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LIP PRINT MORPHOLOGICAL PATTERN IN RELATION TO NASAL INDEX AMONG ADULTS OF EGBA, IN ABEOKUTA, SOUTH-WEST NIGERIA.

Alabi AS*[1], Omoge OE[1], Kareem SB[1], Imamfulani AO[2]

[1]Department of Anatomy, Faculty of Basic Medical Sciences, College of Health Sciences, University of Ilorin, Ilorin, Nigeria.
[2]Department of Physiology, Faculty of Basic Medical Sciences, College of Health Sciences, University of Ilorin, Ilorin, Nigeria.

***Author for Correspondence:** alabi.as@unilorin.edu.ng

ABSTRACT

Cheiloscopy and Nasal index are important bio-anthropological parameters unique to each ethnic group. The study aimed at identifying the lip print pattern and nasal index peculiar to Egba people and their possible interrelationship. The study was conducted in Abeokuta, South-West, Nigeria, among 410 adult Egba individuals (205 males and 205 females). Nasal height and width were measured using Digital Sliding Vernier Caliper. The lip prints of the subjects were collected by gently placing a microscopic glass slide on the lip after a little application of lip gloss. The data obtained were analyzed using SPSS version 20.0 software and the statistical significance was put into consideration using one-way Analysis of Variance (ANOVA) when ($P \leq 0.05$). The result showed that the predominant lip print pattern of the Egba ethnic group was Type V. The predominant Nasal Index among both sexes was 60.00 while their peculiar nasal shape was Leptorrhine, which can subsequently serve as an important anthropometric tool used in reconstructive surgeries of nose. The study revealed no significant variation among the lip print patterns of all types of nasal morphology. The existence of sexual dimorphism in the lip print pattern of the Egba ethnic group is a peculiar feature that can be relevant in determination of gender in identification of persons during crime investigations and in mass disaster which are relevant in medico-legal cases.

Keywords: Cheiloscopy, Nasal Index, Egba

INTRODUCTION

Every person has certain features that make them radically distinct from others. One of such feature is Lip print. Lip prints remain the same throughout life and are uninfluenced by injuries, diseases, or environmental changes (Bushra and Devanand, 2014). Cheiloscopy is a significant parameter used in human identification and it is referred to the study, recording and classification of the external lining of the lips and the impressions they leave (Caputo *et al.* 2018). Various methods of classifying and analyzing the lip prints have been reviewed by researchers in detail so as to enlighten readers with the fact that the possibilities to use the red part of lips to identify a human being are wider than it is commonly thought (Prabhu et al. 2012).

The lip prints being uniform throughout the life and characteristics of person can be used to verify the presence or absence of a person from the crime, provided there has been consumption of beverages, drinks, usage of cloth, tissues or napkin etc., at the crime scene (Coward, 2007). Nasal index is measured as the ratio of maximum breadth of nose with the maximum length of nose multiplied by 100, which helps characterize nasal morphology into five types (Hyperleptorrhine, Leptorrhine, Mesorrhine, Platyrrhine, Hyperplatyrrhine) (Rohith *et al.* 2020). The nasal dimensions and index are important cephalometric parameters used in physical anthropometry to distinguish different human populations and to categorize the human nasal morphology (Omotoso *et al.* 2019). The aim of the study is to determine the lip print pattern, nasal index and their relationship among adults of Egba ethnic group in Abeokuta, South-West, Nigeria.

MATERIALS AND METHODS

Sampling Technique

These subjects were randomly selected through simple random sampling method from Egbas in Abeokuta, South-West, Nigeria.

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Ethical Approval

The Ethical Approval of this study was gotten from the Department of Anatomy, University of Ilorin, Ilorin, Nigeria. The subjects' consent whose age range is within 18 – 65 years was gotten before commencing data collection. The study was carried in 2019 among the Egba individuals in Abeokuta.

Sampling Size Determination

To calculate the optimal sample size, Fischer's formula for large population or infinite population was used and it states thus:

$$\frac{Z^2 X PX Q}{D^2}$$

POPULATION AND SAMPLE SIZE

ABEOKUTA NORTH = 198,793
ABEOKUTA SOUTH = 250,295
TOTAL ABEOKUTA POPULATION = 449,088

Age group percentage (18 – 65) = 58.70
To calculate the Sample Size, using FISHER'S FORMULA

$$\frac{Z^2 X PX Q}{D^2}$$

Z=1.96, D=0.05, Q= 1 – P

$$P = \frac{\text{AGE GROUP X CONSIDERED POPULATION}}{100} = \frac{58.70 \text{ X } 449{,}088}{100} = 263614.656$$

$$P = \frac{263614.656}{\text{CONSIDERED POPULATION}} = \frac{263614.656}{449{,}088} = 0.587$$

Therefore, Q = 1 – P = 1 – 0.587 = 0.413.

Substituting values into the fisher's formula.

$$\text{Sample Size} = \frac{(1.96)^2 \text{ X } 0.587 \text{ X } 0.413}{(0.05)^2}$$

$$= \frac{3.8416 \text{ X } 0.242431}{0.0025}$$

$$= \frac{0.9313229296}{0.0025} = 372.52917184$$

Attrition Rate = 372.52917184 + 10% of 372.52917

= 373 + 10% 0f 373 = 373 + 37.3

= 410.3 = 410.

Lip Print Collection and Analysis

The Subject was asked to clean his or her lip with a dry cloth and stand in a relaxed position. The lip gloss was applied on both the lower and upper lip in very minute quantity in a single motion. Then a new clear microscopic glass slide was placed on both lips in a single motion. After the slide was removed from the surface of the lip, a carbon black powder was slightly blown on the surface of the slide with the print. Then the slide was placed on the questionnaire sheet of the willing individual with the surface of the print facing upward. Thereafter, the slide was held firm to the questionnaire sheet using a cellophane tape. Thereafter, the subject's lip was wiped off using a dry cloth.

The classification of Lip print that was adopted in this study was the Suzuki and Tsuchihashi Classification (1970).

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

b. Type I: Straight grooves which disappear halfway instead of covering the entire breadth of the lip.

c. Type II: Fork grooves in their course

d. Type III: Intersecting grooves

e. Type IV: Reticulate grooves

f. Type V: The groove does not fall in any of the types I-IV and cannot be differentiated morphologically (Dongarwar et al. 2013).

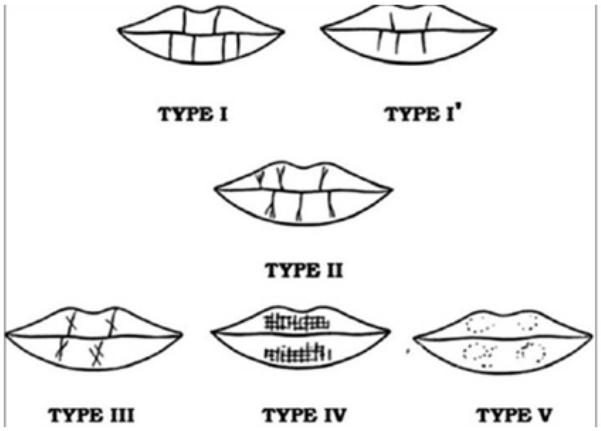

Fig.1. Diagrammatic Representation of Suzuki and Tsuchihashi classification (Gardezi et al. 2017).

Fig.2. Collection of Lip Print using a microscopic glass slide

Nasal Index Collection and Analysis

The nasal height and width of the subject was measured respectively using a sliding digital Vernier caliper. The nasal height of the subject was measured from the bregma down to the projected region of the naris while the nasal width of the subject was measured from the left to the right ala (wing) of the nose and was recorded in the questionnaire sheet of the individual.

Nasal index = Width of nose (cm) X 100

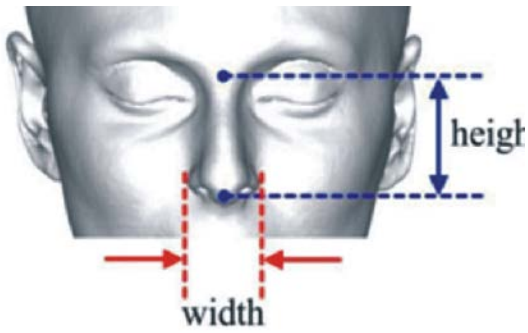

Fig.3: Diagram showing the nasal landmarks to be considered in Nasal index measurement (Chengyu et al. 2018).

Statistical Analysis

Descriptive statistics for variables were used with tables. The percentage (%) distribution of lip prints pattern for the following parameters (Sex and Nasal Index) was calculated using SPSS (Statistical package for the social science, version 20.0) software. Statistical significance was put into consideration using one-way Analysis of Variance (ANOVA) when ($P \leq 0.05$).

RESULTS AND DISCUSSION

The data in this study were analyzed and the results presented in tables and graphs. The **c**ategorical variables were described as frequency (percentages). The study was from a single ethnic group; thus, only stratified based on sex.

The distribution of the lip print types of males and females and the Chi-square test of sex associated difference in lip print pattern distribution were presented in Tables 1a to 1d.

Table 1a: Distribution of lip print types at Upper Right Quadrant (URQ) and test of sex-associated difference.

	URQ Type I	Type I'	Type II	Type III	Type IV	Type V	Chi-Square Tests df	X^2	P-value
Male	13 6.3%	13 6.3%	63 30.7%	78 38.0%	16 7.8%	22 10.7%	5	23.453	**<0.001**
Female	9 4.4%	19 9.3%	32 15.6%	85 41.5%	41 20.0%	19 9.3%			
Total	**22 5.4%**	**32 7.8%**	**95 23.2%**	**163 39.8%**	**57 13.9%**	**41 10.0%**			

Note: URQ = Upper Right Quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant lip pattern in Male was Type III (38.0%), followed by Type II (30.7%), Type V (10.7%), Type IV (7.8%) and the least was Type I and Type I' (6.3%). For Females, the most frequent lip pattern was Type III (41.5%), followed by Type IV (20.0%), Type II (15.6%), Type V and Type I' (9.3%) and the least was Type I (4.4%).

The table explained that there is significant variation ($P < 0.05$) among the lip print pattern of both sexes which states that sexual dimorphism occurs in the upper left quadrant.

Table 1b: Distribution of Lip Print Types at Upper Left Quadrant (ULQ) and Test of Sex-Associated Difference

	ULQ Type I	Type I'	Type II	Type III	Type IV	Type V	Chi-Square Tests df	X^2	P-value
Male	35 17.1%	15 7.3%	65 31.7%	57 27.8%	21 10.2%	12 5.9%	5	11.645	**0.040**
Female	27 13.2%	17 8.3%	42 20.5%	67 32.7%	29 14.1%	23 11.2%			
Total	**62 15.1%**	**32 7.8%**	**107 26.1%**	**124 30.2%**	**50 12.2%**	**35 8.5%**			

Note: ULQ = Upper Left Quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant lip pattern in Male was Type II (31.7%), followed by Type III (27.8%), Type I (17.1%), Type IV (10.2%), Type I' (7.3%) and the least was Type V (5.9%). For Females, the most frequent lip pattern was Type III (32.7%), followed by Type II (20.5%), Type IV (14.1%), Type I (13.2%), Type V (11.2%) and the least was Type I' (8.3%).The Study shows that Type III was the most predominant in both male and female at the Upper Right Quadrant (URL) and

that Type II was predominant in males and Type III was predominant in females at the Lower Left Quadrant. The table explained that there is significant variation (P < 0.05) among the lip print pattern of both sexes which states that sexual dimorphism occurs in the upper left quadrant.

Table 1c: Distribution of Lip Print Types at Lower Right Quadrant (Lrq) and Test of Sex-Associated Difference

	LRQ Type I	Type I'	Type II	Type III	Type IV	Type V	Chi-Square Tests df	X^2	P-value
Male	12 5.9%	6 2.9%	25 12.2%	24 11.7%	10 4.9%	128 62.4%	5	9.721	0.084
Female	8 3.9%	3 1.5%	11 5.4%	21 10.2%	9 4.4%	153 74.6%			
Total	**20** **4.9%**	**9** **2.2%**	**36** **8.8%**	**45** **11.0%**	**19** **4.6%**	**281** **68.5%**			

Note: LRQ= Lower right quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant lip pattern in Male was Type V (62.4%),followed by Type II (12.2%), Type III (11.7%), Type I (5.9%), Type IV (4.9%) and the least was Type I' (2.9%). For Females, the most frequent lip pattern was Type V (68.5%), followed by Type III (11.0%), Type II (8.8%), Type I (4.9%), Type IV (4.6%) and the least was Type I' (2.2%).

The table explained that there is no significant variation (P > 0.05) among the lip print pattern of both sexes which states that sexual dimorphism does not occur in the lower right quadrant.

Table 1d: Distribution of Lip Print Types at Lower Left Quadrant (Llq) and Test of Sex-Associated Difference

	LLQ Type I	Type I'	Type II	Type III	Type IV	Type V	Chi-Square Tests df	X^2	P-value
Male	11 5.4%	14 6.8%	31 15.1%	26 12.7%	4 2.0%	119 58.0%	5	23.165	**<0.001**
Female	3 1.5%	4 2.0%	13 6.3%	23 11.2%	4 2.0%	158 77.1%			
Total	**14** **3.4%**	**18** **4.4%**	**44** **10.7%**	**49** **12.0%**	**8** **2.0%**	**277** **67.6%**			

Note: LLQ=Lower left quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant lip pattern in Male was Type V (58.0%), followed by Type II (15.1%), Type III (12.7%), Type I' (6.8%), Type I(5.4%) and the least was Type IV (2.0%). For Females, the most frequent lip pattern was Type V (77.1%), followed by Type III (11.2%), Type II (6.3%), Type I' and Type IV (2.0%) and the least was Type I (1.5%).The Study shows that Type V was the most predominant in both male and female at the Lower Left Quadrant (LLQ) and that Type V was predominant in males and Type III was predominant in females at the Lower

Left Quadrant. The table explained that there is significant variation (P < 0.05) among the lip print pattern of both sexes which states that sexual dimorphism occurs in the lower left quadrant.

Table 2 represents the distribution of the nasal morphology for the studied population and test of sex-associated difference.

Table 2: Distribution of Nasal Morphology and Test of Sex-Associated Difference

	Nasal Morphology				Chi-Square Tests		
	Hyperleptorrhine	Leptorrhine	Mesorrhine	Platyrrhine	df	X^2	P-value
Male	19 9.3%	89 43.4%	84 41.0%	13 6.3%	3	0.891	0.828
Female	19 9.3%	97 47.3%	75 36.6%	14 6.8%			
Total	**38** **9.3%**	**186** **45.4%**	**159** **38.8%**	**27** **6.6%**			

Note: X^2=Chi square, df=degree of freedom

The pre-dominant type of nasal morphology in male was Leptorrhine (43.4%) followed by Messorhine (41.0%), Hyperleptorrhine (9.3%) and the least was Platyrrhine (6.3%).

The table explained that there is no significant variation (P > 0.05) among the nasal morphology of both sexes which states that sexual dimorphism does not occur in the lower right quadrant.

Tables 3a to 3d represent the test of association between lip print types and nasal morphology.

Table 3a: Test of Association between Lip Print Types at Upper Right Quadrant (Urq) and the Nasal Morphology.

Nasal morphology	URQ						Chi-Square Tests		
	Type I	Type I'	Type II	Type III	Type IV	Type V	df	X^2	P-value
Hyperleptorrhine	0 0.0%	3 7.9%	7 18.4%	19 50.0%	4 10.5%	5 13.2%	15	20.497	0.154
Leptorrhine	9 4.8%	8 4.3%	46 24.7%	81 43.5%	23 12.4%	19 10.2%			
Mesorrhine	11 6.9%	21 13.2%	35 22.0%	52 32.7%	25 15.7%	15 9.4%			
Platyrrhine	2 7.4%	0 0.0%	7 25.9%	11 40.7%	5 18.5%	2 7.4%			
Total	**22** **5.4%**	**32** **7.8%**	**95** **23.2%**	**163** **39.8%**	**57** **13.9%**	**41** **10.0%**			

Note: URQ=Upper right quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant pattern who possess the Hyperleptorrhine nasal morphology was Type III (50.0%), followed by Type II (18.4%), Type V (13.2%), Type IV (10.5), Type 1' (7.9) and the least was Type I (0.0%). The most frequent pattern who possess the Leptorrhine nasal morphology was Type III (43.5%), followed by Type II (24.7%), Type IV (12.4%), Type V

(10.2%), Type I' (4.8%) and the least was Type I (4.3%). The most frequent pattern who possess the Mesorrhine nasal morphology was Type III (32.7%), followed by Type II (22.0%), Type IV (15.7%), Type I' (13.2%), Type V (9.4%) and the least was Type I (6.9%).The most frequent pattern who possess the Platyrrhine nasal morphology was Type III (40.7%), followed by Type II (25.9%), Type IV (18.5%), Type I and Type V (7.4%) and the least was Type I' (0.0%). The table explained that there is no significant variation (P > 0.05) among the lip print pattern and nasal morphology.

Table 3b: Test of Association between Lip Print Types at Upper Left Quadrant (Ulq) and the Nasal Morphology.

Nasal morphology	ULQ						Chi-Square Tests		
	Type I	Type I'	Type II	Type III	Type IV	Type V	df	X^2	P-value
Hyperleptorrhine	6	1	11	10	8	2	15	12.685	0.627
	15.8%	2.6%	28.9%	26.3%	21.1%	5.3%			
Leptorrhine	26	14	46	61	23	16			
	14.0%	7.5%	24.7%	32.8%	12.4%	8.6%			
Mesorrhine	24	15	40	50	15	15			
	15.1%	9.4%	25.2%	31.4%	9.4%	9.4%			
Platyrrhine	6	2	10	3	4	2			
	22.2%	7.4%	37.0%	11.1%	14.8%	7.4%			
Total	**62**	**32**	**107**	**124**	**50**	**35**			
	15.1%	**7.8%**	**26.1%**	**30.2%**	**12.2%**	**8.5%**			

Note: ULQ=Upper left quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant pattern who possess the Hyperleptorrhine nasal morphology was Type II (28.9%), followed by Type III (26.3%), Type IV (21.1%), Type I (15.8%), Type V (5.3%) and the least was Type I' (2.6%). The most frequent pattern who possess the Leptorrhine nasal morphology was Type III (32.8%), followed by Type II (24.7%), Type I (14.0%), Type IV (12.4%), Type V (8.6%) and the least was Type I' (7.5%). The most frequent pattern who possess the Mesorrhine nasal morphology was Type III (31.4%), followed by Type II (25.2%), Type I (15.1%) and the least was Type I', Type IV and Type V (9.4%).The most frequent pattern who possess the Platyrrhine nasal morphology was Type II (37.0%), followed by Type I (22.2%), Type IV (14.8%), Type III(11.1%), and the least was Type I' and Type V (7.4%).

The table explained that there is no significant variation (P > 0.05) among the lip print pattern and nasal morphology.

Table 3c: Test of Association Between Lip Print Types at Lower Right Quadrant (Lrq) and the Nasal Morphology.

Nasal morphology	LRQ Type I	Type I'	Type II	Type III	Type IV	Type V	Chi-Square Tests df	X^2	P-value
Hyperleptorrhine	4 10.5%	0 0.0%	5 13.2%	1 2.6%	1 2.6%	27 71.1%	15	20.550	0.152
Leptorrhine	8 4.3%	4 2.2%	15 8.1%	29 15.6%	9 4.8%	121 65.1%			
Mesorrhine	6 3.8%	5 3.1%	11 6.9%	12 7.5%	9 5.7%	116 73.0%			
Platyrrhine	2 7.4%	0 0.0%	5 18.5%	3 11.1%	0 0.0%	17 63.0%			
Total	**20 4.9%**	**9 2.2%**	**36 8.8%**	**45 11.0%**	**19 4.6%**	**281 68.5%**			

Note: LRQ=Lower right quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant pattern who possess the Hyperleptorrhine nasal morphology was Type V (71.1%), followed by Type II (13.2%), Type I (10.5%), Type III and Type IV (2.6%), and the least was Type I' (0.0%). The most frequent pattern who possess the Leptorrhine nasal morphology was Type V (65.1%), followed by Type III (15.6%), Type II (8.1%), Type IV (4.8%), Type I (4.3%) and the least was Type I' (2.2%). The most frequent pattern who possess the Mesorrhine nasal morphology was Type V (73.0%), followed by Type III (7.5%), Type II (6.9%), Type IV (5.7%), Type I (3.8)% and the least was Type I' (3.1%). The most frequent pattern who possess the Platyrrhine nasal morphology was Type V (63.0%), followed by Type II (18.5%), Type III (11.1%), Type I (7.4%), and the least was Type I' and Type IV (0.0%).

The table explained that there is no significant variation (P > 0.05) among the lip print pattern and nasal morphology.

Table 3d: Test of Association between Lip Print Types at Lower Left Quadrant (Llq) and the Nasal Morphology.

Nasal morphology	LLQ Type I	Type I'	Type II	Type III	Type IV	Type V	Chi-Square Tests df	X^2	P-value
Hyperleptorrhine	3 7.9%	1 2.6%	2 5.3%	3 7.9%	0 0.0%	29 76.3%	15	20.682	0.147
Leptorrhine	2 1.1%	11 5.9%	20 10.8%	24 12.9%	2 1.1%	127 68.3%			
Mesorrhine	9 5.7%	6 3.8%	19 11.9%	17 10.7%	4 2.5%	104 65.4%			
Platyrrhine	0 0.0%	0 0.0%	3 11.1%	5 18.5%	2 7.4%	17 63.0%			
Total	**14 3.4%**	**18 4.4%**	**44 10.7%**	**49 12.0%**	**8 2.0%**	**277 67.6%**			

Note: LLQ=Lower left quadrant; X^2=Chi square, df=degree of freedom

The pre-dominant pattern who possess the Hyperleptorrhine nasal morphology was Type V (76.3%), followed by Type I and Type III (7.9%), Type II (5.3%) and the least was Type IV (0.0%). The most frequent pattern who possess the Leptorrhine nasal morphology was Type V (68.3%), followed by Type III (12.9%), Type II (10.8%), Type I' (5.9%) and the least was Type I and IV (1.1%). The most frequent pattern who possesses the Mesorrhine nasal morphology was Type V (65.4%), followed by Type II (11.9%), Type III (10.7%), Type I (5.7%), Type I' (3.8%) and the least was Type IV (2.5%). The most frequent pattern who possess the Platyrrhine nasal morphology was Type V (63.0%), followed by Type III (18.5%), Type II (11.1%), Type IV (7.4%), and the least was Type I and Type I' (0.0%).

The table explained that there is no significant variation ($P > 0.05$) among the lip print pattern and nasal morphology which states that sexual dimorphism does not occur in the lower left quadrant.

Variations in the form of nose is said to be the greatest variation in cranium and it is greater than the body variation. Also, the various shapes of the human nose and the patterns of the lip prints have been proved to be influenced by gender or ethnicity **(**Radha and Srinivasan, 2019).

In this present study, the predominant lip print pattern for both the upper and lower quadrant of both sexes was Type V and the study also revealed sexual dimorphism among the lip print pattern of both sexes in all quadrants except the lower right quadrant. The predominant nasal index in this study was 60.0 which is a leptorrhine (55.00 – 69.90) class of nasal morphology. However, there was no record sexual dimorphism among the nasal index of both sexes.

A study carried out among Igbo students in Madonna University within Elele campus shows Type I to be the prevalent lip print pattern in both males and females. The study reveals no case of sexual dimorphism (Oladipo et al. 2018). The report of Oladipo et al. (2018) is partially similar to a study reported by Adamu et al. (2013) among Nigerians, stating that Type I was predominant in the lower lips of the females and that the males tend to have different patterns in all quadrants, whose result showed no case of sexual dimorphism. The report from these studies contradicts with the prevalent lip pattern in the present study, Also there were recorded cases of sexual dimorphism in the present study.

A study carried out among Karachi (Pakistan) population showed that the prevalent lip print pattern of both sexes was Type III which showed significant gender dimorphism (Gardezi et al. 2017). However Type V was the predominant lip print pattern for both sexes in the present study with record of sexual dimorphism. A study was also carried out among students of Subharati Dental College and it was established that the prevalent lip print pattern among females was Type I and Type I' while the prevalent lip print pattern among the males was Type IV. There was no record of sexual dimorphism in the study (Sharma et al. 2009).

Tahmasebi et al. (2015) revealed that the predominant nasal index among the males and females of Iranian population is 65.46 which is a leptorrhine class of nasal morphology. This report corresponds with the prevalent nasal morphology in this present study and also supports the report of no gender dimorphism. However a study carried out by Ashrani et al. (2015) among the North and Southern Indians reported a nasal index value of 75.00 (mesorrhine) as the predominant nasal index with no case of sexual dimorphism and it contradicts with the predominant nasal index of this present study. Also, a study carried out by Radha and Srinivasan, (2019) reported that the predominant nasal index among the male and female population of the south Indian was 60.00 (leptorrhine), supporting the nasal index value reported in this present study with no case of sexual dimorphism.

Eboh and Nwajei, (2012) conducted a study of lip print among the Urhobo tribe in Delta state and discovered Type II to be the Predominant lip print pattern in both males and females, It was also established in Oladipo et al. (2018) that the cheiloscopic pattern for the Igbo ethnic group in Nigeria is Type I while the least was Type I'. However, the lip print pattern of the Urhobo and Igbo tribe does not correspond with the lip print pattern of the Egba ethnic group,

but the least lip print pattern for Egbas was similar with that of the Igbo tribe.

The prevalent nasal index value of the Egbas in this present study contradicts with the prevalent nasal index value of a study carried out by Oladipo et al. (2007) among the major ethnic groups in southern Nigeria (Ijaws, Igbos and Yorubas), which states that males have a higher nasal index (> 85.0, platyrrhine) than the females, with revealed presence of sexual dimorphism. However, an anthropometric study of the nasal index and sex was carried out earlier among the Bekwarra ethnic group (one of the minority ethnic group within the Northern Cross river state) which showed 85.00 to be the predominant nasal index which is the typical African nose type (platyrrhine) (Esomonu et al. 2013).

In this study there was no significant association between nasal index and lip print. However, there is paucity of literature with respect to this comparison.

CONCLUSION

This study provides the predominant nasal shape among Egba ethnic group of Nigeria to be Leptorrhine (Nasal index is 60.00) which serves as an important anthropometric tool used in reconstructive surgeries (rhinoplasty surgery) of the nose. Conversely, this peculiar nasal shape and the predominant lip print pattern (Type V) which is sexually dimorphic can provide insight in personality identification in crime scene and in mass disaster in developing country like Nigeria.

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