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Estimation of stature from different head and face measurements among male and female Jatavs of Delhi

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Abstract: *An attempt has been made in the present study to estimate of stature from different body dimensions among male and female Jatavs of Delhi. A total of 300 Jatavs (100males and 200 females) ranging in age17 to 40 year where measured for the following measurements besides stature, nasal height, nasal breadth, head length, head breadth, ear length.*

I. Introduction

Identification of human skeleton remains is an important aspects of Forensic examination. It includes determining the species of origin, age sex, and stature from bones. Superimposition of skull and photograph have to be carried out in many cases to establish identity. Skeleton or bones and teeth are the hard parts of the body, Thus they escape decay unlike other soft body tissues and

get putrefied and fossilized after considerable lapse of time in nature when preserved under condition to fossilization Hence , even after millions of years we find fossilized bones teeth or whole skeleton , which are require identification.

Forensic Anthropologists, during the examination of skeleton remains attempts to answer the following question.

Whether the bones are Human or nonhuman?
Whether they belong to one or more than one individual?
What would be the age?
What would be the sex?
How tall the person would be?

In identification of human remains, forensic anthropologists help to interpret evidence pertaining to manner or cause of death. Marks on bones provide very important information's to how death occurred. With all evidence of skeleton trauma, it is imperatives recognized and distinguish among the ante mortem, perimortem (around the time of death) postmortem (after death)

Trauma .A skull fracture may be indeed reflecting a blow that could have caused death. Because dried bones have different fracture characteristics than the bone from living organism. It is possible to distinguish between perimortem and postmortem damage by studying details of skeleton lesion.

Many studies have proved beyond doubt that there is positive correlation between stature and length of long bones (Athwal;1963;Patel et al,1964;) (Joshi et al; 1964 ,1965) In similar approach, many workers have demonstrated positive correlation between stature and other body dimensions.
(dug gal et al;1986; Nath et al;1988,1990a,1990b,1997; Anand et al;1990;Singh,1991 Harshwardhana,1996. Kaur 1999:Jain et al 1999.

Though works concerning estimation of stature from long bones as well as from certain body dimensions have been put forward for some of the Indian population, works concerned estimation of stature from facial dimensions are scanty as any part of the human skeleton can be found as the evidences, there is perhaps a need to investigate whether there is any possible significant correlation between stature and facial dimensions in human body. Therefore the present work attempt to estimate stature from facial measurement among the Jatavs of Delhi.

II. Material and Methods

The present study has been designed to conduct measurements on male and female of Jatavs inhabiting in different areas of Delhi

In the age range of 17 to 40 years for males and females to formulate multiplication factor and regression equation for estimation of stature using Nasal height, Nasal breath, Head length, head breadth, Ear length.

Thus following measurement has been obtained on each subject

Using the standard measurement techniques recommended by Martin and Saller (1959), All brook (1961) and Weiner and Louie (1969) . All measurements listed have been taken on the left side of the body except stature.

Stature: It is obtained as the projective distance between the standing surface and the highest point on the head (v –vertex) in mid saggital plane when head is obtained in the eye ear plane using anthropometric rod.

Nasal height: It measures the straight distance between nasion and subnasale (n-sn)using sliding caliper.
Nasal breadth: It measures from alare to alare using sliding caliper.

Head length: It measures the straight distance between glabella and opisthocranion (the most projecting point on the dorsal surface of the head) using spreading caliper.

Head breadth: It measures the straight distance between the two eurya (eu)ie maximum breadth wherever found using spreading caliper

Ear length: It measures the distance between superaurale (sa) to subaurale (sba) using spreading caliper.

TABLE : 1 Sex differences among male and female Jatavs of Delhi

		MALES N=100		FEMALES N = 200		
		MEAN	S.E	MEAN	S.E	
1	STATURE	152.53	0.56	152.44	0.39	0.13NS
2	NH	4.77	0.06	4.88	0.23	0.55 NS
3	NBR	3.9	0.05	3.75	0.15	1.1 NS
4	HEL	18.7	0.12	17.9	0.09	1.57 NS
5	HBR	13.9	0.07	13.44	0.06	2.2 S
6	EL	5.9	0.05	6	0.11	3.66 S

Table 1: shows that the sex differences are significant only for HBR and EL whereas the remaining measurement exhibit has non-significant sex difference.

Table-2 Multiplication factor for estimation of stature among male and female Jatavs of Delhi.

S.NO	MEASUREMENTS	MULTIPLICATION FACTOR (MALES) MEAN	S.D	MULTIPLICATION FACTOR (FEMALES) MEAN	S.D
1	NH	34.14	5.25	33.17	4.40
2	NBR	41.59	5.36	43.06	5.05
3	HEL	8.76	0.59	8.65	0.95
4	HBR	11.80	0.77	8.60	1.86
5	EL	27.07	2.59	26.45	1.00

Table 2 : It present the multiplication factor for all the 5 head & face measurement among male and female Jatavs. The value of multiplication factor exhibit variation for both the sexes. Males shows greater Multiplication factor for NH, HBR, and EL while female exhibit greater multiplication factor for NBR & multiplication factor for HEL is the same for both males and females.

III. Conclusion

Analysis of data reveals that Jatavs males exhibit greater dimensions for NBR,HEL and HBR than the females, which for the remaining measurements,NH and EL the females have greater dimensions on subjecting the data to t-test it is observed that the sex difference are significant only for HBR and EL whereas the remaining measurement exhibit has non significant sex difference.

And the value of multiplication factor exhibits variation for both the sexes. Males shows greater Multiplication factor for NH, HBR, and EL while female exhibit greater multiplication factor for NBR &

multiplication factor for HEL is the same for both males and females.

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