



Head and facial measurements among the Kunbi of Uttara Kannada district, Karnataka

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ABSTRACT

The Kunbi of Uttara Kannada District are divided into two endogamous groups namely Kunbi and Ate Kunbi. They have migrated from Goa and entered Karnataka State through the Coastal region. They are settled down in the five taluks of Uttara Kannada District namely Yellapur, Joida, Karwar, Ankola and Haliyal. They live in the remote parts of the forest. When the somatometric measurements of Kunbi males compared with males of the local population of the present study show significant differences in the majority of the measurements. Thus, Kunbi somatometrically represent different groups in Karnataka.

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Introduction

Kunbi is a small interesting tribal group in Karnataka. The Kunbi of Uttara Kannada District are divided into two endogamous groups namely Kunbi and Ate Kunbi. They have migrated from Goa and entered Karnataka State through the Coastal region. They are settled down in the five taluks of Uttara Kannada District namely Yellapur, Joida, Karwar, Ankola and Haliyal.

They are thickly populated in and around Joida and Yellapur taluks. They live in the remote parts of the forest. The present study aims to bring together as much information as possible on Anthropometrics with the view to see how far these two groups vary from one another. Since the Kunbi constitute the unit of evolution, it may be possible to discern the ongoing process of evolution- microevolution.

Material and Methods

Head and facial measurements were taken by using spreading caliper and sliding caliper on 465 Kunbi male individuals between the age group of 18 to 40 years. To compare, measurements were also taken on 225 male individuals from the local population (original settlers).

Further, the results of the present study are compared with the results of such studies carried out on different Karnataka populations.

Results and discussions:

The collected anthropometric data have been tabulated. The table 1 shows the complete picture of the means, standard error and standard deviations of the different facial characters obtained from the two groups of Kunbi male. Analysis of Variance is used here to obtain information regarding the physical differentiations between the two groups of Kunbi males. The result of analysis of variance among the Kunbi males is presented in table 2.

The first column of this table represents 'within groups' estimate variance for each measurement. The second is 'between

groups' estimate and the last column gives F ratio. The value of F at 5% level of significance on 687 d.f. is 2.99.

Of the ten measurements considered here, six measurements show significant F value. These measurements are minimum frontal breadth, bigonial breadth, bizygomatic breadth, nasal depth, upper facial height and total facial height.

Further, analysis for inter-group differences in the six measurements where the F values are significant is attempted by employing the t-test to each pair of means. The results of this analysis are shown in table 3. At 5 per cent level of significance (large sample) t value is 1.96.

The statistically significant results reveal that out of six morphological measurements Ate Kunbi differ from the local population in all six characters and from Kunbi in three characters these are minimum frontal breadth, bizygomatic breadth and upper facial height. Further, Ate Kunbi differ from the Kunbi in three characters namely minimum frontal breadth, Upper facial height and total facial height.

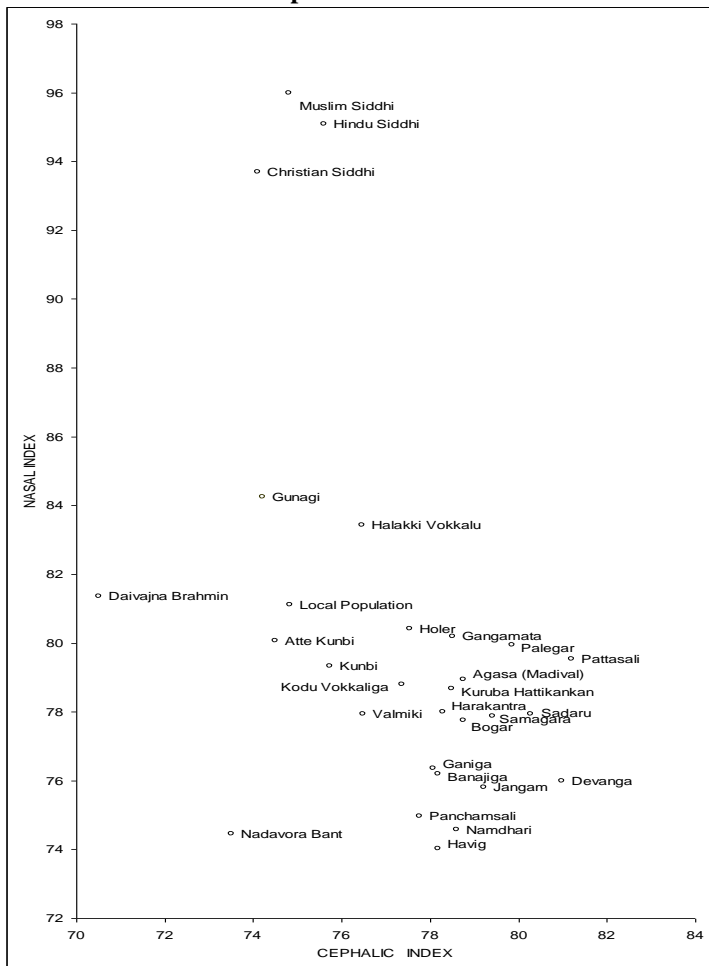
Comparison with the other populations of Karnataka

The results of the present study are compared with the results of such studies carried out on different populations of Karnataka. This comparison is to see the nature of variability between Kunbi and other groups.

Karve (1954) has done extensive anthropometric survey in several groups of Karnataka Populations. For the purpose of the comparison only the Cephalic Index and the Nasal Index have been taken into account and presented in table 4.

The scattered diagram of Nasal Index plotted against the Cephalic Index is shown in graph 1.

It is clear from the table that majority of the population of Karnataka are forming one cluster i.e. Mesocephalic and Platyrhine except Halakki Vokkal and Siddhi. Both the groups of Kunbi join the main cluster of Karnataka populations i.e. Mesocephalic and Platyrhine.

Fig. 1: Scatter Diagram of Nasal Index plotted against Cephalic Index.**Conclusions:**

Significant differences were observed in majority of the morphological characters, when data were compared between Kunbi and local population of the present study. Thus, Kunbi somatometrically represent a different group in Karnataka. It seems more plausible to accept that the two groups of Kunbi are descendants of the same ancestral population. The genealogies collected from the two groups of the Kunbi do not suggest the earlier admixture between them or with the local population, but in the present generation a few cases of outside the group marriages have taken place. The Kunbi even though live in same environmental conditions and the morphological differences between them may be due to micro evolutionary changes for adaptation to the same environment.

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Table 1: Distribution of Means, Standard Errors and Standard Deviations of ten Somatometric characters among the Kunbi, Atte Kunbi and Local population

Sl. No.	Characters	Kunbi			Atte Kunbi			Local population		
		Mean \pm	S.E.	S.D.	Mean \pm	S.E.	S.D.	Mean \pm	S.E.	S.D.
1.	Head Length	18.48	0.06	1.22	18.36	0.17	1.65	18.39	0.12	1.83
2.	Head Breadth	13.76	0.05	0.92	13.60	0.09	0.90	13.82	0.07	1.01
3.	Minimum Frontal Breadth	12.29	0.04	0.71	11.53	0.07	0.72	11.89	0.04	0.67
4.	Bigonial Breadth	10.64	0.05	0.86	10.67	0.08	0.84	10.40	0.05	0.79
5.	Bizygomatic Breadth	12.95	0.03	0.65	12.96	0.06	0.58	12.63	0.05	0.70
6.	Nasal Length	4.72	0.04	0.67	4.65	1.50	0.40	4.77	0.03	0.42
7.	Nasal Breadth	3.79	0.02	0.40	3.72	0.50	0.49	3.76	0.02	0.34
8.	Nasal Depth	1.49	0.02	0.45	1.54	0.02	0.23	1.68	0.03	0.50
9.	Upper Facial Height	6.25	0.02	0.47	6.06	0.04	0.37	6.42	0.03	0.49
10.	Total Facial Height	10.97	0.03	0.58	10.77	0.05	0.53	10.98	0.04	0.62

Table 2: Analysis of variance for ten morphological characters

Sl. No.	Characters	Within Groups	Between Groups	F-values
1.	Head Length	2.27	0.90	0.39
2.	Head Breadth	1.03	1.13	1.08
3.	Minimum Frontal Breadth	0.49	26.55	54.49*
4.	Bigonial Breadth	0.70	4.56	6.50*
5.	Bizygomatic Breadth	0.43	8.01	18.76*
6.	Nasal Length	0.31	0.54	1.69
7.	Nasal Breadth	1.55	2.17	1.39
8.	Nasal Depth	0.19	2.50	12.70*
9.	Upper Facial Height	0.22	4.91	22.68*
10.	Total Facial Height	0.35	1.83	5.25*

* = Significant at 5%
(F=2.99 at 5% level for 2 and 687 d.f.)

Table 3: Values of t for intergroup comparison

Sl. No.	Characters	LP X AKP	LP X KP	AKP X KP
1.	Minimum Frontal Breadth	-4.36*	6.73*	9.44*
2.	Bigonial Breadth	2.76*	3.36	-0.30
3.	Bizygomatic Breadth	4.19*	5.72*	-0.15
4.	Nasal Depth	2.58*	-0.34	1.14
5.	Upper Facial Height	-6.67*	-4.24*	3.75*
6.	Total Facial Height	-2.99*	-0.25	3.12*

* = Significant at 5% level

Table :4 Distribution of cephalic index and nasal index in the different groups of Karnataka population.

Sl. No.	Castes	Cephalic Index	Nasal Index
	Karve – 1954		
1	Agasa (Madival)	78.75	78.95
2	Banajiga	78.19	76.20
3	Havig	81.56	74.02
4	Devanga	80.98	75.99
5	Ganiga	78.07	76.36
6	Gangamata	78.50	80.19
7	Halakki Vokkal	76.46	83.44
8	Harakantra	78.28	78.01
9	Holer	77.54	80.43
10	Jangam	79.22	75.82
11	Kuruba Hattikankan	78.49	78.67
12	Nadavora Bant	73.50	74.46
13	Namdhari	78.60	74.58
14	Palegar	79.85	79.94
15	Panchamsali	77.75	74.97
16	Pattasali	81.20	79.55
17	Sadaru	80.27	77.95
18	Valmiki	76.49	77.95
19	Bogar	78.76	77.76
20	Samagara	79.41	77.87
21	Kudu Vokkaliga	77.36	78.81
	Pavate – 1985		
22	Christian Siddhis	74.1	93.7
23	Hindu Siddhis	75.6	95.1
24	Muslim Siddhis	74.8	96.0
	Present Study		
25	Kunbi	74.82	80.93
26	Atte Kunbi	74.50	80.08
27	Local Population	75.65	79.56