

Digital Dermatoglyphic Study among the Muttarasi of Andhra Pradesh

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ABSTRACT Qualitative digital dermatoglyphics is studied in a sample of 200 individuals (100 males and 100 females) belonging to Muttarasi a backward community of Chittoor district, Andhra Pradesh. The order of pattern occurrence is $L > W > A$ in both the sexes. The frequency of whorls is slightly more among females (42.7%) than males (41.2%). The frequency of ulnar loops in males (53.8%) is more than females (51.1%). The frequency of arches found to be high among females (5.0%) than males (3.7%). Both bilateral and bisexual differences are statistically insignificant. The values of all papillary indices in females are found to be more than in males. The percentage of total symmetry is slightly more in males (69.2%) than females (66.4%). The total frequency of monomorphic hands is also more in males (48.0%) than females (37.0%).

In this paper an attempt has been made to study the digital dermatoglyphics (qualitative) of Muttarasi, a backward caste from Chittoor district of Andhra Pradesh to fill the gap in the existing knowledge of dermatoglyphics and to account inter population variation by comparing with other neighbouring caste and tribal populations.

MATERIAL AND METHODS

Fully rolled bilateral finger ball prints have been collected from 200 (100 males and 100 fe-

males) randomly selected unrelated individuals from eight villages in Chittoor district of Andhra Pradesh. The age of individuals ranges from 15 to 60 years. The prints were analysed for qualitative characters according to the methods of cummins and Midlo (1961) and Mavalwala (1978). Pattern indices are calculated using standard formulae. Appropriate statistical treatment was extended.

RESULTS AND DISCUSSION

The order of occurrence of pattern types is $L > W > A$ in both sexes as shown in table 1. The whorls occur with slightly higher frequency among the females (42.7%) than among the males (41.2%) and are found to be more on right (21.1%) than on left (20.1%) hands in males, while in females it occurs more on left (22.6%) than on right (20.1%) hands. The frequency of ulnar (53.8%) and radial (1.3%) loops are slightly more in males than females (UL: 51.1%; RL: 1.2%). The percentage of ulnar loops are equally (26.9%) distributed on right and left hands in males, whereas, in females left hands (27.2%) show higher frequency than right hands (23.9%). However, the frequency of radial loops are more on left hands in both sexes. The

Table 1: Percentage distribution of finger pattern types and pattern indices among Muttarasis

Sex	Hand	Finger pattern types				Finger pattern indices			
		Arches	Radial loops	Ulnar loops	Whorls	Dankmeijer's index	Furuhata's index	Poll's index	Cummin's index
M	R	1.5 (15)	0.5 (5)	26.9 (269)	21.1 (211)	8.98	74.77	6.71	13.75
	L	2.2 (22)	0.8 (8)	26.9 (269)	20.1 (201)				
	R+L	3.7 (37)	1.3 (13)	53.8 (538)	41.2 (412)				
F	R	2.2 (22)	0.5 (5)	27.2 (272)	20.1 (201)	11.71	81.64	9.56	13.89
	L	2.8 (28)	0.7 (7)	23.9 (239)	22.6 (226)				
	R+L	5.0 (50)	1.2 (12)	51.1 (511)	42.7 (427)				
M+F	R	1.9 (37)	0.5 (10)	27.1 (541)	20.6 (412)	10.36	78.12	8.10	13.82
	L	2.5 (50)	0.8 (15)	25.4 (508)	21.4 (427)				
	R+L	4.4 (87)	1.3 (25)	52.5 (1049)	42.0 (839)				

frequency of arches are found to be more among the females (5.0%) than the males (3.7%). Equal number of arches (2.2%) are found on the right and left palms in both the sexes. However, bilateral and bisexual differences with regard to the distribution of basic pattern types falls short of significance among Muttarasis.

the V digit, where as the females show highest frequency of symmetrical patterns on V digit followed by the IV one (table 2). As shown in table 3, whorl monomorphy among males is equal (10.00%) in both hands and in females it is more in left hand (9.99%). Loop monomorphy is higher in left hands (16.00%) among males and

Table 2: Percentage distribution of digitwise and patternwise symmetry among Muttarasis

Digit	Males				Females			
	Symmetry				Symmetry			
	Arch	Loop	Whorl	Total	Arch	Loop	Whorl	Total
I	5.0	35.0	25.0	65.0	4.0	35.0	21.0	60.0
II	5.0	26.0	26.0	57.0	7.0	19.0	31.0	57.0
III	1.0	68.0	15.0	84.0	4.0	44.0	18.0	66.0
IV	0.0	24.0	38.0	62.0	2.0	31.0	39.0	72.0
V	0.0	56.0	12.0	78.0	3.0	64.0	10.0	77.0

Table 3: Percentage distribution of patternwise monomorphic hands among Muttarasis

Sex	Hand	Pattern monomorphy			
		Arch	Loop	Whorl	Total
Males	Right	0.0	12.0	10.0	22.0
	Left	0.0	16.0	10.0	26.0
	Total	0.0	28.0	20.0	48.0
Females	Right	2.0	14.0	2.0	18.0
	Left	1.0	9.0	9.0	19.0
	Total	3.0	23.0	11.0	37.0

The values of papillary indices like Dankmeijer's (11.71), Furuhashi's (81.64), poll's (9.56) and Cummin's (13.89) among females are higher than the males, indicating higher percentage of arches and whorls in females than males.

The occurrence of symmetrical pattern is predominant on III digit among males followed by

in right hands (14.00%) among females. The total frequency of monomorphic hands is more in males (48.00%) than in females (37.00%).

The basic finger pattern frequencies of the Muttarasis when compared with some of the backward, tribal and caste populations of Andhra Pradesh in order to understand the interrelationship between them it is observed that no consistent relationship exists between the distribution of digital dermatoglyphic features and the social hierarchy.

REFERENCES

- Cummins, H. and Midlo, C.: *Finger Prints, palms and Soles: An introduction to dermatoglyphics*. New York, Dover (1961).
- Mavalwala, J.: A methodology for dermatoglyphics- Finger and Palms. In: *Dermatoglyphics: An International Perspective*. J. Mavalwala (Ed.). The Hague, Mouton (1978).