

Narco Analysis Test - A Boon to Criminal Investigation Process - A Critical Analysis

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Abstract

The primary intention behind using of the narco analysis test is the extraction of information from an uncooperative individual. Narco analysis was earlier used as a therapy to treat psychological is associated with battles. Today, it is accepted test having legal, clinical and ethical consequences. This article attempts to critically investigate whether it a boom to the criminal investigation process and the acceptance of the same by citing various legal issues, its relevance to the Indian Constitution which guarantee the right to privacy and with reference to the Indian Evidence Act deals with the right against self-incrimination and the human rights act.

Keywords: Narco analysis test, ethical consequences, Indian Constitution, Evidence act, Human Rights act.

1. Introduction

Narco-analysis as a term has its derivation from the Greek word “narke” meaning “torpor” or “anesthesia” or. The need for finding out right information has always been felt through an effective mechanism of interrogation and narco-analysis is accepted as an effective modern tools with the help of which crimes could be investigated wherein, the accused is brought to a hypnotic state and the experts pose carefully structured questions to the accused. On account of being in such a state, it becomes impossible for the accused to come up with false answers and is made to without any effort express the suppressed truth from his sub-conscious mind. The primary intention behind using of the test is thus extraction of information from an uncooperative individual. Narco analysis was earlier used as a therapy to treat psychological trauma associated with battles. Today, it is accepted test having legal, clinical and ethical consequences.

2. Procedure For Conductof Narco Analysis Test

Narco analysis test includes the usage of “thiopentone” or “sodium pentothal” which is more commonly referred to as “the truth serum”. However, the quantum of sodium pentothal to be given to the patient varies one to another. In any normally circumstances, the ideal dosage to be injected would be sodium pentothal amounting to three grams diluted in distilled water of 3000ml., together with 10 percentage of solution of dextrose administered to the patient over three hours in the presence of an anesthetist. This results in making the patient reach a state of being dissociative but not fully anaesthetised. This way, his level of consciousness is maintained along with a constant monitoring of the heartrate and blood pressure of the patient being carried out. One it is assured that the patient has reached this stage, curated questions are repeated asked and the responses are duly recorded. Though the accuracy and reliability of this test is questionable and has been highly debated, experts are of the opinion that this serves as the only way through which maximum truth could be extracted.

3. Legal Issues Involved In Narco Analysis Test

The most significant legal issues involved in narco analysis test are,

1. Constitutionality of Narco analysis test.
2. Violation of “substantive due process”.
3. Admissibility of the information given by a person who is semi-conscious.

4. Narco Analysis Test And The Law In India

4.1 Indian Constitution

One of the major issues involved in administering the test is that it intrudes into the mental privacy of an individual. Though the Indian constitution does not guarantee the right to privacy, it can be recalled that with respect to the judgment passed in *KharakSingh vs State of Uttar Pradesh*¹, Supreme Court has recognised one's right to one's privacy as a fundamental right. In *K.S.Puttaswamy vs Union of India* in August 2017, the Supreme Court has again upheld the right to privacy as a fundamental right under Article 21. This being in the case, it can now be taken for granted that the right to privacy is guaranteed under the ambit of Article 21 as personal liberty. Thus, in case the test is carried out involuntarily, it would amount to violation of the right to privacy. The same was held by the Supreme Court in *Selvi & Ors vs State of Karnataka & Anr* on 5 May, 2010. It has been upheld that just like test to check polygamy and mapping of the brain, narco analysis test is unconstitutional and hence void, if it is done, involuntarily. In spite of the judgment, there are incidents where the investigating agencies have used narco analysis tests. It is also important to note that law itself imposes certain restriction on personal liberty. For instance, criminal procedure code contains procedure for arrest, detention, search, interrogation etc. courts can also order for a medical investigation of an individual as it is "reasonably necessary".

Yet another vital issue related to the test is against the right of self-incrimination as being guaranteed under Article 20(3) of Indian constitution which says "no person accused of any offence shall be compelled to be a witness against himself". This being the case, the underlying fact is that the right against self-incrimination should both ensure how reliable is the statement made by the accused and that they are made voluntarily. During process of investigation, it may so happen that the suspect may have been put to coercion or may be threatened or tortured to make statement against himself. If the statements are not true, it would naturally lead to misleading the judgements. But when it comes to narco analysis test whether taken voluntarily or involuntary under compulsion, the confession made by the patient cannot be false as it is expressed from his sub-conscious mind. It can be taken that it helps in bringing out the guilt or innocence of the patient with maximum accuracy.

The term "witness" under Article 20(3) has been a subject matter of much judicial debate. In the case relating to *M.P. Sharma vs. Satish Chandra and others* it has been observed that the term "witness" in its natural sense should be understood to mean a person who furnishes evidence which could either be given orally or as a documentary evidence or showing making gesture which are intelligible in the case of a dumb witness. The court further observed that the production of any document in compliance with a notice cannot be taken as a case of compelled production. It is to be considered as a reference act of the person. It has further clarified that the privilege under Clause 3 of Article 20 will apply only to an accused and in case he has chosen to make any confession without any threat, then Article 20(3) would not be applicable. If done under compulsion, then it would be treated as amounting to violation of Article 20(3) and Article 21 of the Indian constitution. Further, the court was silent with respect to giving handwriting, finger print, thumb impression, blood test etc. Finally, in the *State of Bombay vs Kathu* the court has passed a judgment that submission of thumb impression or impression of palm or foot print or finger print or handwriting samples or exposing a part of the body by an accused person for identification purpose are not included in the expression "to be a witness" and the same cannot be taken to be equivalent to "furnishing evidence".

In order to attract Article 20(3), compulsion should be with respect to giving or providing evidence against oneself. In *Kalawati vs State of H.P.*, it has been observed that the Article 20(3) will not be applicable in case it has been found that confession was made by an accused without the interference of any promise, inducement or threat.

On the other hand it has to be remembered that the “right to remain silent” is also guaranteed under the Indian constitution by the virtue of assertion made in the judgment of Nandini Sathpathy vs P.L.Dani.

4.2 Criminal Procedure Code 1973

Section 161(2) of criminal procedure code provides for right against self-incrimination which means that “every person is bound to answer truthfully all questions put to him by a police officer, other than questions, the answer to which could have a strong tendency to expose that person to a criminal charge, penalty or forfeiture”. This section provides protection for accused, suspects as well as witnesses who are examined during an investigation.

Section 156(1) of criminal procedure code provides for police officer’s power to investigate cognizable cases. It states that “any officer in charge of a police station without the order of a magistrate can investigate any cognizable case which a court has power to inquire into or try under the provisions of chapter XIII”.

4.3 Indian Evidence Act 1872

Section 25 to 27 of the Indian Evidence Act deals with the right against self-incrimination. Section 25 of the above Act states “No confession made to a police-officer, shall be proved as against a person accused of any offence”.

Section 26 of the act states that “any confession made by a person while in he being in custody of a police officer, unless the confession is made in the presence of a magistrate, shall be proved as against such person”.

Section 27 states that “when any fact is deposed to as discovered in consequence of information received from a person accused of any offence, in the custody of a police-officer, so much of such information, whether it amounts to a confession or not, as relates distinctly to the fact thereby discovered, may be proved”.

Thus, it is evident from section 27 that, any furnishing of information by an accused person after he being arrested to any investigating officer which could lead to the unearthing of any article, is to be taken as an admissible evidence and will not in any way violate article 20(3), because such an accused person cannot be said to have been compelled to be a witness against himself just because he made a statement in police custody, without anything more.

4.4 Human Rights Law

Human rights activists have put forth arguments that narco analysis or polygraph test or brain mapping are violation of human rights as it invades privacy of an individual and if such test is conducted by compulsion it encroaches personal liberty.

Article 5 of the universal declaration of human rights observes that “no one shall be subjected to arbitrary interference with his privacy, family, home or corresponds nor to attack upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks”.

The protection of the Human Rights Act, 1993 defines the term “Human rights” under section 2 (d), according to which “human rights means rights relating to life, liberty, equality and dignity of the individual guaranteed by the constitution or embodied in the International covenant and enforceable by courts in India”

4.5 National Human Rights Commission's Guidelines On Administration Of Lie Detector Test.

The national human rights commission had published 'guidelines for the administration of polygraph test on an accused in 2000. These guidelines are to be strictly followed and the same guidelines applies to narco analysis test and brain mapping. The guidelines are,

1. An option should be given to the accused either to undertake or not to undertake the test. The test should be conducted only with the consent of the accused.
2. If the accused volunteers for the test, he should be given access to a lawyer. All the implications of the test should be clearly explained to the accused.
- 3 Recording of consent is to be done in the presence of the magistrate.
4. In the process of conducting the hearing in before the magistrate, a lawyer should duly represent the person who has alleged to have agreed.
5. The person whose hearing is going on should be categorical informed that the statement made by him shall not be treated as a "confession statement" made to the magistrate but will be viewed as a statement just like the one made to the police.
6. All vital aspects in relation to detention of the person including, length of detention and nature of the interrogation shall be noted by the magistrate.
7. A hospital could be appointed as an independent agency to conduct the test in the presence of lawyer who should also be entrusted with the work of carrying out the actual recording of the lie detector test

Narco analysis test reports has some validity but its not totally admissible in court. Results of such tests can be used to obtain admissible evidence and it can be a supportive evidence. But if the result of such test is not admitted in a court, then in cannot be used to support any other evidence.

5. View Of Indian Judiciary On Narco Analysis Test

In India narco analysis test was first used in 2002 in the Godhra carnage train burning case. And then later it was conducted in Telgi stamp paper scam in December 2003. In Ramachandra Ram Reddy vs State of Maharashtra, the court is of the opinion that only statements that inculcate a person will attract the bar of Art 20(3) and through narco analysis test only a testimony is being derived. Hence it does not violate art 20(3). In Dinesh Dalmia vs State Madras High court observed that "Narco analysis would not amount to breaking silence by force". In Rojo George vs Deputy Superintendent of Police, the court allowed Narco analysis test and expressed its view that modern crimes need modern investigation. In Santokben Sharmabhai Jadeja vs State of Gujarat, the court allowed Narco analysis test and said it should be used as a last resort. In Dharampal vs State, court expressed its view that, no one can withhold criminal information and escape from social responsibility by avoiding such information in the name of "privacy". In State of Gujarat vs Anirudh singh, Supreme court held that "it is the statutory duty of every witness who has knowledge about a crime to assist the state in giving evidence.

6. Conclusion

It is clear that Indian Judiciary keeps oscillating back and forth regarding Narco analysis test. Courts adopted conditional utilization and harmonious construction in Narco analysis process, as it cannot be completely shunned nor it can be used in every given cases. Judiciary is attempting to strike a balance between social interest and individual interest. Through allowing Narco analysis, innocence of an accused can also be proved. Using third degree treatments in investigation is violation of human rights which is far worse than narco test. The questions will be framed in such a way that possibility of false evidence is less. Even though reliability is still debated these information can be used as corroborative evidence.

7. Methodology

The present study was carried out in Amity Institute of Forensic Sciences, Amity University, Noida, Uttar Pradesh, India. In this study, 100 samples including males and females were collected from the population of Northern part of India. All the samples were selected by adopting simple random sampling method from an age group of 12-65 years respectively and collected in May-June 2019.

Material and method

Before the sample collection, all subjects were informed about the objective of this study and their oral consent was appropriated. All the subjects were asked to clean their palmar surface by using hand Sanitizer (as per availability) or to wash their hands to control over the deposition process and instructed to dry by using any clean cloth. After this process, subjects were instructed to sit for 20-30 minutes at room temperature. Now, subjects were asked to implement their hands against the plain A4 size white paper sheer of 75 GSM. By confirming the deposition of inherited palmar prints on paper, all sheets were kept were preserved at room temperature (32°C) for next 36 hours. The room temperature were note down to observe the effect of temperature over deposition of inherited prints and deposition of organic/inorganic materials i.e. amino acids, fatty acids, salts etc. For the intensification process of palm prints, all inherited samples were directed to easily available, inexpensive and traditional method -black powder. Since the inherent prints are subjected to distortion, smudged or affected due to the environmental and allied factors i.e. temperature, humidity, rainfall, etc. Hence, all intensified samples were preserved in white or brown paper envelope to avoid any contamination or distortion of samples¹³.

Instrumentation requirement

As per the objective of this study, all the intensified prints were specified from several analyzed points of palmar surface. The dimensions of ridges were counted from 9 mm² area. For the preliminary omnipresence of ridges, hand lens with a capacity of 10 X magnification was used. In addition of it, the dimensions between the rides was analyzed and measured by using stereomicroscope and the micro-meter. Although the pattern at looked the anatomic features of the ridges also can be visualized using a stereomicroscope 10x magnification. The magnified palmar prints are given below in figure no. 1 (a) &1 (b) below-

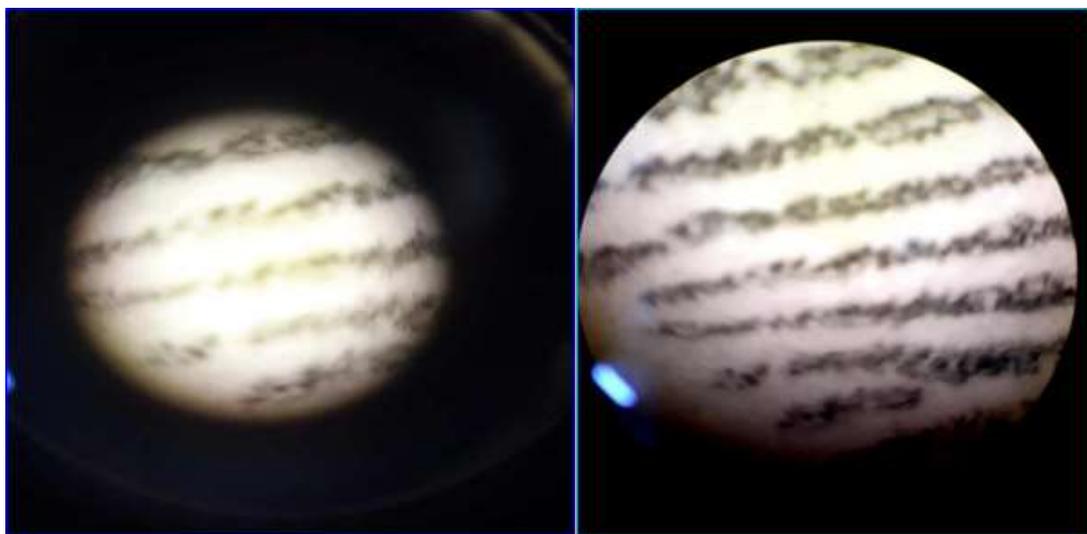


Figure 1 (a)

figure 1 (b)

Fig 1 (a) &1 (b): Ridges of the palm print observed under 10x magnification in stereomicroscope (a) male (b) female

Stereomicroscope of 500 X magnification provides the details of intensified ridges which also facilitate to identify and detect the tiny information of third level details (pores, shape and size). The micro-meter having the scales of 0-100 which the 100 parts of 1mm is utilized to determine the thickness value of the ridges

Statistical Analysis

The statistical T-test is also performed to test the differences or the variations between the males and females significantly. The interpretation of the value is based on the t score which is the ratio between two ridge's difference of male and females. The variance is also utilized in the study and to determine the differences between the individuality a statistical correlation coefficient is used¹⁴.

$$\text{Test Statistic of Unpaired Samples} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

where

$$s^2 = \frac{\sum_{i=1}^{n_1} (x_i - \bar{x}_1)^2 + \sum_{j=1}^{n_2} (x_j - \bar{x}_2)^2}{n_1 + n_2 - 2}$$

Correlation Coefficient Formula

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

The correlation measures the degree to which two variables move in relation to each other. The collected data were analyzed using the formula of correlation coefficient as mentioned below:

Where, n = no. of samples, x and y represents the subject (male & female)

The various statistical methods were used in this study such as standard deviation, variance, mean, T-test and the correlation coefficient.

8. Result And Discussion

The exploration of the inherent prints was performed under stereomicroscope at 10x magnification for visualization of ridges pores and dimensions. In the requirement of higher magnification, stereoscope with 500 X magnification can be utilized. This will enable us to identify and detect tiny pores and their relative positions, which are unique. The micro-meter having the scales of 0-100 which the 100 parts of 1mm is utilized to determine the thickness value of the ridges in an area of 9 mm².¹⁵. Several studies and researches have been conducted on the density of ridges between male and female but the dimension between the ridges of the fingerprint and the proximal region of the palm prints has to be determined yet. In this study, the ridge count was performed in distinct parts of palmar surface i.e. right thumb, right index, right middle, right ring and the right little prints ridges and the correlation with respect to the gender and the age were calculated. The possible outcome inference after the derivation among both of genders from various analysed points are given below in table no.1 below-

Analysed point	Mean values of male subjects	Standard Deviation	Mean values of female subjects	Standard Deviation
Palm (Hypothenar)	5.08	1.2094	3.78	2.4014
Right Thumb	4.6	2.1665	3.82	2.7381

Right Index	4.88	1.8913	3.46	2.5810
Right Middle	5.1	2.1499	3.54	2.9569
Right Ring	4.36	2.2293	3.36	2.6784
Right little	4.54	2.1779	3.36	2.6077

Table no.1; the obtained mean values of ridge from various analysed points of palmar surface of both genders.

As per discussion, the examination was performed in the right hand for both of genders of palmar surface. The analysed performance of subjects are given below in table no 2-

Analysed point	variance values of male subjects	variance values of female subjects
Palm (Hypothenar)	1.4628	5.7669
Right Thumb	4.6938	7.497
Right Index	3.5771	6.6616
Right Middle	4.6224	8.7432
Right Ring	4.9697	7.1738
Right little	4.7432	6.8004

Table no. 2: Variance of the ridge count for male and female’s palmar surface of the right hand. For determination of any correction between the ridge count between the male and female samples were analysed. The obtained values are given below in table no 3 below-

Variables	r value	Interpretation
P vs P	0.252	Weak positive correlation
RT VS RT	0.362	Weak positive correlation
RI VS RI	0.274	Weak positive correlation
RM VS RM	0.373	Weak positive correlation
RR VS RR	0.599	Partial positive correlation
RL VS RL	0.495	Weak positive correlation

Ridge count (p value) Significant value= 0.05						Palm print thickness (p value) Significant value= 0.05		
Palm	RT	RI	RM	RR	RL	PR1	PR2	PF
0.001	0.117	0.003	0.002	0.045	0.014	0.10	0.08	1.59
High significant	low significant	High significant	high significant	low significant	High degree significant	moderate significant	Highly significant	low significant

Table no.3: Correlation coefficient of the ridge count among the gender and specified age groups. The above table no. 3 represents the correlation of the ridge density or count between male and female. After the statistical observations of the correlation, it was found that 90% of the ridges between both of the genders are weak positive correlation and 10% of the ridges were partial positive correlation. It signifies that there is not strong correlation between the ridge count in a specific area from various parts of palmar surface doesn't differentiate among ridges.

Male			Female		
PR1	PR2	PF	PR1	PR2	PF
127.80	122.43	115.85	142	137	87

Table no. 4: Ridge thickness (dimensions) mean from both male and female. PR1= Palmprint ridges1, PR2= Palmprint ridges2 and PF= Furrows between two palmprint ridge.

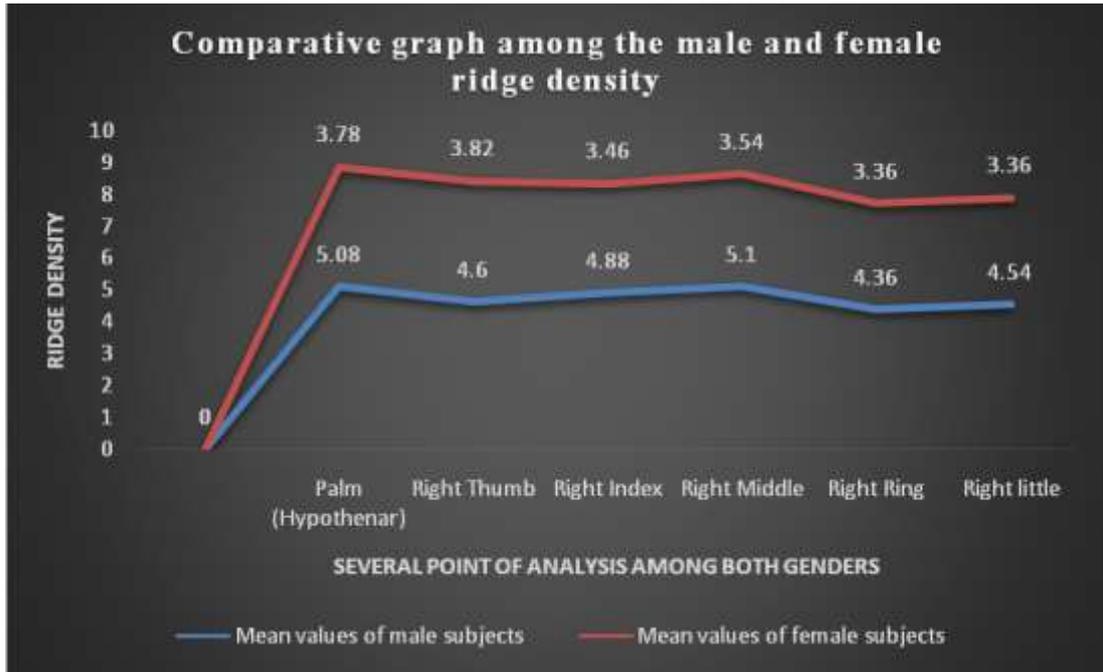
As per the observation of table no. 4, the dimensions between the right-hand palm print ridges of both of genders were measured from various points. As per the resultant of this study, either no correlation among both of genders, or it was weak and negative correlation among them. The obtained results are given below in table no 5 below-

Variables	r value	Interpretation
PR1 VS PR1	-0.238	Weak negative correlation
PR2 VS PR2	-0.156	Weak negative correlation
PF VS PF	0.038	Zero correlation

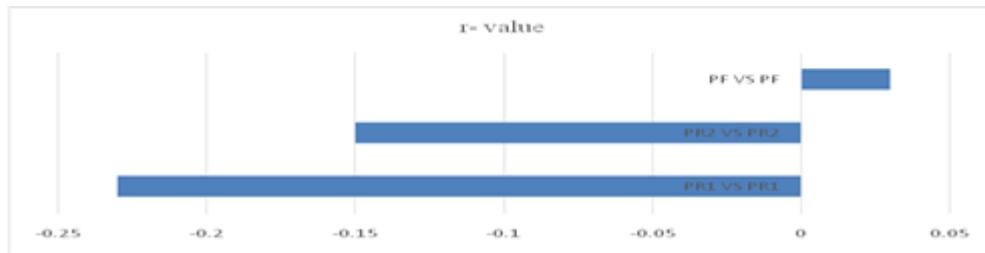
Table no. 5: Correlation coefficient of palmprint ridges dimensions between male and female. PR1= Palmprint ridges1, PR2= Palmprint ridges2 and PF= Furrows between two palmprint ridges. To verify the significance of this study, unpaired students t- test was performed at 95 % of confidence level. The obtained values of several selected points of palmar surface along with the dimensions between the ridges are given below in table no 6 below-

Table no. 6: T-test statistical difference test for ridge count and the palmprint ridges dimensions between male and female

The above table represents the T-test for the unpaired variance. A 9mm² area was drawn on a palm print and the fingerprint from RT to RL¹⁶. In order to measure the ridge count, the count was performed on the square box according to the method given by Acree and the counting of the ridges is done diagonally from one corner to the other. The above value is the counting done under 9mm square area which reflects the ridge density value. According to the above inference 20% of the ridge density together with palm prints and the fingerprints were highly significant i.e., P value is greater than 0.05 (p > 0.05). The ridges which shows highly significant values were Right-Thumb and Right Ring. The Right Little shows the partial significant value.



Graph no.1- Comparative graph among the male and females ridge density. The values which shows low significant values were Palm, Right Index and Right Middle. The thickness or the dimension of the ridges representing the palm prints were Palm ridges1, Palm ridges2 and Palm Furrows. All the three have a highly significant value which means $p > 0.05$.



Graph 2: Bar graph representation of the correlation between male and female palm print ridges dimension

9. Conclusion

As per the obtained results of this study, the variation of the ridges dimensions the palm ridges shows significantly higher than the ridges of the fingerprints. This shows that the palm print ridges dimensions varies from gender which means there is a great difference between male and female. The correlation between male and female ridge density shows that around 90% of the ridges will have weak positive correlation and around 10% of the ridges will have partial positive correlation. This depicts the number of the ridges will have insignificant differences between male and female but about 10% of the ridges will show a slight difference between them.

After an extensive study, it was found that female ridges tend to have higher than the male ridges. Even the sweat deposition on the epidermal ridges which means the sweat glands tends to excrete more on the female than male. It is observed that the sweat deposition is more in females as compared to the males because after the collection of the latent prints for the development after 36 hours, it was found that the female ridges tends to show more clarity than the females. So, the development of the female latent fingerprints was higher than the male individuals. After the observation of the ridges dimensions on the stereomicroscope it was found out that the female ridges have the higher dimensions but that cannot justify fully because it depends on the

individual's profession, conditions and the activities and such information can help the investigating officer to apprehend the suspect.

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