

## Medial phalangeal crease Specificity among the Lodhis of Sagar District, (Madhya Pradesh), India

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**ABSTRACT :** *There are variety of phalangeal creases and broadly classified into various categories and sub-categories. In Anthropology, we studied the variation of creases in same population and different populations. The purpose of the present investigation is to study the bimanual and bisexual variation of medial phalangeal creases among Lodhis of Sagar district (MP), India. The basis of the study was 102 males and 102 females individuals of Lodhi caste. For taking palm prints and for the analysis of phalangeal creases the method prescribed by Bali (1980) is fully followed. The values in this study are of 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 bimanual variation of medial phalangeal creases among Lodhis.*

**Key words :** *Medial phalangeal crease, Bimanual and Bisexual Variation, Lodhis.*

### INTRODUCTION

The phalangeal flexion creases are helpful in the study of genetics and ethnic variation. The phalangeal creases are important morphological variable, has not been investigated fully. The work on medial phalangeal flexion creases is rather scant. It may be pointed out that work on creases is generally restricted to palmar creases only. The first citation of missing phalangeal crease was given by Cummins and Midlow (1943).

So many scientists and scholars worked on the phalangeal flexion crease. The main workers and Scholars are Rosa A. et al (2001), Amy R.U. Larson, Kenin D. et al (2001), Iwasawa, Motonao MD et al (2004), Okajima (2005), Dar H. and Jaffy M. (2008), Adetona M.O. et al (2012), Cook et al (2013), Moses O. Adetona (2014) and many others studied about phalangeal creases.

Here, the objective of the present paper is to study the bimanual and bisexual variation of medial phalangeal creases among Lodhis of Sagar district (M.P), India.

**MATERIAL AND METHODS**

The material for the present study is derived from four Villages from the Sagar district (M.P), India. The present material compresses 102 males and 102 females individuals of Lodhi caste.

The data has been collected from the four Villages of Sagar district (MP), India. The data were collected among the unrelated individuals of Lodhis.

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 backward castes (OBC), and Shedules caste (SC). The Lodhis belongs to other backward castes (OBC). The Lodhis are agriculturist by nature and a large section of them are emerged as agricultural labours.

The data was collected randomly from the unrelated individuals of Lodhis. For taking prints and analysis of the phalangeal creases the method prescribed by Bali (1980) is fully followed.

**RESULTS AND DISCUSSION**

The results related to medial phalangeal creases are presented in the following tables:

**Table 1 : Frequency distribution of Medial Phalangeal crease (main types) of Digit I**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Single	Rt	64	62.74	68	66.66
		Lt	61	59.80	59	57.84
		<b>Total (Rt+Lt)</b>	<b>125</b>	<b>61.27</b>	<b>127</b>	<b>62.25</b>
2	Simple	Rt	27	26.47	19	18.63
		Lt	24	23.53	22	21.58
		<b>Total (Rt+Lt)</b>	<b>51</b>	<b>24.00</b>	<b>41</b>	<b>20.09</b>
3	Composite	Rt	11	10.79	15	14.70
		Lt	17	16.67	21	20.58
		<b>Total (Rt+Lt)</b>	<b>28</b>	<b>13.72</b>	<b>36</b>	<b>17.64</b>
	Total	Rt	102	100.0	102	99.99
		Lt	102	100.0	102	100.0

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 84, \text{ df } 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 27, \text{ df } 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 63, \text{ df } 2, P < 0.001 \text{ (Significant)}$$

Table 1 shows frequency distribution of medial phalangeal creases (main types) of digit I among Lodhis. It may be observed from the table that highest frequency is shown by single type of crease among males and females. It shows dextral dominance among males and dextral dominance among females. In case of simple type of crease it shows dextral dominance among males and sinistral dominance among females. The composite type of crease shows sinistral dominance among males and females. It may be concluded from the table that single type of crease shows highest frequency among males and females. It may be concluded that the simple type of crease shows highest frequency among males and females and main types of medial phalangeal creases of digit I shows significant bimanual and bisexual variation.

**Table 2 : Frequency distribution of Medial Phalangeal crease (main types) of Digit II**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Single	Rt	28	27.45	25	24.50
		Lt	24	23.53	23	22.54
		<b>Total (Rt+Lt)</b>	<b>52</b>	<b>25.40</b>	<b>48</b>	<b>23.52</b>
2	Simple	Rt	53	51.96	57	55.88
		Lt	55	53.92	53	51.96
		<b>Total (Rt+Lt)</b>	<b>107</b>	<b>52.45</b>	<b>110</b>	<b>53.92</b>
3	Composite	Rt	21	20.58	19	18.63
		Lt	23	22.54	26	25.49
		<b>Total (Rt+Lt)</b>	<b>44</b>	<b>21.56</b>	<b>45</b>	<b>22.05</b>
	Total	Rt	102	99.99	102	99.909
		Lt	102	100.0	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 13, \text{ df } 2, P < 0.01 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 217, \text{ df } 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 34.50, df 2, P < 0.001 \text{ (Significant)}$$

Table 2 shows frequency distribution of medial phalangeal creases (main types) of digit II among Lodhis. It may be observed from the table that the highest frequency is shown by simple type of crease among males and females, it shows sinistral dominance among males, while it shows dextral dominance among females. Single type of crease shows more less same frequency among males and females. In case of composite type of crease it shows sinistral dominance among males and females. It may be concluded that the simple type of crease shows highest frequency among males and females and main types of medial phalangeal creases of digit II shows significant bimanual and bisexual variation.

**Table 3 : Frequency distribution of Medial Phalangeal crease (main types) of Digit III**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Single	Rt	27	26.47	23	22.54
		Lt	30	29.21	28	27.56
		<b>Total (Rt+Lt)</b>	<b>57</b>	<b>27.41</b>	<b>51</b>	<b>25.00</b>
2	Simple	Rt	56	54.90	54	52.94
		Lt	52	50.98	55	53.52
		<b>Total (Rt+Lt)</b>	<b>108</b>	<b>52.94</b>	<b>109</b>	<b>53.43</b>
3	Composite	Rt	19	18.63	25	24.52
		Lt	20	19.60	19	18.84
		<b>Total (Rt+Lt)</b>	<b>39</b>	<b>19.11</b>	<b>44</b>	<b>21.56</b>
	Total	Rt	102	100.0	102	100.0
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 31, df 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 93, df 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 31, df 2, P < 0.001 \text{ (Significant)}$$

Table 3 shows frequency distribution of medial phalangeal creases (main types) of digit III among Lodhis. It may be observed from the table that the highest frequency is shown by simple type of crease among males and females. It shows dextral dominance among males, and

sinistral dominance among females. The Single type of crease shows sinistral dominance among males and females. In case of composite type of crease, it shows sinistral dominance in males and dextral dominance among females. The composite type of crease shows more or less same frequency in right and left hands among males. It may be concluded that the simple type of crease shows highest frequency among males and females and all the main types of medial phalangeal creases of digit III shows significant bimanual and bisexual variation.

**Table 4 : Frequency distribution of Medial Phalangeal crease (main types) of Digit IV**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Single	Rt	19	18.63	21	20.58
		Lt	16	15.69	23	22.55
		<b>Total (Rt+Lt)</b>	<b>35</b>	<b>17.15</b>	<b>44</b>	<b>21.56</b>
2	Simple	Rt	62	60.78	59	57.85
		Lt	59	57.84	57	55.88
		<b>Total (Rt+Lt)</b>	<b>121</b>	<b>59.31</b>	<b>116</b>	<b>56.86</b>
3	Composite	Rt	21	20.58	22	21.56
		Lt	27	26.47	22	21.58
		<b>Total (Rt+Lt)</b>	<b>48</b>	<b>23.52</b>	<b>44</b>	<b>21.56</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	100.0	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 61, df 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 28, df 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 4, df 2, P > 0.1 \text{ (Insignificant)}$$

Table 4 shows frequency distribution of medial phalangeal creases (main types) of digit IV among Lodhis. It may be observed from the table that highest frequency is shown by simple type of crease among males and females, it shows dextral dominance among males and females.

The single type of crease shows dextral dominance among males and sinistral dominance among females. In case of composite type of crease, it shows sinistral dominance among the males. Among the females, it shows more or less same frequency in right and left hands. It may be concluded that simple type of crease shows highest frequency among males and females and the medial phalangeal creases of creases of digit IV shows significant bimanual and bisexual variation among males, while it shows insignificant bimanual variation among females.

**Table 5 : Frequency distribution of Medial Phalangeal crease (main types) of Digit V**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Single	Rt	23	22.54	19	18.63
		Lt	22	21.56	20	19.60
		<b>Total (Rt+Lt)</b>	<b>45</b>	<b>22.05</b>	<b>39</b>	<b>19.11</b>
2	Simple	Rt	64	62.74	62	60.78
		Lt	62	60.78	61	59.80
		<b>Total (Rt+Lt)</b>	<b>126</b>	<b>61.76</b>	<b>123</b>	<b>60.29</b>
3	Composite	Rt	15	14.70	21	20.58
		Lt	18	19.65	21	20.58
		<b>Total (Rt+Lt)</b>	<b>33</b>	<b>16.17</b>	<b>42</b>	<b>20.58</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 53, \text{ df } 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 7, \text{ df } 2, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 1, \text{ df } 2, P > 0.5 \text{ (Insignificant)}$$

Table 5 shows frequency distribution of medial phalangeal creases (main types) of digit V among Lodhis. It may be seen from the table that highest frequency is shown by simple type of crease among males and females. It shows dextral dominance among male, shows sinistral dominance among females. Single type of crease also shows more or less same frequency among males and females. In case of composite type of crease, it shows sinistral dominance among males and it shows more or less same frequency in both hands among females. It may be concluded that simple type of crease shows highest frequency among males and females. The medial phalangeal crease of digit V shows significant bisexual variation, and it shows significant bimanual variation among males, while it shows insignificant bimanual variation among females.

**Table 6 : Frequency distribution of various configurations of Medial Phalangeal Crease (sub types) of Digit I**

S. No.	Crease Types	Male		Female		
		Ab	Pc	Ab	Pc	
1	Straight	Rt	36	35.21	26	25.48
		Lt	29	28.43	28	27.46
		<b>Total (Rt+Lt)</b>	<b>65</b>	<b>31.65</b>	<b>54</b>	<b>26.47</b>
2	Open	Rt	8	7.84	12	11.76
		Lt	11	10.79	14	13.74
		<b>Total (Rt+Lt)</b>	<b>19</b>	<b>9.31</b>	<b>26</b>	<b>12.74</b>
3	Boat	Rt	12	11.77	7	6.86
		Lt	15	14.70	18	17.65
		<b>Total (Rt+Lt)</b>	<b>27</b>	<b>13.23</b>	<b>25</b>	<b>12.25</b>
4	Enclosure	Rt	21	20.58	23	22.55
		Lt	21	20.58	21	20.58
		<b>Total (Rt+Lt)</b>	<b>42</b>	<b>20.58</b>	<b>44</b>	<b>21.56</b>
5	Beaded	Rt	18	17.65	21	20.58
		Lt	16	15.69	19	18.63
		<b>Total (Rt+Lt)</b>	<b>34</b>	<b>16.86</b>	<b>40</b>	<b>19.60</b>
6	Feather	Rt	6	5.89	9	8.63
		Lt	7	6.86	7	6.86
		<b>Total (Rt+Lt)</b>	<b>13</b>	<b>6.37</b>	<b>16</b>	<b>7.84</b>
7	Mixed	Rt	1	0.98	4	3.92
		Lt	3	2.94	5	4.20
		<b>Total (Rt+Lt)</b>	<b>4</b>	<b>1.96</b>	<b>9</b>	<b>4.41</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 124, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 38, df 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 70.50, df 6, P < 0.001 \text{ (Significant)}$$

Table 6 shows frequency distribution of various configurations of Medial Phalangeal Creases (sub types) of digit I among Lodhis. It may be observed from the table that the highest frequency is shown by straight type of crease among males and females, while lowest frequency is shown by mixed type of crease among males and females. The straight type of crease shows dextral dominance among males and sinistral dominance among females. The Boat type and Open type of crease shows sinistral dominance among males and females. The Enclosure type of crease shows more or less same frequency in right and left hands among males and dextral dominance among the females. The Beaded type of crease shows dextral dominance among males and females. In case of feather type of crease it shows sinistral dominance among males dextral dominance among females.

It may be concluded from that the straight type of crease shows highest frequency among males and females. The medial phalangeal crease features of digit I show the significant bimanual and bisexual variation.

Table 7 shows frequency distribution of various configurations of Medial Phalangeal Crease (sub types) of Digit II among Lodhis. It may be observed from the table that the highest frequency is shown by straight type of crease among males and females. While the mixed type shows lowest frequency among males and females. The Straight type of crease shows dextral dominance among males and females. The Open type of crease shows sinistral dominance among females while and slight dextral dominance among males. Boat type of crease shows dextral dominance among males and female. The Enclosure type of crease shows sinistral dominance among males and the females. The Beaded type of crease configuration shows dextral dominance among the males and females. The feather type of crease shows sinistral dominance among males and females. The mixed type of crease configuration shows more or less same frequency in females, while it shows sinistral dominance among females.

It may be concluded from the table that the straight type of crease configuration shows highest frequency among males and females. The various crease configurations of medial phalangeal crease of digit II shows the significant bimanual and bisexual variation.



**Table 7 : Frequency distribution of various configurations of Medial Phalangeal Crease (sub types) of Digit II**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Straight	Rt	31	30.39	32	31.38
		Lt	27	26.46	26	25.48
		<b>Total (Rt+Lt)</b>	<b>58</b>	<b>28.43</b>	<b>58</b>	<b>28.43</b>
2	Open	Rt	11	10.78	11	10.78
		Lt	10	9.80	18	17.64
		<b>Total (Rt+Lt)</b>	<b>21</b>	<b>10.29</b>	<b>29</b>	<b>14.21</b>
3	Boat	Rt	15	14.70	14	13.73
		Lt	14	13.73	3	6.86
		<b>Total (Rt+Lt)</b>	<b>29</b>	<b>14.21</b>	<b>17</b>	<b>6.33</b>
4	Enclosure	Rt	18	17.65	15	14.70
		Lt	27	26.47	17	16.67
		<b>Total (Rt+Lt)</b>	<b>35</b>	<b>17.15</b>	<b>32</b>	<b>17.15</b>
5	Beaded	Rt	23	22.54	19	18.63
		Lt	17	16.67	15	14.70
		<b>Total (Rt+Lt)</b>	<b>40</b>	<b>19.60</b>	<b>34</b>	<b>16.66</b>
6	Feather	Rt	4	3.92	7	6.86
		Lt	5	4.90	12	11.77
		<b>Total (Rt+Lt)</b>	<b>9</b>	<b>4.41</b>	<b>19</b>	<b>9.31</b>
7	Mixed	Rt	2	1.96	5	4.90
		Lt	2	1.96	7	6.86
		<b>Total (Rt+Lt)</b>	<b>4</b>	<b>1.96</b>	<b>12</b>	<b>5.88</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 138, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 118, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 127.50, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

**Table 8 : Frequency distribution of various configurations of Medial Phalangeal Crease (sub types) of Digit III**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Straight	Rt	29	28.43	30	29.42
		Lt	32	31.37	28	27.45
		<b>Total (Rt+Lt)</b>	<b>61</b>	<b>29.90</b>	<b>58</b>	<b>28.43</b>
2	Open	Rt	7	6.86	7	6.86
		Lt	12	11.77	12	11.77
		<b>Total (Rt+Lt)</b>	<b>19</b>	<b>9.31</b>	<b>19</b>	<b>9.31</b>
3	Boat	Rt	11	10.79	11	10.79
		Lt	16	15.65	5	4.90
		<b>Total (Rt+Lt)</b>	<b>27</b>	<b>13.23</b>	<b>16</b>	<b>7.84</b>
4	Enclosure	Rt	23	22.54	19	18.63
		Lt	17	16.67	19	18.63
		<b>Total (Rt+Lt)</b>	<b>40</b>	<b>19.60</b>	<b>38</b>	<b>18.62</b>
5	Beaded	Rt	19	18.63	22	21.56
		Lt	14	13.73	23	22.54
		<b>Total (Rt+Lt)</b>	<b>33</b>	<b>16.17</b>	<b>45</b>	<b>22.05</b>
6	Feather	Rt	8	7.84	12	11.77
		Lt	8	7.84	9	8.83
		<b>Total (Rt+Lt)</b>	<b>16</b>	<b>3.92</b>	<b>15</b>	<b>7.35</b>
7	Mixed	Rt	5	4.90	9	8.83
		Lt	3	2.94	6	5.89
		<b>Total (Rt+Lt)</b>	<b>8</b>	<b>3.92</b>	<b>15</b>	<b>7.35</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 216.50, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 62, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 42, \text{ df } 6 P < 0.001 \text{ (Significant)}$$

Table 8 shows frequency distribution of various configurations of Medial Phalangeal Creases (sub types) of Digit III among Lodhis<sup>7</sup>. It may be observed from the table that the highest frequency is shown by straight type of crease among males and females. While mixed type of crease shows lowest frequency among males and females. The straight type of crease

shows sinistral dominance among males and dextral dominance among females. The Open type of crease shows sinistral dominance among males and females. The boat type of crease shows sinistral dominance among males, and dextral dominance among females. The Beaded type of creases shows dextral dominance among males, while it shows slight sinistral dominance among females. The Feather type of crease shows dextral dominance among females, while it shows more or less same frequency among males. The Mixed type of crease shows dextral dominance among males and females.

It may be concluded from the table that straight type of crease shows highest frequency among males and females. The result indicates significant bimanual and bisexual variation.

**Table 9 : Frequency distribution of various configurations of Medial Phalangeal Crease (sub types) of Digit IV**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Straight	Rt	37	36.37	24	23.53
		Lt	24	23.33	31	30.39
		<b>Total (Rt+Lt)</b>	<b>61</b>	<b>29.90</b>	<b>55</b>	<b>26.96</b>
2	Open	Rt	6	5.89	8	7.84
		Lt	12	11.77	10	9.80
		<b>Total (Rt+Lt)</b>	<b>18</b>	<b>8.82</b>	<b>18</b>	<b>8.82</b>
3	Boat	Rt	12	11.77	17	16.67
		Lt	19	18.63	12	11.70
		<b>Total (Rt+Lt)</b>	<b>31</b>	<b>15.19</b>	<b>29</b>	<b>16.17</b>
4	Enclosure	Rt	15	14.70	23	22.55
		Lt	18	17.65	25	24.51
		<b>Total (Rt+Lt)</b>	<b>33</b>	<b>16.17</b>	<b>48</b>	<b>23.52</b>
5	Beaded	Rt	21	20.58	23	22.55
		Lt	21	20.58	18	17.65
		<b>Total (Rt+Lt)</b>	<b>42</b>	<b>20.58</b>	<b>41</b>	<b>20.09</b>
6	Feather	Rt	7	6.86	4	3.92
		Lt	2	1.96	6	5.89
		<b>Total (Rt+Lt)</b>	<b>9</b>	<b>4.41</b>	<b>10</b>	<b>4.90</b>
7	Mixed	Rt	2	1.94	3	2.94
		Lt	6	5.96	9	8.83
		<b>Total (Rt+Lt)</b>	<b>8</b>	<b>3.92</b>	<b>12</b>	<b>5.88</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage  
 Chi Square value for Sex difference (both hands combined)  
 $\chi^2 = 137.50$ , df 6, P < 0.001 (Significant)  
 Chi square value for bimanual difference among males  
 $\chi^2 = 164.50$ , df 6, P < 0.001 (Significant)  
 Chi square value for bimanual difference among females  
 $\chi^2 = 73.50$ , df 6, P < 0.001 (Significant)

**Table 10 : Frequency distribution of various configurations of Medial Phalangeal Crease (sub types) of Digit V**

S. No.	Crease Types		Male		Female	
			Ab	Pc	Ab	Pc
1	Straight	Rt	32	31.37	29	28.43
		Lt	26	25.49	32	31.37
		<b>Total (Rt+Lt)</b>	<b>58</b>	<b>28.43</b>	<b>61</b>	<b>29.30</b>
2	Open	Rt	11	10.79	14	13.73
		Lt	11	10.79	11	10.79
		<b>Total (Rt+Lt)</b>	<b>22</b>	<b>10.78</b>	<b>32</b>	<b>15.68</b>
3	Boat	Rt	7	6.86	12	11.77
		Lt	21	20.58	18	17.65
		<b>Total (Rt+Lt)</b>	<b>28</b>	<b>13.72</b>	<b>30</b>	<b>14.70</b>
4	Enclosure	Rt	19	18.63	17	16.67
		Lt	19	18.63	15	14.70
		<b>Total (Rt+Lt)</b>	<b>38</b>	<b>18.13</b>	<b>32</b>	<b>15.68</b>
5	Beaded	Rt	20	19.60	18	17.65
		Lt	19	12.63	21	20.58
		<b>Total (Rt+Lt)</b>	<b>39</b>	<b>19.11</b>	<b>39</b>	<b>13.11</b>
6	Feather	Rt	11	10.79	11	10.79
		Lt	4	3.92	2	1.96
		<b>Total (Rt+Lt)</b>	<b>15</b>	<b>7.35</b>	<b>13</b>	<b>6.37</b>
7	Mixed	Rt	4	3.92	2	1.96
		Lt	2	1.96	3	2.94
		<b>Total (Rt+Lt)</b>	<b>6</b>	<b>2.94</b>	<b>5</b>	<b>2.45</b>
	Total	Rt	102	99.99	102	99.99
		Lt	102	99.99	102	99.99

\* Ab : Absolute number, \* Pc : Percentage

Chi Square value for Sex difference (both hands combined)

$$\chi^2 = 31.50, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among males

$$\chi^2 = 143, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Chi square value for bimanual difference among females

$$\chi^2 = 98.50, \text{ df } 6, P < 0.001 \text{ (Significant)}$$

Table 9 shows frequency distribution of various configurations of Medial Phalangeal Creases (sub types) of Digit IV among Lodhis. It may be observed from the table that the highest frequency is shown by straight type of crease among males and females, while the mixed type of crease configuration shows lowest frequency among males and females. Straight type of crease shows dextral dominance among males and sinistral dominance among females. The Open type of crease shows sinistral dominance among males and females. The Boat type of crease shows dextral dominance among the female, and more or less same trend in males. Enclosure type of crease shows sinistral dominance among the males and females. Beaded type of crease shows dextral dominance among females. The feather type of crease shows dextral dominance among males and sinistral dominance among the females. The mixed type of crease shows sinistral dominance among males and females. It may be concluded that the straight type of crease shows highest frequency in males and females. The various crease configurations of digit IV shows the significant bimanual and bisexual variation.

Table 10 show frequency distribution of various configurations of medial phalangeal crease (sub types) of Digit V among Lodhis. It may be observed from the table that the highest frequency is shown by straight type of crease among males and females. While the mixed type of crease shows lowest frequency among males and females. The Straight type of crease shows dextral dominance among males and sinistral dominance among females. The Open type of crease shows more or less same frequency in right and left hands of males and dextral dominance among females. The Boat type of crease shows sinistral dominance among males and females. Enclosure type of crease shows more or less same frequency among males but dextral dominance among females. The Beaded type of crease shows dextral dominance among males and sinistral dominance among females. Feather type of crease shows dextral dominance among males and females. The mixed type of crease shows dextral dominance among males and females. It may be concluded that the straight type shows highest frequency among males and females. The

various crease types configuration of digit V shows the significant bimanual and bisexual variation.

### **Summary and Conclusion:**

Summing up the observations related to bimanual and bisexual variation among Lodhis and may be concluded that :

1. The medial phalangeal crease (main type) of digit I shows highest frequency of single type of crease among males and females. It shows statistically significant bimanual and bisexual variation.
2. The medial phalangeal crease of digit II to V show highest frequency of simple type of crease among males and females.
3. The medial phalangeal crease digit (main type) of I, II, and III shows statistically significant bimanual and bisexual variation, while the digit IV and V shows insignificant bimanual variation among females.
4. The sub types of medial phalangeal crease shows highest frequency of straight type of configuration among males and females. While the mixed type of crease shows lowest frequency among males and females in both the hands .The all digit shows significant bimanual and bisexual variation.

It may be concluded that the medial phalangeal flexion creases (main type) of all the digits shows significant bimanual and bisexual variation among males and females, except digit IV and digit V of females shows insignificant bimanual. While all the sub types of medial phalangeal creases shows significant bimanual and bisexual variation in all the digits of males and females. Thus it may be stated that medial phalangeal creases may be applied in the ethnic as well as in bimanual and bisexual variation.

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