Facial Index as seen at the University of Ilorin Teaching Hospital (UITH), Ilorin Nigeria.

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Abstract:
Background: University of Ilorin Teaching Hospital is a 500-bed hospital located in Ilorin the Kwara state capital in North Central zone of Nigeria. It subserves about eight states namely Kwara, Kogi, Niger, Oyo, Osun, Ekiti, Lagos, part of Kebbi state and The Federal Capital Territory (FCT) Abuja.

Objectives: To determine the facial index in the target population, compare it in both sexes and with previous studies in the literature.

Methodology: Eight hundred and ninety three volunteers (428 males and 465 females) within the age range of 18 to 35 years were recruited for the study. Data were obtained from them using standard anthropometric methods and were analysed using the Statistical Package for Social Science (SPSS Version 17.0) computer software. Values were expressed as mean standard deviation (SD) and a p-value of <0.05 was considered significant.

Results: Male to female ratio was 1:1.1, mean age for male was 26.48± 4.86 and female was 26.31±4.85. Mean BMI was 22.37± 1.73kgm² for males and 22.21±1.71 for females. Yoruba (82.3%) constitute the majority and the rest were Hausa (7.1%), Fulani (4.6%), Ibo (4.1%).

Euriprosopic face shape (72%), Mesoprosopic (14%), Leptoprosopic (9%), Hypereuriprosopic (5%) and Hyperleptoprosopic (0%).

Conclusion: Euriprosopic face shape was most common in both males and females, and also in the studied population.

Key words: Facial, index, nasion-gnathion, bizygomatic, shape

Introduction
There are a number of ways in which anthropometric information can be utilized and there are several large databases of measurements from thousands of people which can be used for the purpose of comparison and study.¹ Anatomists take measurements which enabled them to compare different body organs and the artists take measurements to make their work accurate.²

Physicians take such measurements to provide information about health. While much of the earlier study of anthropometrics has been debunked, there are still a wide range of applications for measurements of the body³. These measurements are useful in forensic medicine, victims identification and reconstructive surgery.⁴ Facial Index (FI), has been defined as the ratio between nasion-gnathion height and bizygomatic width multiplied by one hundred.

Based on the facial index, face shape can be categorized into five types as shown below.

Figure.1: Face shapes adapted from Banister M et al⁵.
Facial Index as seen at the University of Ilorin Teaching Hospital (UITH), Ilorin Nigeria.

When the facial index is ≤ 79.9, the individual is said to have hypereuriprosopic (very broad) face shape and when it is between 80–84.9, it is euryprosopic (broad) face shape. Similarly, when the index is between 85–89.9, it is mesoprosopic (round) face shape. Leptoprosopic (long) face is an index of between 90–94.9 and hyperleptoprosopic (very long) face is ≥ 95.

**Methodology**

A structured questionnaire was administered to volunteered subjects of 432 males and 470 females after an informed consent. Anthropometrical measurements of face length and width were taken from them using a digital calipers. Recruited for the study was done by a simple random sampling technique. Twelve of them were however disqualified from the study owing to abnormal Body Mass Index and severe facial scar and contractures. The remaining 893 subjects, consisting of 428 males and 465 females were analyzed.

**Results:** The mean age was 26.40±4.86 for the target population, 26.48±4.86 years for males, and 26.31±4.85 years for females. The age range was 18 – 35 years and there was no significant difference between the two sexes (p-value>0.05). The modal age group in the study was the 26-30 years shown in Figure 2 below. The mean BMI for males was 22.37±1.73kgm² and females was 22.21±1.71kgm². It was found that 406 (72%) had Euryprosopic face shape, 79 (14%) had Mesoprosopic face shape, 51(9%) had Leptoprosopic face shape, 28 (5%) had Hypereuryprosopic face shape and nobody in the study population had Hyperleptoprosopic face shape shown in figure 3.

**Discussion**

It is said that climatic conditions have influence on the various anthropometric parameters we get. The mean Body Mass Index (BMI) for the population was normal for age group studied, thus all the participants were within normal BMI range and hence effect of obesity on facial values were minimized. Most individuals had Euryprosopic face shape (broad face) and this was also dominant in both males and females. With the rare face types as leptoprosopic, mesoprosopic and...
hypereuryprosopic constituting the remaining the minority. These values were similar to those obtained by previous researchers.\textsuperscript{80-81}

It was also found that sex, age, ethnicity and the environment had effect on facial dimensions and hence face shape as earlier shown\textsuperscript{10}.

In this study, facial measurements were significantly higher in males than females which again demonstrated the existence of sexual dimorphism.\textsuperscript{85-90}

**Conclusions:**

Data obtained from this study will be useful in forensic medicine, reconstructive surgery, facial identity of victims and the different ethnic groups.

**References**


