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Anthroposcopic Variation Among Sub Tribes of Mali from Andhra Pradesh

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ABSTRACT The present paper reports the distribution of twelve anthroposcopic characters among two sub tribes of Mali viz., Manzai Mali and Bod Mali. Majority of Mali people are dark brown coloured and possess straight eye slits, straight nasal breadth and horizontal nasal septum. The fore head among majority of Malis is straight with medium height and breadth. Usually, the lips are medium sized and the prominence of chin is medium to receding. Dimple is seen among a very few. Majority of people possess attached ear lobes and men exhibit hypertrichosis. Regarding body built, men are athletic where as women are asthenic. Bisexual differences are noticed for majority of characters among Manzai Mali rather than among Bod Mali. The variation between two sub tribes is worth mentioning, since nine out of fifteen characters exhibited significant differences. This may be due to their varied socio-economic conditions, in addition to the genetic isolation.

INTRODUCTION

The Mali, a minor agriculture tribe, inhabits the Eastern Ghats in Visakhapatnam district, extended over the borders of Andhra Pradesh and Orissa states. It has two distinct endogamous sub groups namely Manzai Mali and Bod Mali with approximate population sizes of 1600 and 400 respectively in Andhra Pradesh. Hierarchically, they enjoy superior status over majority of neighbouring tribes except Bagatha. Bod Mali claims superior status over Manzai Mali. Both these sub tribes speak Adiwasi Oriya, a dialect of Indo-Aryan language family. In the present paper an attempt is made to investigate the difference between two sub tribes in the anthroposcopic characters, which are assumed to be polygenetically inherited and may also be influenced by environmental factors. Though it is obvious that the anthroposcopic observations are not as accurate as anthropometry, the application of anthroposcopic observations in population studies is discussed by Howells (1966), Sanghvi (1953), Karve and Malhotra (1968), etc.

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MATERIAL AND METHODS

The data for various anthroposcopic observations were collected from 295 Manzai Mali and 103 Bod Mali unrelated adults living in Munchingput Mandal of Visakhapatnam district, Andhra Pradesh. The collection and categorization of these characters were made following standard procedures, illustrated by Singh and Bhasin (1989) and Weiner and Lourie (1981). The differences between men and women as well as between two sub tribes were assessed by employing chi-square tests.

RESULTS AND DISCUSSION

A total of twelve anthroposcopic characters are recorded and the individuals are classified according to the morphology. The distribution of different forms of each character is presented in table 1. The skin colour, an adaptive character, determined by heredity and partially influenced by environment, exhibits wide variation and hence used as important criterion in population variation. Majority of men and women of Manzai Mali and Bod Mali women exhibit dark brown skin colour on two regions, viz., upper arm and fore head. Regarding hair form, majority of men of both the sub tribes possess curly hair followed by wavy hair. Manzai mali women possess wavy hair more frequently, while most of the Bod mali women possess straight hair. The opening of eye slits among majority of people is straight and a few possess oblique opening. Epicanthic eye fold, a characteristic feature of Mongoloid people, is completely absent. The profile view of nasal bridge may be straight, concave and convex. Majority of Manzai Mali men and

Table 1: Anthroposcopic profile of Manzai Mali and Bod Mali sub tribes

Characters/	*Manzai Mali*			*Bod Mali*		
Classifications	*Men (n = 148)*	*Women (n = 147)*	*Both (n = 295)*	*Men (n = 69)*	*Women (n = 34)*	*Both (n = 103)*
Skin colour (Upper arm)						
Light brown	0.68	1.36	1.02	8.70	8.82	8.74
Brown	26.35	23.13	24.75	56.52	29.41	47.57
Dark Brown	72.97	75.51	74.24	34.78	61.76	43.69
Skin colour (fore head)						
Light brown	0.68	1.36	1.02	5.80	8.82	6.80
Brown	25.68	21.09	23.39	55.07	26.47	45.63
Dark brown	73.65	77.55	75.59	39.13	64.71	47.57
Hair form						
Straight	14.19	29.93	22.03	24.64	70.59	39.81
Wavy	38.51	48.30	43.39	26.09	29.41	27.18
Curly	47.30	21.77	34.58	49.28	0.00	33.01
Eye slits						
Straight	67.57	46.94	57.29	57.97	58.82	58.25
Oblique	32.43	53.06	42.71	42.03	41.18	41.75
Nasal bridge						
Straight	77.03	46.26	61.69	85.51	55.88	55.34
Concave	15.54	49.66	32.54	11.59	32.35	18.45
Convex	7.43	4.08	5.76	2.90	11.76	5.83
Nasal septum						
Horizontal	70.27	50.34	60.34	55.07	55.88	55.34
Upward	16.22	41.50	28.81	30.43	38.24	33.01
Downward	13.51	8.16	10.85	14.49	5.88	11.65
Fore head (Shape)						
Slope	2.70	1.36	2.03	30.43	8.82	23.30
Straight	97.30	98.64	97.97	69.57	91.18	76.70
Fore head (Height)						
High	9.46	1.36	5.42	13.04	5.88	10.68
Medium	89.19	93.20	91.19	86.96	94.12	89.32
Low	1.35	5.44	3.39	0.00	0.00	0.00
Fore head (Breadth)						
Narrow	0.00	1.36	0.68	0.00	0.00	0.00
Medium	98.64	98.64	98.64	92.75	100.00	95.15
Broad	1.36	0.00	0.68	7.25	0.00	4.85
Membral lip						
Thin	4.73	3.40	4.07	14.49	5.88	11.65
Medium	81.76	95.92	88.81	78.26	85.29	80.58
Thick	13.51	0.68	7.12	7.25	8.82	7.77
Averted	0.00	0.00	0.00	0.00	0.00	0.00
Chin						
Prominent	3.38	1.36	2.37	8.70	17.65	11.65
Medium	83.78	88.44	86.10	65.22	79.41	69.90
Receding	12.84	10.20	11.53	26.09	2.94	18.45
Dimple						
Absent	83.78	91.84	87.80	86.96	94.12	89.32
Present on cheek	0.00	0.68	0.34	0.00	0.00	0.00
Present on chin	14.86	7.48	11.19	13.04	5.88	10.68
Present on cheek & chin	1.35	0.00	0.68	0.00	0.00	0.00
Ear lobe						
Attached	57.43	42.86	50.17	55.07	61.76	57.28
Free	42.57	57.14	49.83	44.93	38.24	42.72
Hypertrichosis						
Absent	87.84	0.00		91.30	0.00	
Present Scanty	10.81	0.00		5.80	0.00	
Present Bushy	1.35	0.00		2.90	0.00	
Present on Lobe or Pinna	8.10	0.00		5.80	0.00	
Present on Tragus or Meatus	4.06	0.00		2.90	0.00	
Body musculature						
Asthenic	2.70	10.20	6.44	1.45	11.76	4.85
Athletic	97.30	88.44	92.88	98.55	79.41	92.23
Bulky	0.00	1.36	0.68	0.00	8.82	2.91

All frequencies are expressed in percentages

both men and women of Bod Mali exhibit straight nasal bridge, while slightly higher number of Manzai Mali women possess concave nasal bridges. Majority of Mali record horizontal nasal septum followed by upwardly directed septum. Regarding forehead, most of the people among both sub tribes exhibit straight forehead with medium height and breadth, however a few Bod Mali men show sloppy and high foreheads. The lips are medium sized among majority. Averted lips, which is a frequent feature of Negroid people is completely absent. Concerning the prominence of chin, most of the people of both the sub tribes possess medium to receding chins. Presence of dimple was considered to be inherited through an autosomal irregular dominant gene (McKusick, 1983). Only one Manzai Mali women exhibit dimple on cheek, while two other men show dimple on both the cheek and chin. However, a few people exhibit dimple only on chin. Relatively higher number of Mali people exhibit attached ear lobes than free ear lobes. It is found that the long hair on the pinna of the ear (hypertrichosis) is present only in men and hence considered the trait to be a Y-linked character. Malhotra (1969) has extensively discussed hypertrichosis pinna auris representing several parts of the ear. The hypertrichosis is observed among men of both Manzai Mali and Bod Mali with relatively higher incidence. The body musculature is broadly categorized into athletic, asthenic and bulky in the present survey. The Mali are agriculturists engaged in high physical activity. They walk long distance regularly to collect forest produce and to sell the same in market at far away places. Hence most of the men folk have athletic body, while women exhibit, asthenic body built. It is worth mentioning that none of the men are bulky in both the sub tribes although a very few women are slightly bulky.

The bisexual differences among each sub tribes and inter population differences between two sub tribes are evaluated by conducting chi-square tests (Table 2). A greater extent of bisexual variation is noticed among Manzai Mali rather than among Bod Mali. Out of fifteen observations, nine show differences between men and women of Manzai Mali, while Bod Mali records bisexual differences for only six characters. Among these characters, nine are differing significantly between Manzai Mali and Bod Mali. The features such as skin colour, hair form, morphology of forehead, lips, chin, etc. showing significant differences. Thus, the two sub tribes of Mali vary each other morphologically, which may be due to their varied socio-economic conditions in addition to the genetic isolations.

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Table 2: Bisexual and interpopulation variation among Mali

Anthroposcopic observations	χ^2 *Values for bisexual differences*		χ^2 *value for difference between two sub tribes*
	Manzai Mali	*Bod Mali*	
Skin colour on upper arm	0.7135	7.3146*	38.8125***
Skin colour on fore head	1.1522	7.5220*	31.8785***
Hair form	23.8235***	33.4517***	14.2245***
Eye slit	12.8260***	1.0452	0.0291
Nasal bridge	39.1357***	11.0340***	7.5522*
Nasal septum	32.0877***	1.8720	0.8173
Fore head shape	0.6667	5.9523	16.823***
Fore head height	12.6897**	1.2245	6.6300*
Fore head breadth	4.0001	3.5037	8.3657*
Membral lip	19.0474***	1.6622	7.9206*
Chin	1.8974	8.8378*	18.9582***
Dimple	4.4638*	1.2245	0.1702
Ear lobe	6.2670*	0.4169	1.5473
Body musculature	0.0805*	11.9854**	3.3569
Hypertrichosis	-	-	0.5744

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

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