

# Facial Dimensions In Urhobo's Of Nigeria

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## Citation

O Ebeye, E Emore, E Ebite, N Ijeh. *Facial Dimensions In Urhobo's Of Nigeria*. The Internet Journal of Biological Anthropology. 2009 Volume 4 Number 1.

## Abstract

This cross-sectional study reports the data of five facial measurements: facial height nasal height, maxillary height, mandibular height and orofacial height among the Urhobo people of southern Nigeria. Sample size comprised of 140 individual, 60 males and 80 females. The result of the study showed that Urhobos are mesoprosopic. Sexual dimorphism was also observed with males having significantly higher indices than female ( $P < 0.05$ ). This study provides a base line data for the Urhobo people of Southern Nigeria.

## INTRODUCTION

Variation is one of the most important phenomena occurring in human population on the globe<sup>1</sup>. Variations are present not only between individuals but also within individuals from time to time. The following authors<sup>1,2,3</sup> emphasized the importance of anthropometric measurements as a means of studying variation in human populations. Anthropometry is a series of systematized measuring techniques that expresses quantitatively the dimensions of the human body and skeleton<sup>4</sup>.

Variation occurs in various part of the body. The face provides our identity as an individual. It is described as the anterior aspect of the head, from the forehead to the bottom of the chin and from one ear to the other<sup>5</sup>. The shape of the face is determined by underlying bones, buccal fat pads in the cheeks and the facial muscles<sup>5</sup>.

The face is used as the first step in the evaluation of a patient who presents for cosmetic or reconstructive procedure. It is an important aspect of initial encounter, as it helps to formulate the goals and desired outcome of proposed surgical procedure. Facial beauty arises from symmetric, balanced and harmonious proportions<sup>6</sup>. The face also plays an important role in communication. Standards on facial proportion exist for Americans, Indians and other populations but only a few exists for Nigerians. Jennifer and Krista did a study on differences in facial proportions between African American women and Caucasian women<sup>6</sup>. A difference in facial proportion between North American white men and African American white men were also established<sup>6</sup>. A base line study was done on photometric

facial analysis in adult Himachali males<sup>7</sup>. Cephalometric standards for Iranians,<sup>8</sup> Saudis,<sup>9</sup> Jordanians<sup>10</sup> and Egyptians<sup>11,12</sup> have also been established. Values of the nasal height, facial height, maxillary height, mandibular height and orofacial height of African tribes from various geographical regions and ethnicity are not as readily available as figures from other parts of the world; however, nasal indices in some ethnic groups in Southern Nigeria have been established.<sup>13</sup> Oladipo et al., studied nasal parameters of Itsekiri and Urhobo of Nigeria.<sup>14</sup> Facial and nasal length of adult Igbos' have also been established.<sup>15</sup> It is well established that a single standard of facial esthetics is not appropriate for application to diverse racial and ethnic groups<sup>16,17,18</sup>. Therefore, researches on craniofacial study of different ethnic groups are on going with the intention to establish ethnic specific anthropometric data for populations with different ethnic background.<sup>14</sup> Anthropometry of the face is important as it is used in designing facial equipments like goggles and face mask by formulating standard sizes. It also plays a major role in facial surgery.

This present study was carried out to document and provide a baseline data of nasal height, facial height, maxillary height, mandibular height and orofacial height amongst adult Urhobos'. This would be useful in clinical practice, forensic and anthropological studies.

## THE PEOPLE

The Urhobo constitute the 10th largest ethnic group in Nigeria with the major occupation of farming, fishing and hunting. They occupy a territory bounded by latitude 5° 15' and 6° North and 6° 25' East.<sup>19,20,21</sup>

**MATERIAL AND METHOD**

A cross-sectional study was carried out using a total of 140 young adult volunteers. 60 males and 80 females, age ranged between 18 and 30years. They were all born in Nigeria of Urhobo parentage to the second generation and had had no prior plastic or reconstructive surgery of the face. Each subject was made to sit in a relaxed and upright position with head unsupported following conventional methods described by the following studies<sup>22-27</sup>. The following parameters were then taken using a sliding digital caliper:

- Facial height: this was taken longitudinally from the nasion to the menton.
- Nasal height: this was taken from nasion to subnasion.
- Maxillary: this was taken from subnasion to the tip of the maxillary incisor teeth.
- Mandibular height: this was taken from tip of mandibular incisor teeth to the menton.
- Orofacial height: this was taken from subnasale to the menton.

**RESULTS AND DISCUSSION**

**Figure 1**

VARIABLES	MALE		FEMALE		P value
	Mean (cm)	SD ± SE	Mean (cm)	SD ± SE	
Facial height	12.61	4.13 ± 0.53	11.91	3.44 ± 0.38	P<0.05
Nasal height	4.56	1.48 ± 0.19	4.27	1.20 ± 0.13	P<0.05
Maxillary height	2.68	0.84 ± 0.12	2.21	0.65 ± 0.07	P<0.05
Mandibular height	4.52	1.47 ± 0.18	4.14	1.19 ± 0.13	P<0.05
Orofacial height	6.75	2.18 ± 0.28	6.36	2.15 ± 0.19	P<0.05

Measures of variation are shown in table 1 as well as P values which were used to compare the male and female Urhobo. The table shows mean values of facial dimensions as follows. Facial height for males is 12.61cm while it is 11.91cm for females; nasal height for males is 4.56cm and 4.27cm for females; maxillary height for males is 2.68cm and 2.21cm for females; mandibular height is 4.52cm for males and 4.14cm for females; oro-facial height is 6.75cm for males and 6.36cm for females. All of the variables studied have the mean male values higher than those of the female, this was statistically significant (P<0.05). This

revealed that the male Urhobo face is on the average longer and wider than female Urhobo face. Following standard facial height dimension published by World health organization (WHO), facial height ranged between 12cm-12.99cm. The male Urhobo “face” fell within this range while the female Urhobo “face” fell slightly lower. These findings agreed with a previous study on anthropometry of facial and nasal length of adult Igbo.<sup>15</sup>

This study reveals that the Urhobo people are mesoprosopic; that is they have moderate facial form. Sexual dimorphism was also observed with males having significantly higher indices than females (P<0.05).

In conclusion, a data base on facial dimension in Urhobo people has been established. This information will be very useful to facial plastic surgeons and dentists who try to achieve facial beauty which is supposed to be in congruent with patients’ ethnicity. It will also be useful to those that make facial equipment.

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