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The study of transverse palmar creases among Lodhis' of Sagar district, (Madhya Pradesh), India

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ABSTRACT: Creases provide important clues for the study of bimanual and bisexual variation. The purpose of the present investigations is to attempt the specificity of transverse palmar flexion creases among Lodhis, of Sagar district (MP), India. The basis of the study was 103 males and 102 females unrelated individuals of Lodhis'. For taking palm prints Cummins and Midlow (1859) method were fully adopted. The analysis of palmar creases was done in accordance with the method proposed by Bali and Choube (1971). The values in this study are of a qualitative in nature so the statistical interpretation of the data has been made by means of the chi-square test. The result shows significant bisexual and noticeable bimanual variation of transverse creases among Lodhis'.

KEYWORDS: Palmar Creases, Bimanual and Bisexual variation, Transverse creases.

INTRODUCTION

Palmar flexion creases are a viable method of bimanual and bisexual variation. Palmar creases are helpful in revealing anthropological characteristics viz., ethnic variations, bimanual and bisexual variations etc. and have been analyzed qualitatively and quantitatively.(Alter 1970, choube 1977, Dar et al 1977).

Palmar creases were distinguished into major and minor creases. Major palmar creases consist of radial longitudinal crease, proximal transverse crease and distal transverse crease and minor creases are not studied so far (Park et al 2010). Many researchers studied about the creases and their variations like Bali and Choube (1971), Sharma and Bali (1984), Choube (1980), Corn (1986), Bali and Sharma (1989), Okajima (2005), Kavamura et al (2007), Sharma and Sharma (2011) etc. The objective of present study is to study the bimanual and bisexual variation among Lodhis' of Sagar district (MP), India.

MATERIAL AND METHODS

The study was conducted in the Dhana and Hilgan villages of Sagar district of Madhya Pradesh, India. The data was collected among the unrelated individuals of Lodhi caste.

The hindu population has been traditionally categorized into four varnas viz. Brahmin, Kshatriya, Vaisya and Shudra. Caste wise Lodhis' lies in between vaishya and shudra varnas. On the other hands the Government of India categorized hindu population into General, Other backword castes (OBCs), and Scheduled caste (SC). The Lodhis' belongs to other backward castes (OBCs). The Lodhis' are agriculturist by nature and a large section of them are emerged as agricultural labours.

The data was collected randomly which here constitutes 103 males and 102 females. For taking palm prints Cummins and Midlow (1859) method were fully adopted. The analysis of palmar creases was done in accordance with the method proposed by Bali and Chaube (1971). The values in this study are of a qualitative nature. So the statistical interpretation of the data has been made by means of the Chi-square (X^2) test.

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RESULT AND DISCUSSION

The result related to transeverse palmar flexion creases of Lodhi caste are presented in the following tables :

Table 1: Frequency distribution of Transverse palmar crease among Lodhis'

Palmar Creases	Sex	Absolute frequency		Percentage		Rt + Lt absolute frequency (both hand combined)	Both hands combined percentage (Rt + Lt)
		Rt	Lt	Rt	Lt		
Single Radial Base Crease (SRBC)	Male	23	24	22.36	23.30	47	22.82
	Female	17	26	16.67	25.49	43	21.07
Double Radial Base Crease (DRBC)	Male	71	74	68.94	71.84	145	70.45
	Female	74	67	72.55	66.68	141	69.11
Triple Radial Base Crease (TRBC)	Male	9	5	8.76	4.85	14	6.71
	Female	11	9	10.78	8.82	20	9.81
Total	Male	103	103	100.0	99.99	206	99.99
	Female	102	102	100.0	99.99	204	99.99

1. Chi-square value for sex difference (Both hands combined)

   $X^2 = 28.88$, df 2, $P < 0.001$ (significant)

2. Chi-square value for bimanual difference among females (Both hands combined)

   $X^2 = 2.99$, df 2, $P > 0.1$ (insignificant)

3. Chi-square value for bimanual difference among males (Both hands combined)

   $X^2 = 19$, df 2, $P < 0.001$ (significant)

The table-1 shows frequency distribution of transverse palmar flexion creases among Lodhis'. It may be concluded that Double Radial Base Crease (DRBC) shows highest frequency among males and females in both the hands, and it shows sinistral dominance among males, and dextral dominance among females. The Single Radial Base Crease (SRBC) shows second highest frequency among males and females in both the hands and shows sinistral dominance among male and female individuals. The Triple Radial Base Crease (TRBC) shows meager frequency among males and females in both the hands and shows dextral dominance among males and females. The transverse palmar flexion creases shows significant bisexual and bimanual variation, while among females it show insignificant bimanual variation.

Table 2: Frequency distribution of sub types of Single Radial Base Crease (SRBC) among Lodhis'

Sub types	Sex	Absolute frequency		Percentage		Rt + Lt absolute frequency(both handcombined)	Hand percentage (both hands combined)
		Rt	Lt	Rt	Lt		
S_1	Male	2	1	8.69	4.16	3	6.38
	Female	2	1	11.76	3.85	3	6.97
S_2	Male	6	5	26.09	20.84	11	23.40
	Female	1	4	5.88	15.38	5	11.63
S_3	Male	15	17	65.19	70.83	32	68.08
	Female	14	21	82.35	80.76	35	81.39
S_4	Male	0	1	0	4.16	1	2.13
	Female	0	0	0	0	0	0
S_5	Male	0	0	0	0	0	0
	Female	0	0	0	0	0	0
Total	Male	23	24	99.98	99.99	47	99.99
	Female	17	26	99.99	99.99	43	99.99

The table-2 shows frequency distribution of sub types of single radial base crease (SRBC). It may be observed from the table that the sub types S_1 show the very meager occurrence in both left and right hands in both the sexes. The sub type S_2 exhibits dextral dominance among males and sinisteral dominance among females. There is slight bimanual and bisexual variation exist. In case of sub types S_3, it could be stated that this sub types show highest frequency in both the sexes and shows sinisteral dominance in both the sexes. In case of S_4 sub types it may be concluded that this sub type is absent in females and rarely present in males. The S_5 sub type show negative occurrence in male as well as in females.

It may be concluded that the subtype S_3 shows highest frequency among males and females in both the hands, while the S_5 sub-type shows negative occurrence in both the sexes.

Table 3: Frequency distribution of sub types of Double Radial Base Crease (DRBC) among Lodhis'

Sub types of DRBC	Sex	Absolute frequency		Percentage		Rt + Lt absolute frequency (both handscombined)	Hand percentage(both handscombined)
		Rt	Lt	Rt	Lt		
D_1	Male	0	0	0	0	0	0
	Female	1	0	1.35	0	1	0.70
D_2	Male	0	0	0	0	0	0
	Female	0	1	0	1.49	1	0.70
D_3	Male	0	0	0	0	0	0
	Female	0	0	0	0	0	0
D_4	Male	0	2	0	2.70	2	1.37
	Female	1	1	1.35	1.49	2	1.43
D_5	Male	24	21	33.80	28.37	45	31.04
	Female	30	14	40.54	20.89	44	31.20
D_6	Male	47	51	60.19	68.92	98	67.58
	Female	42	51	56.75	76.12	93	65.69
Total	Male	71	74	99.99	99.99	145	99.99
	Female	74	67	99.99	99.99	141	99.99

The table-3 shows frequency distribution of subtype of Double Radial Base Crease (DRBC). It may be observed from the table that the D_1 and D_2 sub type of double radial base crease show negative occurrence among males and show very meager frequency among females. The D_3 sub type of double radial base crease is absent in both hands among male and female individuals. The D_4 sub type show meager frequency in right and left hand in both the sexes. The most frequent sub type is D_5 in right and left hands in both the sexes. This sub type of configuration comes under the category of second highest sub type of double radial base crease (DRBC). The sub type D_6 show highest frequency in sub types of double radial base crease. It is shows highest frequency in both the hands and in both the Sexes.

It may be concluded that the subtype D_6 shows higher frequency among males and females in both the hands, while the D_3 subtype of crease shows negative occurrence among males and females.

Summing up the observations related to transverse palmar flexion creases among Lodhis'. It may be concluded that:

1. The Double Radial Base Crease (DRBC) shows highest frequency among both the sexes and in both the hands.
2. The transverse palmar flexion creases shows significant bisexual and bimanual variation among males and, it shows insignificant bimanual variation among females.
3. The subtype S_3 of Single Radial Base Crease (SRBC), shows highest frequency and S_5 shows negative occurrence among males and females in both the hands.
4. Subtype D_6 of Double Radial Base Crease (DRBC), shows higher frequency among males and females in both the hands, while the D_3 subtype shows negative occurrence among males and females in both the hands.
5. The Triple Radial Base Crease (TRBC) shows sinistral dominance among males and females.

It may be concluded that the transverse palmar flexion creases shows significant bisexual and bimanual variation, except females shows insignificant bimanual variation. Thus it may be stated that that the transverse palmar flexion creases may applied in the bimanual and bisexual variations.

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