

The Occurrences of symmetrical and asymmetrical Terminations of Main Line D, C, B and A in Mohammedans of Rajasthan

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Introduction

During the visit to Barran (Rajasthan) in the month of April, 1960, I had the opportunity of collecting the bilateral palmar dermatoglyphic material on the Mohammedans of Rajasthan from Muslim primary school.

Physical features

In their physical features the Mohammedans of Rajasthan conform to the widely prevalent Mediterranean type in India. They exhibit medium stature, lighter skin, long heads with combination of longer face and prominent chin, prominent supra orbital ridges, with sunken nasal root and slightly hooked nasal bridge. The Mohammedan population consists of two sects, Shia and Sunni. In this paper the people of the Sunni sect only are taken.

Methods and material

This paper has the strength of 50 males and 50 females whose palmar prints are utilised to access whether there exists any symmetry or asymmetry as far as the termination of Main Lines D, C, B & A is concerned. The analysis of the data is done according to Cummins and Midlo (1943, pp. 84-109).

Symmetrical combinations of terminations of the main lines are those which are of the same position on the corresponding right and left hands, while asymmetrical are those, which are of different positions on the corresponding right and left hands. The frequencies of all possible combinations of termination — both symmetrical and asymmetrical — is determined separately for various pairs of corresponding main lines. These frequencies are found by actual counting only — actual frequencies (AF). Besides the frequencies of various combinations of terminations

which would have been met with — had their distribution been determined by chance frequencies (CF) have also been calculated. AF/CF ratio for each combination of termination and for various pairs of correspondig main lines have been calculated.

Analysis

Much of the time and efforts are devoted in finding the percentile frequencies of palmar main lines D, C, B and A of countless groups. Hardly any notice has been given to the symmetrical combination of termination of the main lines occurring on the homologous right and left hands. It is noted that there exists a tendency of symmetrical terminations in the right and left hands, although the asymmetrical terminations are not uncommon.

Table 1. Symmetry in palmar main line D. Occurrences of symmetrical terminations between the palmar Main Lines D, C, B & A in Mohammedan series (50 males and 50 females)

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
Line						
11/11	24.00	20.52	1.164	30.00	16.32	1.838
9/9	4.00	5.76	0.694	14.00	10.87	1.288
7/7	14.00	4.32	3.240	4.00	3.12	1.282
				t	=	1.244
				D-F	=	2

This table exhibits the figures for symmetrical terminations of palmar main line D in both sexes of the Mohammedan series. The most common symmetrical combinations are 11/11, 9/9 and 7/7. The occurrence of combination 11/11 is most common in general and in females it appears to be 30.00% as compared to 24.00% in males, indicating thereby that main line D terminates at higher positions more often in females than in males. The combination 9/9 is also more common in females, being 14.00% as compared to 4.00% in males. While combination 7/7 is more often found in males 14.00% as compared to females who exhibit it to be 4.00%. The range of AF-CF ratio in males is from 0.694 to 3.240, while in females it is between 1.282 to 1.838. It is observed that this ratio is inversely proportional to the value of CF, i.e. the lower the value of CF, the higher the value of AF-CF ratio. By applying 't' test it is observed that there exists no statistically significant difference in the two sexes.

This table shows the figures for symmetrical terminations of palmar main line C in both the sexes of the present series. The most common symmetrical combinations are 9/9, 7/7 and 5/5. The combination 9/9 is commonly met with. Its frequency is higher in males (30.00%) than in females (22.00%), indicating thereby that the main

Table 1A. Symmetry in palmar main line C

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
Line C						
9/9	30.00	19.84	1.551	22.00	12.96	1.697
7/7	8.00	4.80	1.666	10.00	6.00	1.666
5/5	14.00	4.32	3.250	4.00	3.36	1.190
					t = 0.649	
					D-F = 2	

line C terminates at higher position more often in males than in females. The frequency of combination 7/7 is slightly higher in females (10.00%) than in males (8.00%). The frequency of combination 5/5 is higher in males (14.00%) than in females (4.00%). The range of AF-CF varies between 1.551 and 3.240 in males, while in females it is between 1.666 and 1.190. The value of AF-CF ratio increases accordingly, as the value of CF decreases. The 't' test indicates that there exists no statistically significant difference between the two sexes.

Table 1B. Symmetry in palmar main line B

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
Line B						
7/7	28.00	21.84	1.282	22.00	12.96	1.697
5/5	28.00	20.80	1.346	40.00	29.00	1.379
3/3	0.00	0.00	0.000	0.00	0.00	0.000
					t = 0.640	
					D-F = 2	

This table presents the figures for symmetrical terminations of palmar main line B in the two sexes in the present series. The most common symmetrical combinations are 7/7, 5/5 and 3/3. Only the first two types of combinations are noticed on this main line. The frequency of termination 7/7 is higher in males (28.00%) as compared to females (22.00%), indicating thereby that the main line B terminates at higher position in males than in females. The frequency of combination 5/5 is higher in females (40.00%) than in males (28.00%). The range of AF-CF varies from 0.000 to 1.282 in males, and from 0.000 to 1.697 in females. The value of AF-CF ratio is indirectly

proportional to the value of CF. The value of 't' test indicates that there exists no statistically significant difference in the two sexes.

Table 1C. Symmetry in palmar main line A

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
Line A						
5/5	6.00	5.40	1.111	20.00	10.40	1.923
3/3	40.00	31.08	1.230	34.00	27.28	1.246
1/1	0.00	0.00	0.000	0.00	0.00	0.000
					t = 0.568	
					D-F = 2	

This table exhibits the figures for symmetrical terminations of palmar main line A in both the sexes of Mohammedan series. The most common symmetrical combinations are 5/5, 3/3 and 1/1. Only the first two types of symmetrical combinations are observed on this line, i. e. 5/5, and 3/3. The frequency of termination 5/5 is higher in females (20.00%) than in males (6.00%), indicating thereby that main line A terminates at higher positions in females more often than in males. The frequency of combination 3/3 is 40.00% in males, as compared to 34.00% in females. The range of AF-CF ratio varies between 0.000 to 1.280 in males, while females show it to go from 0.000 to 1.923. The value of CF has an indirect impact on the value of AF-CF. The value of 't' test indicates that there exists no statistically significant difference between the two sexes.

Table 2. Asymmetry in palmar main line A. Occurrences of asymmetrical terminations in palmar main line A in Mohammedan series (50 males and 50 females)

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
5/4	2.00	1.08	1.851	2.00	2.08	0.961
5/3	32.00	39.96	0.800	26.00	32.24	0.806
5/1	12.00	7.56	1.587	4.00	7.28	0.549
4/4	0.00	0.08	0.000	2.00	0.16	12.50
4/3	4.00	3.06	1.307	2.00	2.48	0.806
3/5	2.00	4.20	0.476	0.00	8.80	0.000
3/1	2.00	5.88	0.340	10.00	6.16	1.623
					t = 0.532	
					D-F = 6	

This table shows the various asymmetrical combinations as found on palmar main line A with their AF-CF ratio. The most common type of combination which shows the highest frequency is 5/3; 32.00% in males, as compared to 26.00% in females. The range of AF-CF ratio in males varies between 0.000 and 1.851, while females show it to go from 0.000 to 12.500%. When 't' is applied it is observed that there exists no statistically significant difference between the two sexes.

Table 3. Asymmetry in palmar main line B. Occurrences of asymmetrical terminations in palmar main line B in Mohammedan series (50 males & 50 females)

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
9/7	0.00	0.84	0.000	4.00	2.16	1.851
8/7	0.00	0.00	0.000	2.00	0.72	2.777
7/6	2.00	1.04	1.923	0.00	0.72	0.000
7/5	20.00	27.04	0.739	16.00	20.88	0.766
6/5	0.00	3.12	0.000	2.00	1.66	1.204
6/3	6.00	0.00	0.000	0.00	0.08	.000
5/7	16.00	16.80	0.714	4.00	18.00	0.222
5/6	0.00	0.80	0.000	2.00	1.00	2.000
5/4	4.00	1.60	2.500	0.00	0.00	0.000
5/3	0.00	0.00	0.000	4.00	2.00	2.000
0/7	0.00	0.00	0.000	2.00	1.44	1.319
0/5	0.00	0.00	0.000	2.00	2.32	0.861
					t = 1.761	
					D-F = 11	

This table exhibits the various asymmetrical occurrences on palmar main line B with their AF-CF ratio. The combination 7/5 is most common in general and it shows the higher frequency of 20.00% in males, as compared to 16.00% in females. The frequencies of various other combinations are noted in the table. The range of AF-CF ratio varies between 0.000 and 2.500 in males and between 0.000 and 2.777 in females. The value of 't' test indicates that there exists no statistically significant difference between males and females.

Main line C exhibits a higher number of asymmetrical combinations than it is the case with the rest of palmar main lines. Various asymmetrical combinations along with AF-CF ratio are mentioned in this table. The most common type of combination is 9/7. Its frequency is higher in males, being 22.00%, as compared to females (6.00%). The next common combination is 7/5 and this has a higher frequency in females (12.00%), as compared to 6.00% in males. The range of AF-CF ratio in males is from 0.000 to 50.000, while in females it is from 0.000 to 10.000. The 't' test indicates that there exists no statistically significant difference between males and females.

Table 4. Asymmetry in palmar main line C. Occurrences of asymmetrical termination in palmar main line C in Mohammedan series (50 males and 50 females)

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
11/9	0.00	0.64	0.000	4.00	2.16	1.851
11/5	2.00	0.80	2.500	0.00	1.20	0.000
11/5	0.00	0.48	0.000	2.00	1.68	1.190
10/9	0.00	0.00	0.000	2.00	0.72	2.777
9/7	22.00	24.80	0.887	6.00	7.20	0.833
9/5	4.00	14.88	0.268	2.00	10.08	0.198
9/X	2.00	1.24	1.612	4.00	2.88	1.388
7/9	0.00	3.84	0.000	4.00	10.80	0.370
7/6	0.00	0.00	0.000	2.00	0.60	3.333
7/5	6.00	2.88	2.083	12.00	8.40	1.428
7/X	0.00	0.24	0.000	2.00	2.40	0.833
7/0	0.00	0.24	0.000	2.00	1.80	1.111
6/9	0.00	1.28	0.000	2.00	1.44	1.388
6/7	2.00	1.60	1.250	0.00	0.80	0.000
6/5	2.00	0.96	2.083	2.00	1.12	1.785
5/9	0.00	5.76	0.000	2.00	4.32	0.463
5/7	6.00	7.20	0.833	2.00	2.40	0.833
5/X	0.00	0.36	0.000	2.00	0.96	2.083
0/7	0.00	0.80	0.000	2.00	2.00	1.000
0/5	0.00	0.48	0.000	2.00	2.80	0.714
0/0	2.00	0.04	50.000	6.00	0.60	10.000

t = 0.332
D-F = 20

This table exhibits the various asymmetrical combination on palmar main line D with their respective AF-CF ratio. The combination 11/9 shows the higher frequency of 18.00% in males as compared to 10.00% in females. The frequencies of various other combinations are noticed in the table. The range of AF-CF ratio in males varies between 0.000 to 2.083, while in females it varies between 0.000 to 3.125. The value of 't' test indicates that there exists no statistically significant difference between males and females.

Table 5. Asymmetry in palmar main line D. Occurrences of asymmetrical termination in palmar main line D in Mohammedan series (50 males & 50 females)

Combinations	Males			Females		
	AF	CF	AF-CF ratio	AF	CF	AF-CF ratio
11/10	6.00	3.24	1.234	2.00	1.92	1.041
11/9	18.00	17.28	1.041	10.00	15.36	0.651
11/7	2.00	12.96	0.154	4.00	12.48	0.320
11/0	0.00	0.00	0.000	2.00	0.96	2.083
10/9	4.00	1.92	2.083	2.00	0.64	3.125
10/7	2.00	1.44	1.388	0.00	0.52	0.000
9/11	10.00	6.84	1.462	2.00	11.56	0.173
9/10	0.00	1.08	0.000	2.00	1.36	1.470
9/8	0.00	0.00	0.000	2.00	0.68	2.941
9/7	6.00	4.32	1.388	14.00	8.84	1.583
8/11	2.00	1.52	1.315	0.00	1.36	0.000
8/9	0.00	1.28	0.000	2.00	1.28	1.562
8/7	2.00	0.96	2.083	2.00	1.04	1.923
7/11	0.00	6.84	0.000	2.00	4.08	0.490
7/9	6.00	5.76	1.041	4.00	3.84	1.041

t = 1.052
D-F = 14

Acknowledgements

The author is highly indebted to the Head of Muslim Primary School Barran (Rajasthan) who helped him in this research project. Special thanks are due to those who kindly co-operated in the collection of the prints.

Summary

The occurrence of symmetrical and asymmetrical combinations of termination of the palmar main lines has been studied. Symmetrical combinations are of the same type, while asymmetrical ones are of different types. Actual frequencies (AF) and chance frequencies (CF) of various combinations have been calculated.

1) Though various symmetrical combinations are found on palmar main line D, combinations 11/11 exhibits a higher frequency in both sexes. Similarly, palmar main line C shows a higher frequency of combination 9/9 in both sexes. Palmar main line B is remarkable for the absence of combination 3/3, while combination 7/7 is the most common. Palmar main line A is also remarkable for the absence of combination 1/1, while the most common combination found is 3/3.

2) The higher value of the AF-CF ratio shows a greater tendency to symmetrical combinations.

3) A strong tendency of repulsion is observed on the part of symmetrical combinations.

4) Chance frequencies (CF) can be calculated provided that the termination frequencies of various palmar main lines are known.

5) The value of AF-CF ratio is inversely proportional to the value of chance frequency (CF).

6) In all symmetrical and asymmetrical combinations examined with the 't' test no statistical significance has been found in either sex.

References

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RIASSUNTO

È stata studiata la frequenza delle combinazioni simmetriche ed asimmetriche delle terminazioni delle principali linee palmari. Combinazioni simmetriche sono quelle dello stesso tipo, asimmetriche di tipi diversi. Per le varie combinazioni vengono calcolate le frequenze reali (AF) e le frequenze casuali (CF).

1) Nonostante la presenza di varie combinazioni simmetriche nella linea principale D, la combinazione 11/11 presenta una maggiore frequenza in ambedue i sessi. Similmente, la linea principale C presenta una maggiore frequenza della combinazione 9/9 in ambedue i sessi. La linea principale B si distingue per l'assenza della combinazione 3/3, mentre la combinazione 3/3 è risultata più comune.

2) Il più alto valore del rapporto AF-CF indica una maggiore tendenza verso le combinazioni simmetriche.

3) Si è notata una forte tendenza contraria alle combinazioni asimmetriche.

4) Le frequenze casuali (CF) possono essere calcolate se si conoscono le frequenze delle terminazioni delle varie linee principali.

5) il valore del rapporto AF-CF è inversamente proporzionale al valore delle frequenze casuali.

6) Sia nelle combinazioni simmetriche che in quelle asimmetriche l'applicazione del test « t » non ha rivelato alcuna significatività né in un sesso né nell'altro.

RÉSUMÉ

L'étude concerne la fréquence des combinaisons symétriques et asymétriques des terminaisons des lignes palmaires principales. Les combinaisons symétriques sont de types diffé-

rents. Pour les diverses combinaisons les fréquences réelles (AF) et casuelles (CF) ont été calculés.

1) Malgré la présence de diverses combinai-

sons symétriques sur la ligne principale D, la combinaison 11/11 présente une fréquence plus élevée chez les deux sexes. De même, la ligne principale C présente une fréquence plus élevée de la combinaison 9/9 chez les deux sexes. La ligne principale B est caractérisée par l'absence de la combinaison 1/1, tandis que la combinaison 3/3 résulte la plus commune.

2) La plus haute valeur du rapport AF-CF indique une tendance plus marquée vers les combinaisons symétriques.

3) Une forte tendance contraire aux combinaisons asymétriques a été remarquée.

4) Les fréquences casuelles (CF) peuvent être calculées si les fréquences des terminaisons des diverses lignes principales sont connues.

5) La valeur du rapport AF-CF est inversement proportionnelle à la valeur des fréquences casuelles.

6) Dans les combinaisons symétriques ainsi que dans celles asymétriques, l'application du test « t » n'a révélé aucune signification statistique ni chez un sexe ni chez l'autre.

ERRATA CORRIGE

A. Ge. Me. Ge.

vol. XII - n. 4

R. Crismer, Ch. Drèze, P. Dodinval :

Iléite de Crohn chez des jumeaux univitellins

pag. 366, tableau: *groupes sanguins et sériques*.

Les jumeaux Pierre et Jacques sont tous deux k (Kell négatif), et non k et K, comme indiqué dans le texte.