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Finger Dermatoglyphics Among Chakali Caste of Andhra Pradesh

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ABSTRACT This paper describes finger dormatoglyphics of 100 men and 100 women belonging to Chakali, a washerman community of Andhra Pradesh. This population records higher incidence of ulnar loops followed by whorls. Bisexual and bimanual differences are also observed.

INTRODUCTION

Dermatoglyphics possessess greater potentialities as a tool for study ethnic variations due to its nature and extent of variability. Although several reports are available on tribes of Andhra Pradesh, only few are available on Andhra caste populations (Narahari, 1979; Mathew and Ram Mohan, 1981; Babu and Jaikishan, 1983; Reddy and Anuradha, 1984) Therefore an attempt has been made to inquire into the variation of finger dermatoglyphics among Chakali, an endogamous caste population of Andhra Pradesh. Traditionally, Chakali is a washerman community and constitutionally, a backward caste in Andhra Pradesh.

MATERIALS AND METHODS

Finger prints from 100 men and 100 women belonging to Chakali caste living in and around Visakhapatnam city of Andhra Pradesh were taken following Cummins and Midlo (1961). Classification of finger pattern types was restricted to four main types : arch, ulnar loop, radial loop and whorl. The methods of Cummins and Midlo (1961) and Holt (1968) were followed for the analysis of data.

RESULTS AND DISCUSSION

The details of frequencies of pattern types are presented in table 1. Chakali show a preponderance of loops. Males record higher frequencies of arches (4.00%) and ulnar loops (54.60%) than females (0.60% and 52.40%, respectively). However, women record higher incidence of radial loops and whorls than men. Significant bisexual differences are evident in this population. Right hands register higher frequencies of radial loops and whorls than left hands in which arches and ulnar loops are more. The bilateral differences are significant in males and also in the total material (Table 1).

The values of quantitative characters like finger pattern intensity index (FPII) and four ridge counts *viz.*, RRC (Radial Ridge Count),

Table 1: Distribution of basic finger patterns among the Chakali

Sex	*Hand*	*Pattern types*			
		Whorl	*Ulnar loop*	*Radial loop*	*Arch*
Male (n = 100)	R	208 (41.6%)	266 (533.2%)	12 (2.4%)	14 (2.8%)
	L	190 (38.0%)	280 (56.0%)	4 (0.8%)	26 (5.2%)
	R + L	398 (39.8%)	546 (54.6%)	16 (1.6%)	40 (4.0%)
Female (n = 100)	R	244 (48.8%)	242 (48.4%)	10 (2.0%)	4 (0.8%)
	L	204 (40.8%)	282 (56.4%)	12 (2.4%)	2 (0.4%)
	R + L	448 (44.8%)	524(52.4%)	22 (2.2%)	6 (0.6%)
Male + Female (n = 200)	R	452 (45.2%)	508 (50.8%)	22 (2.2%)	18 (1.8%)
	L	394 (39.4%)	562 (56.2%)	16 (1.6%)	28 (2.8%)
	R + L	846 (42.3%)	1070 (53.5%)	38 (1.9%)	46 (2.3%)

1.χ^2, Bimamual - Male = 24.3590, Female = 7.4732, Total = 9.8230
χ^2, = Bisexual - Right Side = 8.6596, Left Side = 25.0761, R + L = 29.4853
1. $p > 0.05$; 2 $p > 0.01$

Table 2: Some quantitative finger dermatoglyphic characteristics among the Chakali

Character	*Right Hand*	*Left Hand*	*Both Hands*	*t-value for Bimanual differences*
	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$	
Males (n = 100)				
FPII	6.98 ± 0.27	6.68 ± 0.28	13.66 ± 0.51	0.7778
RRC	65.76 ± 3.54	65.74 ± 3.81	131.64 ± 7.00	0.0038
URC	27.72 ± 4.14	24.56 ± 4.15	52.28 ± 8.07	0.5389
TRC	69.54 ± 3.74	69.46 ± 3.89	139.00 ± 7.33	0.0148
ATRC	93.48 ± 6.95	89.84 ± 6.64	183.32 ± 13.27	0.3788
Females (n = 100)				
FPII	7.50 ± 0.26	7.40 ± 0.19	14.90 ± 0.41	0.3123
RRC	77.84 ± 2.24	76.14 ± 2.59	153.98 ± 4.54	0.4955
URC	36.14 ± 3.57	25.44 ± 2.99	51.58 ± 6.01	2.2979[1]
TRC	81.12 ± 2.34	78.52 ± 2.43	159.64 ± 4.56	0.7694
ATRC	113.38 ± 4.75	101.58 ± 4.27	214.96 ± 8.60	1.8495
t-values for Bisexual Differences				
FPII	1.3947	2.1482[1]	1.8817	
RRC	2.8833[2]	2.2549[1]	2.6778[3]	
URC	2.3572[1]	0.1722	0.9239	
TRC	2.6211[2]	1.9738[1]	2.3910[1]	
ATRC	4.1923[3]	1.4878	2.0008[1]	

1. $p > 0.05$; 2. $p > 0.01$; 3. $p > 0.001$

URC (Ulnar Ridge Count), TRC (Total Ridge Count) and ATRC (Absolute Total Ridge Count) are listed in table 2. Women and right hands score higher values of FPII than men and left hands correspondingly due to occurrence of more whorls. Females in both the hands and right hands in both the sexes register higher ridge counts than their counterparts. t-values indicate much bisexual variation than bimanual differences (table 2).

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