CORRELATION OF DERMATOGLYPHICS WITH EMOTIONAL INTELLIGENCE AMONGST MEDICAL STUDENTS

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ABSTRACT

Background: Dermatoglyphics is the study of patterns of epidermal ridges on the volar surfaces of the skin. This is said to be associated with multiple intelligences in humans based on the fact that the neocortex and dermatoglyphic prints are developing simultaneously during embryogenesis and they are both genetically determined. Hence this cross-sectional observational study to correlate Emotional Intelligence and dermatoglyphic patterns.

A self-evaluating questionnaire was applied on 100 M.B.B.S students, fingerprints of whom were collected using 'Ink and Paper' method. The subjects were then categorized into two groups- Category A including subjects with EQ>120; and Category B including subjects with EQ<120. The collected fingerprints were categorized into Plain Arches, Tented Arches, Ulnar Loops, Radial Loops, Whorls and Composite. The data was then tabulated and observed for recurrence of patterns in each category of EQ and was statistically analyzed.

Results: In Category A, the most recurring pattern is Ulnar Loop. In Category B, the most recurring fingerprint pattern is Ulnar Loop in all digits except the L4 and R4 in which Whorl is the most recurring type. The chi square test of significance and exact test of association were applied and 'p' values were calculated and none of them were <0.05.

Conclusion: The results correspond with the observations made in a previous study correlating dermatoglyphics and IQ amongst medical students. Hence, the aforementioned results may be suggestive of some correlation between dermatoglyphics and EQ. However, the lack of statistical significance may be attributed to the modest sample size. Further research is required in this regard to validate the results of this study.

KEY WORDS: Emotional Intelligence, Emotional Quotient, Dermatoglyphics, EQ, Fingerprints, Fingerprint patterns.

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INTRODUCTION

Dermatoglyphics is the study of the characteristic ridge patterns on the volar surfaces of the skin. The first attempt at the systematic study of which can be credited to Francis Galton in 1892. He classified fingerprint patterns into three fundamental groups -Arches, Whorls and

Loops [1]. The term however, was coined by Harold Cummins of Tulane University, New Orleans in 1926 [2]. Dermal ridges have their developmental origin early in the fetal life, i.e., in the third month post-fertilization [3,4,5].

They are fully formed at birth and are unaffected by postnatal environmental factors or age.

Emotional Intelligence, equated to Interpersonal Intelligence, is one of the facets of multiple intelligences as described by Howard Gardner in, 'Frames of Mind: Theory of Multiple Intelligences'. Peter Salovey and John D Mayer coined the term Emotional intelligence and described it as 'The ability to monitor one's own and other's emotions, to discriminate between different emotions and label them appropriately and to use this information to guide thinking and behaviour'[6]. The concept was widely popularized by Daniel Goleman's "Emotional Intelligence-Why it can matter more than IQ"[7].

Emotional intelligence (EI) measured as Emotional Quotient (EQ), has been determined in this study, by a standardized questionnaire by Emily. A. Sterrett, which evaluates the six domains of Emotional Intelligence- Self Confidence, Self awareness, Social competency, Empathy, Motivation, and Self Control.

The formation of Fingerprints starts around week 12 of intrauterine life and completed by week 24[3]. This coincides with the embryological development of the neocortex. Extensive research by several neurobiologists in this regard has verified the correlation of fingerprints and CNS in humans. For example, Unusual Dermatoglyphics are often associated with mental disorders such as schizophrenia[8], autism[9] and Down's syndrome, Lissencephaly etc which involve developmental delays, difficulty in learning and behavioral disorders.

Several studies have been conducted in the past individually on Emotional Intelligence, dermatoglyphics and Correlating dermatoglyphics with the concept of IQ. [10,11]. But, Daniel Goleman proposes that Emotional intelligence matters more than IQ In determining success in career, relationships, leadership etc.[7] With professions that demand high emotional labor, Emotional Intelligence is of paramount importance. Especially in medical personnel in whom the ability to empathize with patients and good interpersonal skills undeniably adds to the performance in medical training and practice. Hence this study, to analyze the correlation between Emotional Intelligence and dermatoglyphics.

METHODS

The aforementioned cross-sectional study was

conducted in Employees' State Insurance Corporation Medical College and Post Graduate Institute of Medical Sciences and Research., Rajajinagar, Bangalore- 560 010 on 100 M.B.B.S. students from June 20th, 2015 to August 20th, 2015, after obtaining their informed and written consent. Ethical clearance was obtained from the Institutional Ethical Clearance Committee.

Our assessment of EQ was based on a standardized, self-evaluating questionnaire - Emotional Quotient Self-Assessment Checklist devised by Emily. A. Sterrett. Voluntary participants of the study were sensitized by a Psychiatrist to avoid bias, prior to the application of the questionnaire.

A questionnaire booklet was issued, including a consent form, a sheet with spaces for the collection of dermatoglyphic prints and the questionnaire. The prints and other data provided thusly were maintained strictly confidential. Subjects were provided with ample time for the completion of the questionnaire.

Following this, dermatoglyphic prints were collected by INK AND PAPER method wherein both hands of the subjects were cleaned with alcohol, then a mixture of glycerin and ink was applied over the fingers, and the impressions were collected on the writing paper by carefully rolling the fingers from radial side to ulnar side. The above method was selected as it is a simple, inexpensive, non-traumatic procedure with clarity of prints. **(Figure 1).**

EQ Self-assessment checklist: The questionnaire consists of 30 questions. Emotional Intelligence is said to consist of 6 domains- Self-confidence, Self awareness, Social competency, Empathy, Motivation, and Self Control. Each of the six Domains is evaluated separately in the questionnaire- which is to say 5 questions are specific to each domain. The subjects were instructed to enter a rating for each question in accordance with the **five point likert scale**.

Ratings were added for each category to obtain a total for that specific facet of E.I. Total score of Emotional Quotient (EQ) was obtained after adding the scores of all the domains. Thus, for every domain – minimum score is 5 and the maximum is 25. The minimum total score is 30 and maximum is 150. **(Figure 2, figure 3)**

The subjects were then categorized into two categories based on their TOTAL EQ score as follows: **Category A:** Includes subjects with Total EQ score more than 120 on a maximum of 150 ($EQ > 120$). **Category B:** Includes subjects with Total EQ score less than 120 on a maximum of 150 ($EQ < 120$).

The collected fingerprints of 100 subjects were then analyzed carefully with the help of an expert. The observations were then categorized into PLAIN ARCHES, TENTED ARCHES, ULNAR LOOPS, RADIAL LOOPS, WHORLS and COMPOSITE (including D-loops etc.)

The collected data was then observed for any recurring type of patterns in that specific category of EQ scores and was statistically analyzed.

Fig. 2: EQ SELF ASSESSMENT CHECKLIST- Standardized Questionnaire to determine Emotional Quotient devised by Emily. A. Sterrett.

QUESTIONNAIRE:

EQ SELF-ASSESSMENT CHECKLIST

Rate each question below on a scale of 1-5, according to how true it is of you.

1 2 3 4 5
Never rarely sometimes mostly always

- 1) I am aware of the physical reactions (twinges, aches, sudden changes) that signal a 'gut reaction'.
- 2) I readily admit mistakes and apologize.
- 3) I let go of problems, anger, or hurt from the past and I can move beyond them.
- 4) I generally have an accurate idea of how another person perceives me during a particular interaction.
- 5) I have several important things in my life that I am enthusiastic about, and I let it show.
- 6) I can easily meet and initiate conversation with new people when I have to.
- 7) I take a break or use another active method of increasing energy when I sense my energy level is getting low.
- 8) I have little trouble taking prudent risks.
- 9) I 'open up' with people appropriately – not too much, but enough so that I don't come across as cold or distant.
- 10) I can engage in an interaction with another person and assess their mood based on non-verbal signals.
- 11) I see that others are usually feeling inspired and encouraged after talking to me.
- 12) I have no trouble making presentations in front of groups or conducting meetings.
- 13) I take time every day for quiet reflection.
- 14) I take initiative and move ahead on tasks that need to be done.
- 15) I refrain from making up my mind on issues and expressing my opinion until I have all of the pertinent facts.
- 16) I have a number of people that I can turn to, and I ask for their help when I need it.
- 17) I try to find the positive in any given situation.

Fig. 1: Collection of Fingerprint patterns by 'INK AND PAPER' method.

Fig. 3: EQ SELF ASSESSMENT CHECKLIST- Standardized Questionnaire to determine Emotional Quotient devised by Emily. A. Sterrett.

18) I can deal calmly, sensitively, and proactively with the emotional displays of others.

19) I can usually identify the emotion I am feeling at any given moment.

20) I am generally comfortable in new situations.

21) I neither bury my anger nor let it explode onto others.

22) I can show empathy and match my feelings with those of another person during an interaction.

23) I can push ahead on a big project despite unforeseen obstacles.

24) I am respected and liked by others, even when they don't agree with me.

25) I am clear in regard to my own goals and values.

26) I express my viewpoint honestly and thoughtfully, without being pushy or critical.

27) I am adept at managing my moods, and seldom bring negative emotions to work.

28) I focus my full attention on others when I listen to them.

29) I believe the work I do day-to-day has meaning and value to society.

30) I can effectively persuade others to adopt my point of view without coercing them.

Scoring the Self-Assessment Checklist

Enter your rating for each numbered question in the category where it appears, then add the ratings for each category to obtain a total for that facet of EQ.

Self-Awareness:	Empathy:	Motivation:
1 _____	4 _____	5 _____
7 _____	10 _____	11 _____
13 _____	16 _____	17 _____
19 _____	22 _____	23 _____
25 _____	28 _____	29 _____
Total _____	Total _____	Total _____
Self-Confidence:	Self-Control:	Social Competency:
2 _____	3 _____	6 _____
8 _____	9 _____	12 _____
14 _____	15 _____	18 _____
20 _____	21 _____	24 _____
26 _____	27 _____	30 _____
Total _____	Total _____	Total _____

Fig. 4: Graph showing percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in subjects of CATEGORY A ($EQ > 120$).

Percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in the subjects of CATEGORY A ($EQ > 120$).

Table 1: Percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in subjects of CATEGORY A (EQ>120).

	L1	L2	L3	L4	L5	R1	R2	R3	R4	R5
ARCH	12.5	6.25	6.25	6.25	6.25	6.25	12.5	18.75	0	0
T. ARCH	0	6.25	0	0	0	0	0	0	0	0
U. LOOP	56.25	56.25	68.75	56.25	81.25	68.75	50	50	62.5	81.25
R. LOOP	0	0	0	0	0	0	0	0	0	0
WHORL	18.75	18.75	18.75	37.5	6.25	18.75	31.25	31.25	31.25	12.5
COMPOSITE	12.5	12.5	6.25	0	6.25	6.25	6.25	0	6.25	6.25
TOTAL	100	100	100	100	100	100	100	100	100	100

Table 2: Percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in subjects of CATEGORY B (EQ<120).

	L1	L2	L3	L4	L5	R1	R2	R3	R4	R5
ARCH	5.95	4.76	4.76	3.57	1.19	3.57	5.95	2.38	3.57	1.19
T. ARCH	0	5.95	7.15	1.19	1.19	0	3.57	0	0	1.19
U. LOOP	42.86	38.1	57.14	41.67	77.38	46.43	40.48	72.62	41.67	77.38
R. LOOP	2.38	11.9	1.2	0	1.19	1.19	7.14	0	0	0
WHORL	30.95	32.14	23.8	52.38	16.67	34.53	30.96	19.05	1.19	20.24
COMPOSITE	17.86	7.15	5.95	1.19	2.38	14.28	11.9	5.95	3.57	0
TOTAL	100	100	100	100	100	100	100	100	100	100

Fig. 5: Graph showing percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in subjects of CATEGORY B (EQ<120). **Table 3:** Descriptive statistics showing Mean and Standard deviation of Emotional Quotient in the study sample.

N	Minimum	Maximum	Mean	Standard Deviation
100	80	142	106.31	12.006

Fig. 6: Incidence of different types of fingerprint pattern in L1- Left Thumb Finger in both Category A and Category B.**L1- LEFT THUMB**

"p"-value: 0.617

Table 4: Incidence of different types of fingerprint pattern in L1- Left Thumb Finger in both Category A and Category B.

L1	EQ>120	EQ<120	TOTAL
ARCH	2	5	7
COMPOSITE	2	15	17
RADIAL LOOP	0	2	2
ULNAR LOOP	9	36	45
WHORL	3	26	29
TOTAL	16	84	100

Table 5: Chi square tests for L1- Left Thumb Finger .

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	2.657	4	0.617
Likelihood ratio	2.916	4	0.572
Number of valid cases	100		

Fig. 7: Incidence of different types of fingerprint pattern in L2- Left Index Finger in both Category A and Category B.**L2- LEFT INDEX FINGER**

"p"-value: 0.503

Table 6: Incidence of different types of fingerprint pattern in L2- Left Index Finger in both Category A and Category B.

L2	EQ>120	EQ<120	TOTAL
ARCH	1	4	5
COMPOSITE	2	6	8
RADIAL LOOP	0	10	10
T. ARCH	1	5	6
ULNAR LOOP	9	32	41
WHORL	3	27	30
TOTAL	16	84	100

Table 7: Chi square tests for L2- Left Index Finger.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	4.332	5	0.503
Likelihood ratio	5.865	5	0.32
Number of valid cases	100		

Fig. 8: Incidence of different types of fingerprint pattern in L3- Left Middle Finger in both Category A and Category B.**L3- LEFT MIDDLE FINGER**

"p"-value: 0.869

Table 8: Incidence of different types of fingerprint pattern in L3- Left Middle Finger in both Category A and Category B.

L3	EQ>120	EQ<120	TOTAL
ARCH	1	4	5
COMPOSITE	1	5	6
RADIAL LOOP	0	1	1
T. ARCH	0	6	6
ULNAR LOOP	11	48	59
WHORL	3	20	23
TOTAL	16	84	100

Table 9: Chi square tests for L3- Left Middle Finger.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	.1.851	5	0.869
Likelihood ratio	2.951	5	0.708
Number of valid cases	100		

Fig. 9: Incidence of different types of fingerprint pattern in L4- Left Ring Finger in both Category A and Category B.**L4- LEFT RING FINGER**

"p"-value: 0.760

Table 10: Incidence of different types of fingerprint pattern in L4- Left Ring Finger in both Category A and Category B.

L4	EQ>120	EQ<120	TOTAL
ARCH	1	3	4
COMPOSITE	0	1	1
T. ARCH	0	1	1
ULNAR LOOP	9	35	44
WHORL	6	44	50
TOTAL	16	84	100

Table 11: Chi square tests for L4- Left Ring Finger.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	1.867	4	0.76
Likelihood ratio	2.159	4	0.707
Number of valid cases	100		

Fig. 10: Incidence of different types of fingerprint pattern in L5- Left Little Finger in both Category A and Category B.**L5- LEFT LITTLE FINGER**

"p"-value: 0.583

Table 12: Incidence of different types of fingerprint pattern in L5- Left Little Finger in both Category A and Category B.

L5	EQ>120	EQ<120	TOTAL
ARCH	1	1	2
COMPOSITE	1	2	3
RADIAL LOOP	0	1	1
T. ARCH	0	1	1
ULNAR LOOP	13	65	78
WHORL	1	14	15
TOTAL	16	84	100

Table 13: Chi square tests for L5- Left Little Finger.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	3.77	5	0.583
Likelihood ratio	3.707	5	0.592
Number of valid cases	100		

Fig. 11: Incidence of different types of fingerprint pattern in R1- RIGHT THUMB FINGER in both Category A and Category B.**R1- RIGHT THUMB**

"p"-value: 0.081

Table 14: Incidence of different types of fingerprint pattern in R1- RIGHT THUMB FINGER in both Category A and Category B.

R1	EQ>120	EQ<120	TOTAL
ARCH	1	3	4
COMPOSITE	1	12	13
P. WHORL	1	0	1
R. LOOP	0	1	1
ULNAR LOOP	11	39	50
WHORL	2	29	31
TOTAL	16	84	100

Table 15: Chi square tests for R1- RIGHT THUMB FINGER.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	9.791	5	0.081
Likelihood ratio	8.862	5	0.115
Number of valid cases	100		

Fig. 12: Incidence of different types of fingerprint pattern in R2- RIGHT INDEX FINGER in both Category A and Category B.**R2- RIGHT INDEX FINGER**

"p"-value: 0.666

Table 16: Incidence of different types of fingerprint pattern in R2- RIGHT INDEX FINGER in both Category A and Category B.

R2	EQ>120	EQ<120	TOTAL
ARCH	2	5	7
COMPOSITE	1	10	11
RADIAL LOOP	0	6	6
T. ARCH	0	3	3
ULNAR LOOP	8	34	42
WHORL	5	26	31
TOTAL	16	84	100

Table 17: Chi square tests for R2- RIGHT INDEX FINGER.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	3.219	5	0.666
Likelihood ratio	4.564	5	0.471
Number of valid cases	100		

Fig. 13: Incidence of different types of fingerprint pattern in R3- RIGHT MIDDLE FINGER in both Category A and Category B.**R3- RIGHT MIDDLE FINGER**

"p"-value: 0.039

Table 18: Incidence of different types of fingerprint pattern in R3- RIGHT MIDDLE FINGER in both Category A and Category B.

R3	EQ>120	EQ<120	TOTAL
ARCH	3	2	5
COMPOSITE	0	5	5
ULNAR LOOP	8	61	69
WHORL	5	16	21
TOTAL	16	84	100

Table 19: Chi square tests for R3- RIGHT MIDDLE FINGER.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	10.104	4	0.039
Likelihood ratio	8.642	4	0.071
Number of valid cases	100		

Fig. 14: Incidence of different types of fingerprint pattern in R4- RIGHT RING FINGER in both Category A and Category B.**R4 - RIGHT RING FINGER**

"p"-value: 0.359

Table 20: Incidence of different types of fingerprint pattern in R4- RIGHT RING FINGER in both Category A and Category B.

R4	EQ>120	EQ<120	TOTAL
ARCH	0	3	3
COMPOSITE	1	3	4
ULNAR LOOP	10	35	45
WHORL	5	43	48
TOTAL	16	84	100

Table 21: Chi square tests for R4- RIGHT RING FINGER.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	3.222	3	0.359
Likelihood ratio	3.684	3	0.298
Number of valid cases	100		

RESULTS

Total EQ Scores of 100 subjects of the age group 18 to 21 years, were calculated and categorized as mentioned above. Fingerprints were categorized into Plain arches, Tented arches, Ulnar loops, Radial loops, Whorls and Composite (including D-loops etc.)

The observations were then tabulated. (Table 1, Figure 4, Table 2, Figure 5)

Table 1, Figure 4 shows the percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in subjects of **CATEGORY A (EQ>120)**.

Table 2, Figure 5 shows the percentage incidence of each type of fingerprint pattern in each of the ten digits, as seen in subjects of **CATEGORY B (EQ<120)**.

Fig. 15: Incidence of different types of fingerprint pattern in R5- RIGHT LITTLE FINGER in both Category A and Category B.**R5- RIGHT LITTLE FINGER**

"p"-value: 0.193

Fingerprint pattern.

Table 22: Incidence of different types of fingerprint pattern in R5- RIGHT LITTLE FINGER in both Category A and Category B.

R5	EQ>120	EQ<120	TOTAL
ARCH	0	1	1
COMPOSITE	1	0	1
T. ARCH	0	1	1
ULNAR LOOP	13	65	78
WHORL	2	17	19
TOTAL	16	84	100

Table 23: Chi square tests for R5- RIGHT LITTLE FINGER.

	Value	df	Asymp. Sig (2-sided)
Pearson Chi square	6.08	4	0.193
Likelihood ratio	4.86	4	0.302
Number of valid cases	100		

On observation, it is evident that ULNAR LOOP is the most common type of fingerprint pattern, followed by WHORLS.

In Category A, as seen from **Table 1, Figure 4** the most recurring fingerprint pattern is ULNAR LOOP in all the digits followed by WHORLS and the least recurring pattern is RADIAL LOOP.

In Category B, as seen from **Table 2, Figure 5** the most recurring fingerprint pattern is ULNAR LOOP in all the digits, with the EXCEPTION of L4- Left ring finger and R4- Right ring finger in which WHORL is the most recurring type of fingerprint pattern with the percentage incidence of 52.38% and 51.19% respectively.

Statistical analysis was done using SPSS version 20.

Descriptive Statistics: Table 3 shows that the Mean Emotional Quotient Score Of the StudySample is 106.31 and Standard Deviation is 12.006.(Table 3)

Inferential Statistics: For inferential statistics, Pearson and Likelihood ratio chi-square test of significance and Exact test of association were applied for each digit, for associating Dermatoglyphics patterns and EQ. **“p”-value of less than 0.05 was considered statistically significant.**

(Figure 6, Table 4. Table 5, Figure 7, Table 6, Table 7, Figure 8, Table 8, Table 9

Figure 9, Table 10. Table 11, Figure 10, Table 12, Table 13, Figure 11, Table 14, Table 15, Figure 12, Table 16, Table 17, Figure 13, Table 18, Table 19, Figure 14, Table 20, Table 21, Figure 15, Table 22 Table 23).

Furthermore, the Chi-square test of significance and exact test of association were also applied by merging the values of some of the minority patterns i.e., Arch and T-arch and composite and Radial Loops since their individual contributions were not that significant and subsequently, p-values were calculated. None of them were less than 0.05. **Therefore, the data is said to bear no statistical significance.**

DISCUSSION

In the recent years, Emotional intelligence has been increasingly made reference to and extensively researched on. Various studies have been conducted in the recent past to determine Emotional Quotient of medical students by Smrithi Shetty C et al. in 2013, by Abhijeet Faye et al. in 2011 and by Kavana G et al. [12,13,14]. The mean EQ of the study sample is 106.3 ± 12.006 which is almost consistent with the results obtained in similar studies.

Ulnar loop was found to be the most common type of fingerprint pattern. This observation is in agreement with the results of two previously published papers on the distribution of fingerprint patterns among medical students by Tanuj Kanchan et al, in 2006 and by Amit .A. Mehta et al. in 2015 which established that loops as the most recurring fingerprint pattern among medical students. [15,16] This can explain the recurrence of ulnar loop as the most common fingerprint pattern in both categories A and B.

However, the appearance of WHORL as the most recurring fingerprint pattern in CATEGORY B (EQ<120) on L4- Left ring finger and R4- Right

ring finger with the percentage incidence of 52.38% and 51.19% respectively may be suggestive of some co-relation between Dermatoglyphic pattern and EQ Score. Similar observation was made in a study correlating dermatoglyphics and IQ among Medical students (assumed to have more IQ based on a common competitive exam) and Medical lab technician students (assumed to have lesser IQ), by Dr. K. Lakshmi Kumari et al. in which more number of Whorls was seen in students pursuing lab technician course than in the former [10].

On application of Chi-square test and Exact test of association and calculation of “p” values for each digit it was observed that all the values of “p” were more than 0.05 (Not statistically significant), except that of Right Middle Finger (R3) with “p”-value of 0.039, which was statistically significant.

CONCLUSION

This study reports that the average EQ score amongst the medical students included in the study group is 106.3 ± 12.006 with only 16% of the population having EQ of more than 120 and 84% of the population having scores less than 120 on a total of 150. This indicates a gross need for overall improvement of Emotional Intelligence in the population studied because it is imperative for medical students to possess good EQ, since it indicates good interpersonal skills with their patients and their families, their peers, superiors and subordinates; their ability to cope with the several challenges which contribute to their success, academic and otherwise.

Ulnar Loop is the most common fingerprint pattern among Medical students. The most recurring fingerprint pattern among people with a good EQ score (Category A) i.e., EQ>120 (on a total of 150), is Ulnar Loop. The most recurring fingerprint pattern among people with EQ score that requires improvement (Category B) i.e., EQ<120 (on a total of 150), is also Ulnar Loop except on the Fourth digit of both right and left hands in which the most recurring fingerprint pattern is Whorl.

The lack of statistical significance however may be attributed to the modest sample size of this study. This preliminary study can be extended to include a larger study sample of medical

students belonging to other schools and further, other populations to validate the results of this study.

ABBREVIATIONS

IQ- Intelligence Quotient.

EQ- Emotional Quotient.

CNS- Central Nervous System.

MBBS- Bachelor of Medicine, Bachelor of Surgery.

EI- Emotional Intelligence.

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