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Comparison of lip prints, tongue prints and finger prints among Karnataka and Maharashtra population

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Abstract

Aim: 1. To compare the lip print, tongue print and finger print among two different population groups.

2.To study the predomint type of lip print, tongue pattern and finger print in individual group of population.

3.To evaluate the efficacy of three parameters in sex determination and population sub typing.

Material and Method: The study included 80 subjects, 40 from karnataka and 40 subjects from Maharastra. Each group consisted of 20 males and 20 females in the age group of 18 to 30 years. Each individuals lip prints, tongue prints and figer prints were studied using classifications given by Tsuchihashi et al, Stefanescu et al and Tsuchihashias et al respectively and the results obtained were stastically analysed using chi square test and the P value less than 0.05 were considered significant.

Results: Type 3 lip print was found to be the most predominant among males and Type 1 in females in all the two populations. The u-shaped tongue was predominant among males and v shaped among females and the longitudinal grooves showed no significant difference among males and females and between the states. Finger print association of lip print pattern among the Karnataka and Maharastra revealed no significant difference.

Conclusion: In the present study, we have made an attempt to study the lip prints, tongue prints and finger

print among three different population groups of india. Further studies with larger sample size are needed to overcome the shortcomings of the study.

Keywords: DNA, Tongue Prints, Lip Print

Introduction

Sex determination plays an inevitable role in forensic investigations. Various methods are employed for identification of an unknown indivisual in mass diaster cases or in missing person cases. Visual examination may not help in identification and gender determination especially after severe decomposition of the body. This is when fingerprints, DNA profiling play an important role[1].However, these evidences may not always be obtained or used circumstantially. In such situations, other available evidences like lip prints, palatal rugae patterns and tongue patterns may be employed due their uniqueness in different indivisuals and gender.

Lip prints are characteristic patterns of fissures in the form of elevations and depressions present in the zone of trasition between inner labial mucosa and the outer skin. Study of lip prints is called Cheiloscopy[2].This is considered unique to an indivisual and analogous of finger prints. The potensial of lip prints to determine sex has been well documented by different studies.

Tongue prints are the newly evolving tool in forensic odontology. The reason for implementing tongue prints as a forensic tool is that the characteristic features of the tongue exhibit remarkable difference in each individual even in identical twins and they are well protected from the environmental influences. In recent years it is believed to be the reliable proff in forensic identification. Hence, the present study was undertaken to study the lip prints, palatal rugae patterns and Tongue print patterns variation among two different population and their efficacy in sex determination and population subtyping.

The Aim and Objectives

1. To compare the lip print, tongue print and finger print among two different population groups.

2.To study the predominant type of each pattern in individual group of population.

3.To evaluate the efficacy of three parameters in Sex determination and population sub typing.

Materials and methods

The study sample consisted, a total of 80 subjects. 40 subjects from Maharashtra, and 40 subjects from Karnataka visiting to private dental clinics for dental treatment respectively. Each group comprising 20 females and 20 males between the age group of 18-25 years. Informed verbal consent was taken from each subjects.

Exclusion criteria

Subjects with braces and ulcers in the lips and tongue.

Subjects with abnormalities of lips, palate and Tongue.

With bony and soft tissue protuberances, deformity, trauma, were excluded.

Recording the lip Prints:

The materials used for recording the lip prints were bright maroon colored lipstick, transparent cellophane tape, white chart paper, magnifying lens and scissors. (Fig 1)

Lips of the study subjects were cleaned and then the lipstick was applied all over the lips. The impression of the lips was traced by applying a rectangular piece of cellophane tape over the lips of subjects. Then the lip impression was transferred to the white chart paper and then visualized using the magnifying lens.

Examination

The lip prints were analysed using the classification proposed by Tsuchihashias

Type 1: Clear cut vertical grooves that run across the entire lips.

Type 1": Similar to Type 1 but donot cover the entire lip.

Type 2: Branched grooves

Type 3: Intersected grooves.

Type 4: Reticular grooves

Type: Grooves do not fall into any of the above categories.

Recording the Tongue Prints

Subjects were asked to protrude their tongue and the images were captured. The tongue shape and the longitudinal grooves were categorized using the classification proposed by Stefanescu et al.

Examination of Tongue Prints

Based on shape

U shaped

Vshaped

Based on the Grooves

Superficial

Deep

Stastistical Analysis

The observed data was entered in MS excel worksheet and stastical Analysis was done using Pearson's chi squre test and stastical software SPSS version 17. P value less than 0.05 was considered significant.

Results

Lip prints: We observed that all lip print pattern was unique and no two individuals had the same pattern. In Karnataka Type 2 print pattern was observed to be predominant folloed by Type 3. In Maharastra Type 3 was predominant followed by Type 2. As a whole in all the two population males demonstrated principally of Type 3 and majority showed Type 2. The stastical association of lip print pattern among the Karnataka and Maharastra revealed no significant difference.

Rugae Pattern: By the above study we observed that the rughe pattern in each indivisuals were distinct. The predominant ruf=gae pattern among males in all the three states were found to be wavy pattern followed by curved and in females straight pattern was predominant. The interstate stastical association was insignificant.

Tongue prints: We observed that the predominant tongue shape among males in all the two states was found to be U shape and in famales was V shape. No significant difference was observed in the longitudinal grooves among males and females.

On corelating the lip prints, palatal rugae and tongue prints by Pearsons Chi square test showed no stastical significance.

Discussion

Dental and supporting structures open numerous ways for the positive identification of victims from diasters, crime scenes and deceased persons. The uniqueness of these structures makes them the potential parameters for forensic identification the dental records and DnA profiling plays a major role. Complilation of data from other parameters noticeably cheiloscopy, rugoscopy and recently tongue prints are also capable of playing a major role in criminal investigations where they serve as adjuvant in person identification, sex determination and population sub typing.

The importance of cheiloscopy is linked to the information that they develop at 6 th month of intra uterine life, they are permanent and unique which are unchangeable after death. Palatal rugae pattern are stable resistant to fracture and are believed to be precise for racial groups facilitation and the population recognition. Tongue prints are found to be as finger prints moreover they are well protected from the external environment which proves them to be useful in forensic identification when used in conjuction with cheiloscopy and rugoscopy [3]. In the literature a number of studies have been done elaborately on lip prints, palatal rugae and few on tongue prints for sex and population

identification individually. There are no studies that compared lip print, figer print and tongue prints between three population.

In the present study the predominant lip print pattern among males was found to be Type 3 and in females it was Type 2. These results were in accordance to Hunasgi et al and Govindkar et al. Among the Karnataka population Type 2 was found to be predominant followed by Type 3. This was in accordance to Hunasgi et al and in contrast to the study done by Verghese et al who has found Type 4 as the predominant pattern among subjects from south Karnataka. Among the Kerala subjects Type 3 was predominant followed by Type 2. This was in contrast to Hunsagi et al who has reported Type 2 TO BE THE PRINCIPALE pattern in Maharashtra population. In our study stastical association of all lip print patterns among Karnataka and Maharastra population revealed no significantdifferance[4].

The predominant rugae pattern among males in all the two states were found to be wavy pattern followed by curved and in females straight pattern was predominant. No significant difference was observed between the states. The principal tongue shape among males in all the two states was found to be U shape and in females was V shape. This finding was in accordance with Jeddy et al. There was no significant difference in the longitudinal grooves and interstate comparison among the study subjects [5].

Conclusion

In our study we have made an attempt to compare lip prints, rugae pattern and tongue prints among two population groups in India. Subtle difference in different studies may be attributed to smaller sample size. Further studies with larger sample size are needed which will definitely prove the accuracy of these parameters.

Referances

1. A study on association and correlation of lip and finger print pattern analysis for gender identification: Journal of Dr NTR University of Health Sciences 2015: 4(3) 176-181.

2. Comparison of Lip Prints, Rugae pattern and Tongue prints among Karnataka, Kerala and Tamil Nadu Population – A Short study. International Journal of Innovative Science and Research Techonology .4(7) 2456-2165.

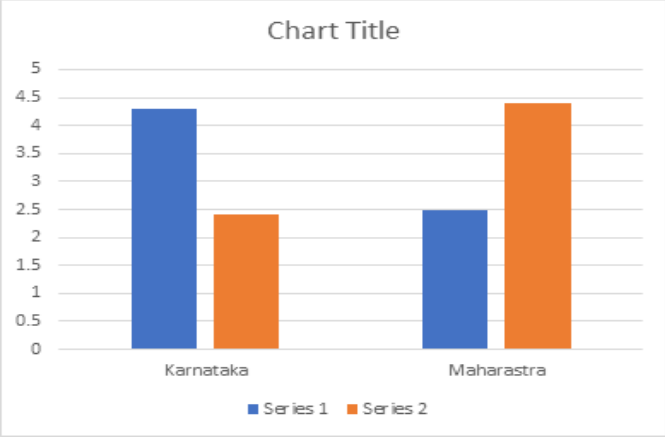
3. Rugoscopy: A Fingerprint of oral cavity in Forensic Dentistry: Indian journal of Forensic Odontology. Indian Journal of Forensic Odontology. 12. January -June 2019.

4. Cheiloscopy: The study of lip prints in sex identification.: Journal of Forensic Dental Sciences/ January-June 2009 /vol1 /issue1.

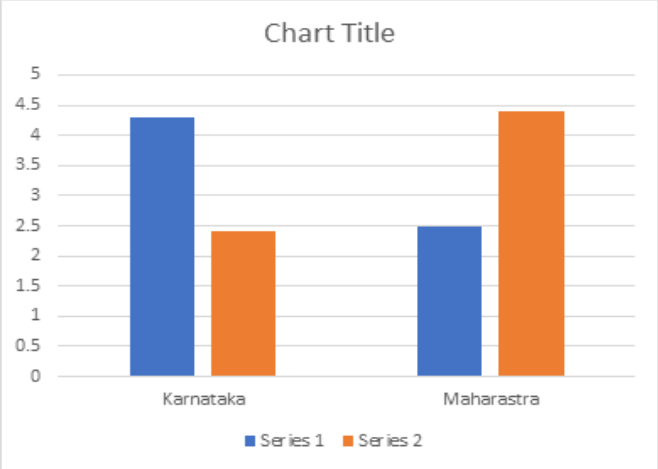
5. Indira AP, Gupta M, David M Rugoscopy for establishing indivisuality. In J of Dental Advancement 2011 :3(1) 427-433.

6. Rastogi P, Parida. Lip prints – An aid in identication. Aust J Forensic Sci 2012:44:109-116.

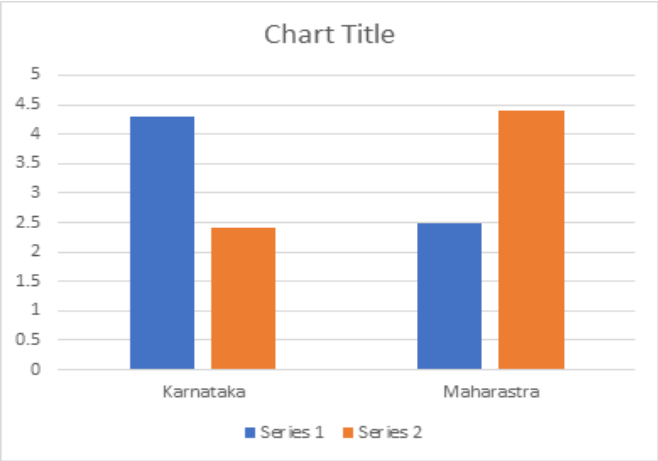
Legend Figures and Graph



Graph 1: Distribution of lip print pattern among male and females in Karnataka and Maharashtra



Graph 2: Distribution of rugae pattern among male and females in Karnataka and Maharashtra



Graph 3: distribution of tongue shape among male and females in Karnataka and Maharashtra.

Fig 1: Material used for recording.

Fig 2: Recording of lip prints, finger prints & tongue prints.