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ANTHROPOMETRIC COMPARISON OF NASAL INDICES BETWEEN THE IGBOS AND YORUBAS IN NIGERIA

G. S. OLADIPO, I. U. GWUNIREAMA and O. D. ASAWO

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ABSTRACT

This study was carried out to compare the nasal indices of Igbo and Yoruba for any existing ethnic differences or similarities.

The study was carried out using Seven hundred and fifty (750) subjects of each tribe who were purely of either Igbo or Yoruba ethnic group by both parents and grand parents. They were selected at random from some Universities in Nigeria. Four hundred and ninety (490) of the Igbo subjects were males while the remaining two hundred and sixty (260) were females. Four hundred and forty three (443) of the Yoruba subjects were males while the remaining three hundred and seven (307) were females. The ages of subjects ranged from 18-30 years.

Nasal height (NH) and breadth (NB) were measured and nasal index calculated as: NB/NHx100.

The result showed that the Igbo males and females had mean nasal indices of 95.8±0.44 and 90.8±0.61 respectively. While the Yoruba males and females had mean nasal indices of 90.0±0.38 and 88.1±0.47respectively. The Igbo s(total) had a mean nasal index of 94.1±0.37 while the Yorubas (total) had a mean nasal index of 89.2±0.30.Using discrete statistics, the mean nasal indices of the Igbo males and females were significantly higher ($P < 0.05$) than the mean nasal indices of the Yoruba males and females respectively.

Also generally, the Igbos has a significantly higher ($P < 0.05$) mean nasal index than the Yorubas. However, the Yoruba and the Igbo still fall within the same nose type called the Platyrrhines. The result of this study has shown that the Igbos and the Yorubas are of different ethnic origin. Thus, the data of this study is recommended in anthropological studies.

KEYWORDS: Nasal Indices, Igbos and Yorubas

INTRODUCTION

Physical anthropology relies mainly on external measurements and description of the human body and in particular upon the skeleton. Such measurements are useful and can be applied in the analysis and classification of fossil remains as well as the study of living population. The nasal index measurement is one of the methods anthropologists have used in differentiating living races and subspecies of man (Risley , 1915). It is the most common nasal measurement which may be related to regional and climatic differences (Farkas et al, 1986)

Nasal index is the ratio by (x) 100 of the greatest width of the nasal aperture to the height of the nasal skeleton (Williams et al, 1995). Based on the nasal index, the nose has been classified into three major types namely: leptorrhine or fine nosed (69.9 or less), mesorrhine or medium-nosed (70.0-84.9) and platyrrhine or broad nosed (≥85.0) (Risley H.H, 1915). Several reports exist on nasal indices of Caucasian populations with a few African population and very few on Nigerians. Risley (1915) reported the nasal indices of Indo-Aryan and Sudroid(Indian Negroids). The Indo-Aryans were reported to have nasal indices of 66.9-79.6 while the Sudroid have nasal indices of 73.1-95.1.Porter et al (2001) reported a nasal index of 79.7 for the African American women. Daniel B (2002) reported nasal indices for various races as follows: Lebanon 63.30, Alawite 62.74, Damascus 63.26, Homs-Hama-Aleppo 58.66, Armenians 63.80, Greeks 68.49 and Arabic 74.48. Akpa et al, 2003 reported the nasal parameters of Nigerian Igbos. He reported length, height and width of males and females as 6.31, 1.99, 7.50 and 6.04, 1.92, 6.80 respectively.

Values of nasal index are scarce in literature especially in Africa and most especially in Nigeria. No comparative study using nasal index has been carried out on the tribes under investigation. Thus, this study was aimed at documenting a data on nasal indices of these Nigerian tribes, which could be of importance in anthropological studies and clinical practice (nasal surgery)

MATERIALS AND METHODS

A total number of one thousand five hundred (1500) subjects which comprised 750 Igbos and 750 Yorubas with ages ranging from 18- 30years were used for the study. Four hundred and ninety (490) of the Igbo were males while two hundred and sixty (260) were females. . Four hundred and forty three (443) of the Yoruba subjects were males while the remaining three hundred and seven (307) were females. The subjects who were purely of either Yoruba or Igbo ethnic origin by both parents and grand parents, were selected at

G. A. Oladipo, Department of Anatomy, Faculty of Basic Med. Sci., College of Health Sciences, UniPort P.M.B. 5323, Port Harcourt
I. U. Gwunireama, Department of Anatomy, Faculty of Basic Med. Sci., College of Health Sciences, UniPort P.M.B. 5323, Port Harcourt
O. D. Asaow, Department of Anatomy, College of Health Sciences, University of Port Harcourt, Port Harcourt - Nigeria

random from University of Port Harcourt (UNIPORT), Federal University of Technology Owerri (FUTO), University of Nigeria Nsukka (UNN), University of Ibadan (UI) and Obafemi Awolowo University Ife (OAU).

Subjects who had trauma of the nose and congenital abnormalities such as cleft lips were excluded in the study.

The height of the nose (nasal height) and nasal breadth were measured using sliding caliper with accuracy of 0.01.

Nasal height (NH) was measured as the distance between the nasion and nasospinale (A1). See figure 1. Nasal breadth (maximum breadth of the nose) was measured at right angle to the nasal height from ala to ala (A2) as shown in figure 2. Nasal index was calculated as NB/NH X 100 (Williams et al, 1995). The results were tabulated and discrete statistics was used for test of significance.

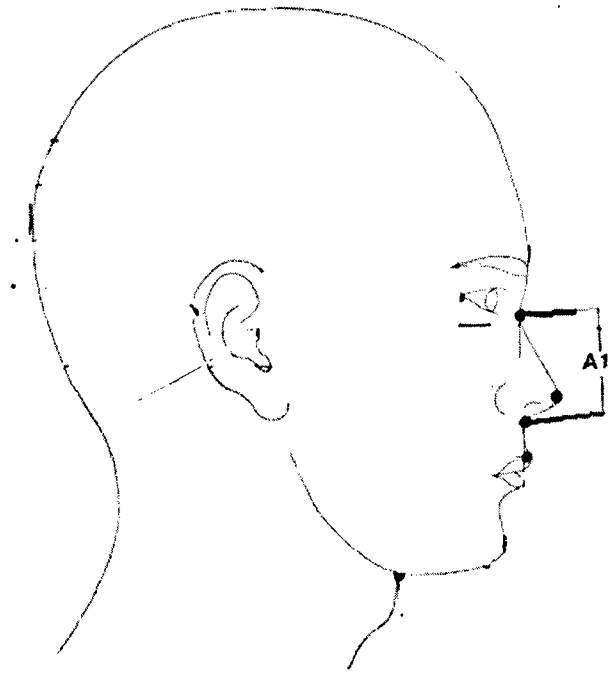

Figure 1: Scheme to show measurement of nasal height (NH).

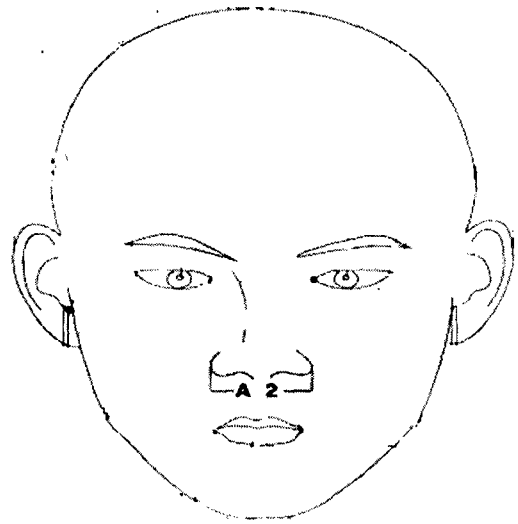

Figure 2: Scheme to show measurement of nasal breadth (NB)

RESULTS

The results of this study are shown in tables 1 and 2. Table 1 shows the group data of nasal indices in Igbo and Yoruba tribes. In all, the nasal index group of 86.3-96.3 had the highest frequency in all Nigerian ethnic groups studied while nasal index group of 116.6-126.6 had the least. From table 2, the mean nasal index of males was significantly higher than females in both ethnic groups. The Igbos also had significantly higher ($P < 0.05$) nasal indices than the Yorubas. Thus the Igbos had a broader and shorter nose than the Yorubas. Table 3 shows the nasal index (NI) from various populations

TABLE 1: SUMMARY OF GROUP DATA OF NASAL INDICES IN IGBO AND YORUBA TRIBES

CLASS OFNASAL INDICES	FREQUENCY OF OCCURENCE OFTYPES OF NASAL INDICES					
	IGBO MALES	YORUBA MALES	IGBO FEMALES	YORUBA FEMALES	TOTAL IGBO	TOTAL YORUBA
71.1	8	7	15	20	23	27
81.2	64	133	70	98	134	231
91.3	190	231	103	155	293	386
101.4	161	56	56	27	217	83
111.5	59	14	16	6	75	20
121.6	8	2	0	1	8	3

TABLE 2: MEAN, STANDARD DEVIATION AND STANDARD ERROR OF NASAL INDICES OF IGBO AND YORUBA TRIBES.

TRIBES AND SEXES	IGBO MALES	YORUBA MALES	IGBO FEMALES	YORUBA FEMALES	PARAMETERS FOR IGBOS	PARAMETERS FORYORUBAS
SAMPLE SIZE	490	443	260	307	750	750
MEAN	95.9	90.0	90.8	88.1	94.1	89.2
STANDARD DEVIATION	9.8	8.1	9.9	8.3	10.1	8.2
STANDARD ERROR	0.44	0.38	0.61	0.47	0.37	0.30

$P < 0.05$.

TABLE 3: COPARATIVE DATA ON NASAL INDICES (N.I) OF VARIOUS POPULATIONS

Country/People	Authors And Dates	Nasal Index
Lebanon	Daniel (2002)	63.3
Alawite	" "	62.74
Damascus	" "	63.26
Homs-Hama-Aleppo	" "	58.66
Armenians	" "	63.80
Greeks	" "	68.49
Arabic	" "	74.48
Indo-Aryans	Risley (1915)	73.25
Indian Negroids (Sudroids)	Risley (1915)	84.10
African Americans	Porter et al (2001)	79.7
Rajputs	Mulchand (2004)	71.6
Africans	Risley (1915)	90-100
Nigerian Igbos	Akpan et al (2003)	116.7
Nigeria Igbos	Present Study (2005)	94.1
Nigeria Yorubas	Present Study (2005)	89.2

DISCUSSION

The nose is one of the best clues to racial origin (Madison Grant, 2004). Also, nasal analysis is the first step a surgeon takes prior performing rhinoplasty (plastic surgery) to change the shape and size of the nose (Porter et al. 2003). Nasal index is related to regional and climatic differences (Farkas et al 1986). Thus racial or ethnic differences have been reported by several authors. Most Caucasians are leptorrhine , having long and narrow nose with nasal index of 69.9 or less. The Bantu speaking Negroes, Bushmen as well as the Australoids of the Austria are platyrrhine, having broad nose with nasal index of 85.0 and above (Risley , 1915). Risley (1915) also reported that the Sudroid race have nasal index similar to the Negroids and Australoids with nasal index of 85.0 and above (platyrrhine), while the Aryan race is similar to the Caucasians with nasal index of 71.0 and below (leptorrhine) Also, Mulchand (2004) showed that the Rajputs race have a nasal index of 71.6 (leptorrhine) which clearly distinguishes them from the mesorrhine Caucasoid of the early Indo-Aryans. Akpa et al (2003) showed that the mean nasal length and width for Nigerian Igbos are 6.22 and 7.26, thus expected to have nasal index of 116.7 (platyrrhine).

The results of the present study conform to Risley (1915) report on African population with nasal index of 90-100, but differ from other authors on Caucasians population as expected. The values of nasal indices observed in this study are at variant with those of Akpa et al., (2003). This could be due to the fact that a more accurate measuring instrument (caliper) was used in this study as opposed to theirs where tape rule was used. Our findings in this study showed that the Igbos have a significantly larger nasal index ($P<0.05$) than the Yorubas. Also, sexual dimorphism exists in nasal indices in the two ethnic groups. This is also at variant with Akpa et al (2003) result on Igbo population.

From the result of this study, the Igbos and Yorubas could be said to fall within the African nasal classification (platyrrhine or broad nose).

CONCLUSION

Conclusively, ethnic differences exist in nasal indices of the Igbos and Yorubas. Thus they have different ethnic origin. This data is an important anthropometric tool in differentiating the Nigerian Igbo and Yoruba tribes

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