

ANTHROPOMETRIC COMPARISON OF CEPHALIC INDICES BETWEEN THE URHOB0 AND ITSEKIRI ETHNIC GROUPS OF NIGERIA

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ABSTRACT

Cephalic index is an important parameter for classifying populations. In the present study, one thousand students with age ranging from 18 to 25 years of Urhobo and Itsekiri origin from rural and urban areas of Delta State of Nigeria were measured. The study was aimed at determining possible similarities and differences in the cephalic indices of the Urhobos and Itsekiris. The subjects were measured for head length and head breadth and cephalic index was worked out by dividing the head breadth by head length and multiplying by 100. Five hundred subjects comprising 250 males and 250 females for each tribe were measured. The cephalic indices for both groups were calculated and the result analyzed using z-test. On the average, the mean cephalic index in the two groups was >80 which puts them in the brachycephalic population. The z-test analysis indicated that there was significant difference between the Itsekiri males and Urhobo males and between the Itsekiri males and Urhobo females-However there was no significant difference between the two groups in general ($P>0.05$). The result of this study will be of importance in forensic medicine, anthropology and in genetics.

KEYWORDS: Cephalic index, ethnic groups and anthropology.

INTRODUCTION

Cephalic index is an important parameter for classifying populations. It is very useful anthropologically to find out racial differences (Shah and Jadhav, 2004). It can also be used to find out sexual differences (Williams et al 1995). Diagnostic comparison between patients and normal population has been made possible with the aid of standardized cephalometric records (Rabey, 1971). Thus Stolovisky and Todd (1990) reported that dolicocephalic persons have otitis media less often than brachycephalic persons. Cohen and Kreiorg (1994) also reported that individuals with Aperts syndrome are hyperbrachycephalic.

Several reports exist on cephalic indices of Caucasians with few adult African populations and very few on Nigerians. Kassai et al (1993) reported cephalic indices of Japanese and Australians populations. Basu (1963) reported men cephalic index of 76.98 for Bhils race. Bhargav and Kher (1961) and Shah et al (2004) reported mean cephalic indices of 79.80 and 80.81 for Barelias and Gujarat races of India respectively. Okupe et al (1984) reported significantly higher fetal cephalic indices for Nigerians than the Caucasians. Obikili et al (2004) also studied the cephalic indices of Nigerians using living subjects.

The first comprehensive report on cephalic indices of Ijaws and Igbos was made by Oladipo and Olotu (2006). They reported mean cephalic indices of 80.98, 78.24, 79.04 and 76.83 for Ijaw males, Ijaw females, Igbo males and Igbo females respectively. The report showed that on the average the cephalic indices with two tribes were less than 80 but greater than 75 which put them in the mesocephalic population.

However, no study on the cephalic indices of the ethnic groups under investigation has been carried out. Thus this study was aimed at documenting cephalic indices of these Nigerian ethnic groups which could be of importance in anthropological studies forensic medicine and clinical practice.

MATERIALS AND METHODS

In the present study, one thousand (1000) subjects were selected from communities of Delta State of Nigeria. Subjects were selected after their consents obtained. Five hundred (500) of the subjects comprising 250 males and 250 were of either Urhobo or Itsekiri origin by both parents and grand parents. The age of the subjects ranged from 18-25 years. Subjects with craniofacial trauma and obstructive hairstyles were not used. The head length was measured with spreading caliper from glabella to inion (Obikili et al, 2004). Similarly head breadth was measured as the maximum transverse diameter between the two fixed points over the parietal bones (Oladipo and Olotu, 2006). All measures were taken in centimeters and to an accuracy of 0.10. All measurements were taken with subject sitting on a chair, in a relaxed mood and the head in the anatomical position. Cephalic index was calculated as bi-parietal diameter/length of head x 100. The data was subjected to statistical analysis using a z-test.

RESULTS

Statistical analysis using a z-test was carried out on data collected. The results were presented in tabular forms. The mean cephalic indices of Urhobo and Itsekiri

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males were found to be 86.50 and 94.41 respectively. In Urhobo and Itsekiri females, they were found to be 87.09 and 82.16 respectively. For the total population (males and females), Urhobo groups had a means cephalic index of 86.80 while Itsekiri group had a mean cephalic index of 88.28.

Thus the Itsekiri males had the highest cephalic index (94.41) while the Itsekiri females had the lowest cephalic

index (82.16). Though there was a significant difference between the Itsekiri males and Urhobo females, the differences between the two ethnic groups in general was however not statistically significant ($P>0.05$). Also no sexual dimorphism was observed in urhobos ($P>0.05$).

Table 1: Means and standard deviation of cephalic indices of Urhobos and Itsekiris

Variables	Males		Females		Total males & females	
	Urhobo	Itsekiri	Urhobo	Itsekiri	Urhobo	Itsekiri
Mean	86.50	94.41	87.09	82.16	86.80	88.28
Sample size	250	250	250	250	500	500
Standard deviation	9.06	34.44	11.30	44.74	10.24	40.35

Table 2: Z-test result of the comparison between the various groups

Variables	Z-calculated	Z-tabulated	Level of significance	Decision
Urhobo males vs Itsekiri males	3.51	± 1.96	0.05	Significant
Urhobo females vs Itsekiri females	1.69	± 1.96	0.05	Not significant
Urhobo males vs Itsekiri females	1.51	± 1.96	0.05	Not significant
Itsekiri males vs Itsekiri females	3.19	± 1.96	0.05	significant
Itsekiri males vs Urhobo females	0.64	± 1.96	0.05	Not significant
Urhobo vs Itsekiri	0.80	± 1.96	0.05	Not significant

DISCUSSION

Racial variations in the cranium were recorded by Williams et al (1995). Variations in cephalic indices between and within populations have been attributed to a complex interaction between genetic and environmental factors (Kassai et al, 1993). Bhils race were reported as being mesocephalic (Bahargav and Kher, 1960). Similarly, Barelais of India (Bahargav and Kher, 1961) and Kvanga race (Basu, 1963) were said to be brachycephalic (Shah et al, 2004).

Study on cephalic indices of Igbos and Ijaws males (80.98) and females (78.04) in brachycephalic group and mesocephalic group respectively while Igbo males with C.I of 79.04 and Igbo females with C. I of 76.93 were put in mesocephalic group (Oladipo and Olotu, 2006).

The cephalic indices of Isekiri and Urhobo people (present study) were at variance with those of Igbos and Ijaws as the Itsekiris and Urhobos were in hyperchrycephalic group. Itsekiri males and females were however, in Utrabrachrycephalic and brachycephalic groups respectively.

CONCLUSION

Although cephalic index is sexually diamorphic among Itsekiri however no such difference exists among Urhobos. In general, Itsekiris and Urhobos belong to the same classification-hypercrachycephalic which differentiate them from Ijaws and Igbos. However, no significant difference exists between the Itsekiris and Urhobos. Thus the two ethnic groups who incidentally belong to the same geographical region of Nigeria appear to have common origin. The result of this study is expected to be of immense importance to anthropologists, forensic scientists and as basis of comparison for future studies on other Nigeria ethnic groups.

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