5.60	104.91	+2.16	7.20

It has been observed from table 12 that skelic index is standardized with branchyskel amongst majority (male: 46.40 and female: 39.20) of the respondent. According to Sarkar (1954) Branchyskel or atleast mesatisskel are considered as the Negrito element but Risley stated that Brachyskel is Mongoloid's feature. At the same stage the extent of brachycephalization as envisaged by Guha has been denied particularly by Sarkar (1957). According to Sarkar, India is predominantly a Dolichocephalic head and hyperbranchyskel country. However mesocephal, branchcephals, and branchyskel are also found in appreciable numbers. Our findings stated that branchyskel is main skelike character of the observed population.

Table 13: Skelic Index

Category	Range	Observed Range					
		Male			Female		
		Mean	Errors	Percent	Mean	Errors	Percent
Hyperbrachyskel	x-74.9	72.59	+1.03	4.00	69.68	+1.49	6.40
Brachyskel	75.0-79.9	77.19	+1.79	46.40	75.49	+1.76	39.20
Sub-brachyskel	80.0-84.9	83.25	+0.85	23.20	81.65	+2.17	33.60
Mesatisskel	85.0-89.9	86.14	+0.98	16.80	86.88	+2.49	12.00
Sub-makroskel	90.0-94.9	91.56	+1.76	4.80	93.21	+0.89	6.40
Makroskel	95.0-99.9	96.36	+0.98	2.40	95.18	+0.76	1.60
Hypermakroskel	100.0+	103.12	+1.29	2.40	100.56	+0.89	0.80

Conclusion

On the basis of definite and indefinite characters found among the tribes of India, their racial elements have been explained by different anthropologists where they traced Dravidian and Nigroid feature in the central zone but the result of our study stated significantly that the tribals population of Bastar (15-20 age group) are associated with Mongoloid features while it is described before Pre-Dravidian, Dravidian as well as Negroid. The extensive review regarding racial existence, the publication of Darwin's *Origin of Species* in 1859, undermined the position of both monogenists and polygenists, but at the same time as affirming the essential unity of the human species, evolutionism, by establishing extraordinarily long time scales as the basis for human development, allowed for the conception of far greater variety than had previously been

thought. No longer was it thought that the Negro's hair might straighten and his skin turn white after prolonged exposure to the more equable climate of the U.S.A. (Gould 1981). In support of this theory the developing science of anthropometry seemed to offer novel and certain proof to justify the genetical variation by existence of somatoscopic changes among identified ethnic groups.

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