

Lip prints – A study of its uniqueness, prevalence, and gender significance

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ABSTRACT

Aim: The aim is to study the different patterns and uniqueness of the lip prints in relation to gender significance. **Objective:** The present study is to analyze the different patterns, uniqueness in different individual on the basis of lip prints. **Materials and Methods:** The study was conducted among 50 individuals of Saveetha Dental College, in 25 females and 25 males in the age of 15–20 were included in the study. The lip prints were taken on the individuals without having any lesions on their lips and who are sensitive to the lipstick are excluded in this study. The prints were analyzed and data were expressed as graph bar. **Results:** The present study has observed that patterns of lip prints were differ between individuals to individual. **Conclusion:** The present study thus concluded that the studying various patterns of lips (cheiloscopy) add a knowledge in the field of forensic science and it could be the best tool to be incorporate along with other crime investigating tools.

KEY WORDS: Cheiloscopy, Lower lip, Upper lip

INTRODUCTION

Cheiloscopy is a study of lip prints and has unique feature as like the fingerprints. The furrows present on human lips (sulci labiorum) are extraordinary to every individual and it can be utilized to decide the character of an individual. Lip prints are typical lines and gaps which thereby appear wrinkles and furrows over it between the internal labial mucosa and external skin, examination of which is known as cheiloscopy.^[1-4] As like various identification tools such as thumbprint or fingerprint and mole marks, besides that cheiloscopic system has unique features and it also serves as scientific tool to confirm individuals proof of their sex and character.^[5] In a wrongdoing scene examination, as like fingerprints, even lip prints can also be a detective tool, it may found on fabrics or different objects such as glasses, mugs, or even cigarette butts^[6] and serves as an effective tool to identify the suspected individuals in the above-mentioned examinations.^[7] Dental ID stays a standout among the most solid and

every now and again connected techniques for ID, dominantly by the correlation of antemortem and after death records.^[8] This bio-optical marvel was first noted by anthropologists, R. Fischer, who was the first to portray it in 1902.^[9-12]

MATERIALS AND METHODS

Materials

Requirements

1. A dark-colored non-glossy lipstick.
2. A4 sheet paper.
3. Cellophane tape.
4. Magnifying lens ($\times 10$).
5. Pen to mark lines.

Methods

The study was conducted among 50 individuals of Saveetha Dental College, in 25 females and 25 males in the age of 15–20 were included in the study. The lip prints were taken on the individuals without having any lesions on their lips and who are sensitive to the lipstick are excluded in this study. The lipstick was applied by single stroke on lips of a student and waited for few minutes. Then, the lip impressions collected

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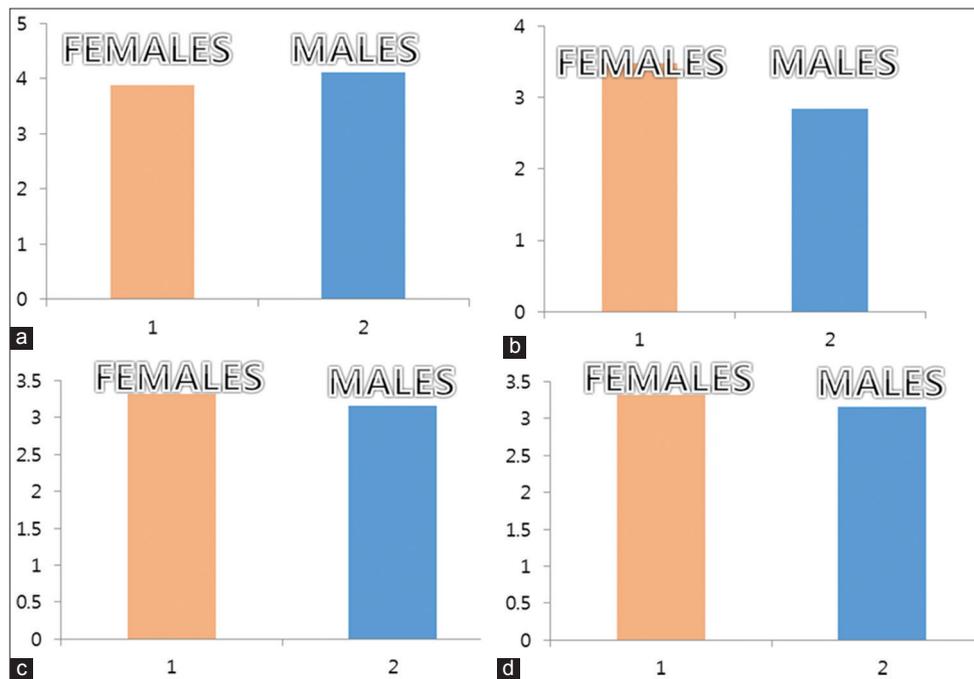


Figure 1: (a) Undetermined pattern, (b) partial vertical lines, (c) Y-shaped pattern, (d) vertical lines

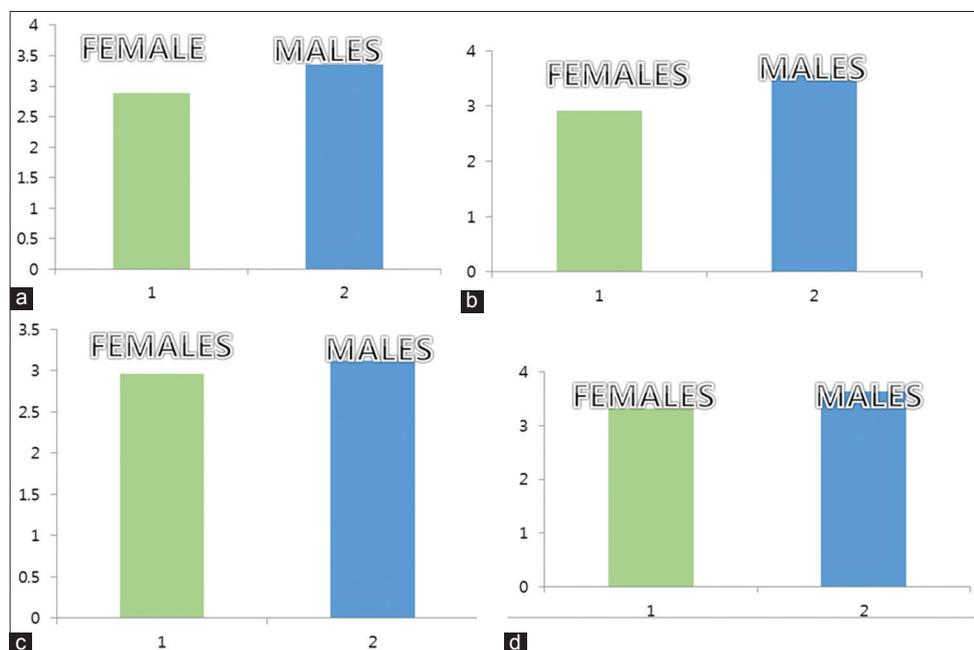


Figure 2: (a) Vertical pattern, (b) partial vertical lines, (c) undetermined pattern, (d) Y-shaped pattern

by cellophane tape and were pasted on the A4 sheet paper. These prints were divided into four categories, they are upper right lip, upper left lip, lower right lip, and lower left lip and were viewed under the magnifying lens (×10) for counting the lip patterns. In this study, we determined the sex.

Patterns for Sex Determination

- Type-1: Vertical grooves run along the entire lips.
- Type-2: Partial vertical grooves.
- Type-3: Branched grooves (Y-shaped pattern).
- Type-4: Undetermined patterns.

RESULTS

The present study has observed that there are undetermined patterns of lip prints were predominant in females and remaining patterns were observed in males. The graph bar shows different pattern of lip prints and it shows variance between females and males. The patters of lip prints may differ between individual to individual [Figures 1-4].

Upper Right Lip

Figure 1a: Undetermined pattern of upper right lip

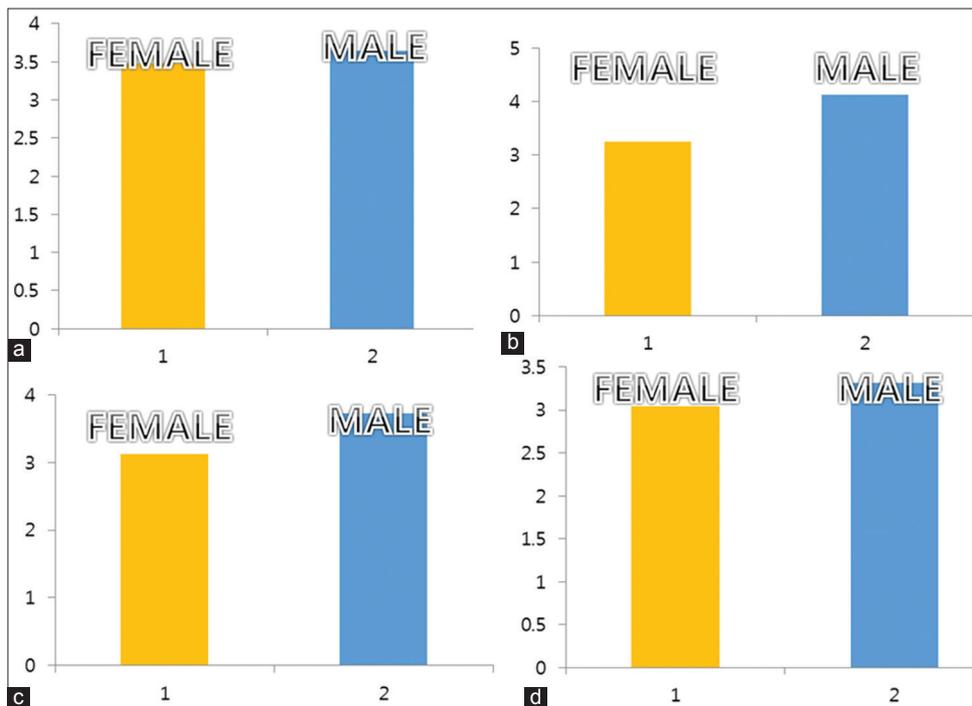


Figure 3: (a) Vertical lines, (b) Y-shaped patterns, (c) undetermined pattern, (d) partial vertical lines

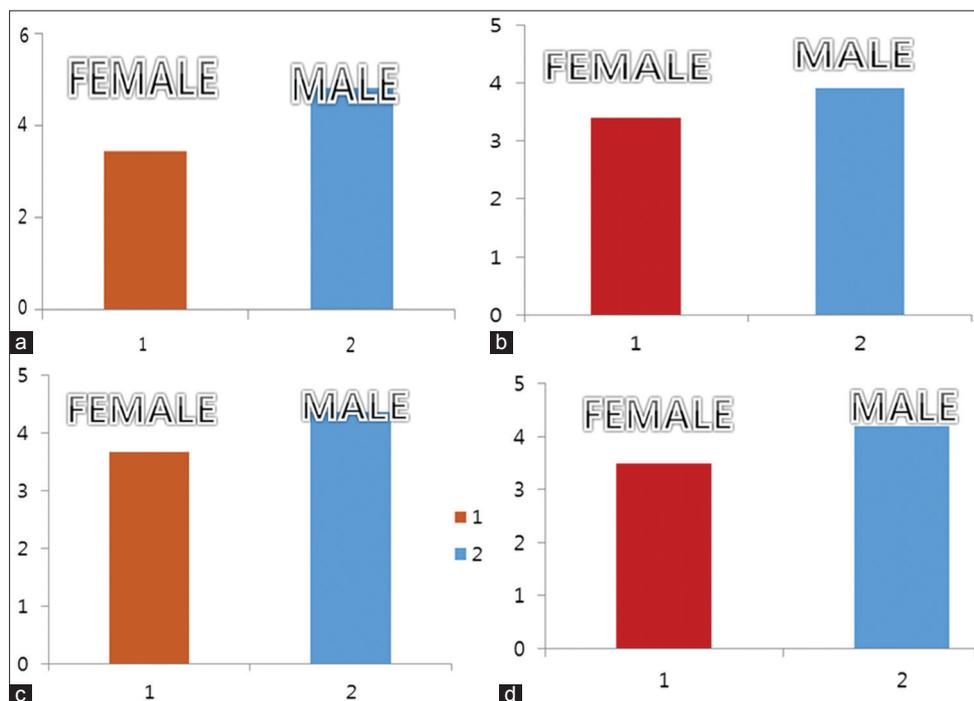


Figure 4: (a) Vertical lines, (b) undetermined Pattern, (c) partial vertical pattern, (d) Y-shaped pattern

Figure 1b: Partial vertical lines of upper right lip

Figure 1c: Y-shaped pattern of upper right lip

Figure 1d: Vertical lines of upper right lip

Upper Left Lip

Figure 2a: Vertical pattern of upper left lip

Figure 2b: Partial vertical lines of upper left lip

Figure 2c: Undetermined pattern of upper left lip

Figure 2d: Y-Shaped pattern of upper left lip

Lower Right Lip

Figure 3a: Vertical lines of lower right lip

Figure 3b: Y- Shaped patterns of lower right lip

Figure 3c: Undetermined pattern of lower right lip

Figure 3d: Partial vertical lines of lower right lip

Lower Left Lip

Figure 4a: vertical lines of lower left lip

Figure 4b: Undetermined Pattern of lower left lips

Figure 4c: Partial vertical pattern of lower left lips

Figure 4d: Y- Shaped pattern of lower left lips

DISCUSSION

Cheiloscopy is an upcoming tool in crime investigation. Lip prints are extremely useful in forensic investigation and personal identification. They are considered the most important forms of transfer evidence and are analogous to fingerprints.^[13] Personal identification is critical for unknown persons, etc., and for living individual for any criminal suspicions. If a precise description of the various elements of the higher lip, and therefore, the lower lip square measures established for a personal by elaborated study, this anti-mortem record is often used for matching the main points of lip prints in postmortem records for private identification.^[14]

In upper right lip, undetermined patterns are more prominent in males than in females, remaining patterns such as vertical lines, partial vertical lines, and Y-shaped patterns are prominent in female. In upper left lip, all the patterns are more prominent in males than in females.

Like fingerprints, lip prints were distinctive and individual characteristics. Being an identification tool, it has its own disadvantages like it is difficult to find in monozygotic twins, any lip injury or any pathological changes. Tsuchihashi's classification has described that the lip prints are in five different varieties. Even though professionals have incorporated the lip prints in various crime investigations to detect crimes and sex of the individuals.^[15-17]

CONCLUSION

The present study thus concluded that the studying various patterns of lips (cheiloscopy) add a knowledge in the field of forensic science and it could be the

best tool to be incorporate along with other crime investigating tools.

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