

Research Article

A study on lip print types among North Karnataka people

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Abstract

Cheiloscopy, the study of lip prints is one of the important tools for identification of a person. Uniqueness of lip print of every individual helps to fix the identity of a person. Various studies have been conducted on lip prints, which have shown the differences among people belonging to different races and ethnic origins of people. The present study was conducted to establish the most common lip print type among North Karnataka population. A total number of 100 subjects were included in the study. Lipstick was applied to lips & the prints were taken by application of cellophane tape to the lips. Only the middle part of lower lip was chosen for the study purpose. The lip prints were studied based on Tsuchihashi's classification, VIZ Type I [complete vertical], Type I' (incomplete vertical Grooves), Type II (forking grooves), Type III (intersecting grooves), Type IV (Reticular grooves), Type V (undetermined grooves). In this study, Type VI (reticular grooves) was the most common pattern.

Keywords: Cheiloscopy, Lip prints, North Karnataka population, Reticular pattern

1. Introduction

Lip prints of each individual are unique & hence it is an important tool for identification of an individual. The lip prints vary from person to person. Lip prints are specific to a person.¹ Fischer was the first anthropologist to describe the grooves or furrow on the red part of human lips.² Edmond Locard was the first person to recommend the use of lip prints in personal identification and criminalization.³ Lip grooves are permanent & unchangeable like palatal rugae & fingerprints. Grooves on lips appear as early as 6th week of intrauterine life & once appeared their pattern do not change.⁴ Yasuo Tsuchihashi conducted a study on lip print patterns of Japanese people and the lip prints classified in to six types.⁵

Type I: Clear-cut grooves running vertically across the lip

Type I': The grooves are straight but disappear half-way instead of covering the entire breadth of lip.

Type II: The grooves fork in their course.

Type III: The grooves intersect

Type IV: The grooves are reticular.

Type V: The grooves do not fall in to any of the types I to IV & cannot be differentiated morphologically.

In a study which was conducted on 100 individuals comprising 50 males & 50 females in the age group of 18-30 years, it was found that no individual had single type of lip print in four different quadrants and no two or more individuals had similar type of lip print pattern. Type III- intersecting patten was most common among males & females having 39.5%& 36.5% respectively.⁶ In another study of 48 females & 45 males it was found that type I & I' were most common in females; types IV & V were seen most commonly in males & the study concluded that no two lip prints matched with each other, thus establishing the uniqueness of lip prints.⁷

In another study, it was found that the most common in males was type II lip prints (31.61%) & the least common in males was type IV lip print (0.57%). In females the most common was type II (43.79%). The study also concluded that no change in size or in shape of the lip prints in three different periods in a year.⁸ Many studies which were conducted on lip prints previously show that different races & ethnic groups show differences in the lip print patterns. This study was undertaken to determine the predominant lip print type In North Karnataka population.

2. Materials & Methods

1. Lip stick (Red color / Non-glossy)
2. Cellophane tape
3. Scissors
4. White bond paper.

50 male subjects & 50 female subjects belonging to North Karnataka region were selected for the study. The minimum age of the subject was 18 years & maximum age was 40 years.

Lipstick was applied on the lips of the subject with a single stroke. Then with the help of a paper, the centre portion of lips was dabbed first and then left and right corners of lips pressed, applying uniform pressure, taking care to avoid sliding of lips to prevent smudging of the print. After the lip prints were acquired, details such as name, sex, age was documented. Each lip print was assigned a serial number. Each lip print was compared manually with others using a magnifying glass to test the uniqueness of lip prints. Patterns of lip print were studied by applying Suzuki's classification.

2.1 Inclusion criteria

Both males and females between age group 18 -40 years

Subjects free from any ongoing or inert lesions on their lips

2.2 Exclusion criteria

Known hypersensitivity to lip sticks

Active or passive lip lesions and non-resident Indians

Subjects who did not give consent

3. Results

Table No. 1: Percentage of lip print types in males and females (LQ-Left Quadrant, RQ-Right Quadrant)

Type	Percentage			
	Male		Female	
	LQ	RQ	LQ	RQ
I	15	07	15	08
I'	17	20	14	24
II	16	18	10	11
III	17	20	25	20
IV	34	32	33	32
V	01	03	03	05

It can be seen from the table No.1 that, Type IV was the commonest in both the sexes & in both the quadrants. In a study of lip print patterns on 20 males and 20 females, regarding identification of sex by lip prints, it was found that Type I and Type I' patterns were predominantly seen in females while Type IV pattern was predominantly seen in males.

Table No. 2: Age wise distribution of cases

Age group (in years)	Number of cases
18 – 23	18
24 – 29	22
30 – 35	44
36 – 40	16

From the above table (table No. 2) it can be seen that maximum subjects were from 30-35 yrs age group & least from 36-40 years of age group

4. Discussion

In this study, Type IV was the commonest in both the sexes & in both the quadrants. In a study of lip print patterns on 20 males and 20 females, regarding identification of sex by lip prints, it was found that Type I and Type I' patterns were predominantly seen in females while Type IV pattern was predominantly seen in males.² However no two lip prints were identical in our study as well as in their study. In another study, it was found that, in boys, Type I (complete vertical-30%) was the most prominent pattern, followed by Type II, Type IV, Type I', Type III and Type V (irregular-6%) was the least prominent pattern. However, in girls, Type II (branched-42%) was the most prominent pattern, followed by Type I', Type I, Type III, Type IV and Type V (irregular-8%) was the least common pattern. Further it was found that in both boys and girls, type II (branched-34%) lip print was the most prominent pattern.³

In a study of 150 individuals comprising 75 males and 75 females, in the age group of 18 II Years, regarding morphological patterns of lip prints in relation to gender of North Indian population, it was found that intersecting pattern was most common in females having 27.7% whereas branching pattern was common in males having 28.1%. However, the least common was the reticular pattern seen in 13% males and 14.4% females. The branching pattern was found to be most common among the lower lips of both males and females. With regard to sex, lip prints vary from males and females in the given age group and no similarity was seen between any compartments.⁴ In a Study on 50 male and 50 female subjects of Kerala origin on Lip Print Types, Type IV most frequently observed in both the sexes and in both the quadrants.⁵ Our findings are consistent with this study. In a study conducted in Pondicherry in India on 60 students (30 males & 30 females) in the age group of 17-25 years, it was found that type III was predominant in males, followed by type II, type IV, type & type V patterns. In females type II was predominant pattern followed by type IV, type I, type III & type V patterns.⁹ In a research study involving 100 lip prints of male & 100 lip prints of female, it was found that branched pattern (type III) was predominant in both sexes.¹⁰ Yet in another study conducted on 200 subjects, type II (grooves) was most commonly seen followed by types I & I'. It concluded that variation is a common feature & No two prints were identical.¹¹

5. Conclusion

This study shows that type IV (Reticular pattern) was the predominant lip print pattern in middle portion of lower lip. Lip prints serve as a useful identification tool at the crime scene & studies on cheiloscopy will contribute much more to the existing knowledge on the subject. Lip prints remain unaltered throughout life & gender differences they exhibit along with uniqueness to an individual will really help the forensic experts to aid in the administration of justice.

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