ORIGINAL RESEARCH PAPER

Volume-8 | Issue-1 | January-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

COMPARISON OF FACIAL INDEX BETWEEN MALE AND FEMALE STUDENTS OF FARIDABAD (HARYANA)

Anatomy

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ABSTRACT

This study was conducted in department of anatomy, Al Falah medical college Faridabad, on 300 students from Al Falah University comprising of 150 males and 150 females in age group 18-24 years. Two measurements, the morphological facial length, bi-zygomatic breadth were taken by using manual caliper. Form the study it was found that the facial index in male and female was 88.19 and 85.88 respectively. Data was analyzed using SPSS version 16 & the difference of facial index between the male and female students was found to be statistically significant. Data of this study will be useful to anthropologist, plastic surgeons, anatomists and forensic experts.

KEYWORDS

Anthropometry, Facial Index, Faridabad

INTRODUCTION

Facial index is an anthropometric trait which is used to describe the facial proportions. Anthropometry is a measurement of man, living or dead, and consists primarily in the measurement of the dimensions of the body (Ashley Montagu, 1951). Racial and sexual differences can be described using facial anthropometric measurements (Heidari, Sagheb & Mugahi 2006; Jahanshahi , Golalipour & Heidari, 2008). Assessment of facial type is also crucial for the planning and prognosis of orthodontic treatments. Facial pattern indicates the direction of growth of craniofacial complex (Tsunori , Mashita & Kasai 1998; Dibbets, 1996). The Indian populations belong to the mesoprosopic facial index, which varies from hypereuryprosopic to hyperleptoprosopic index (Bhasin, 2006).

MATERIALS AND METHODS

For this study 300 students of Al Falah University were taken as subjects which included paramedical students of medical college and students of engineering college. In this 150 were males and 150 were females, all normal healthy state and age group between 18-24 years. For the measurements manual caliper was used. Measurement process was explained and consent was taken from each student.

Same process was used for all the measurements, students were asked to sit straight in a relaxed state looking forward with mouth closed and teeth in centrally occluded position. In order to eliminate diurnal variations, study was performed in a fixed time interval.
Facial index was calculated using following formula

Facial index= (Facial length/Facial width) X 100

Facial length is the measurement between nasion and gnathion, while the facial width is the measurement between two zygomatic prominences.

According to the facial index, facial shape is classified into following categories.

Table 1: Classification of facial shape according to the Facial index

Type of face	Facial index
Hypereuryprosopic	<79.9
Euryprosopic	80.0-84.9
Mesoprosopic	85.0-89.9
Leptoprosopic	90.0-94.9
Hyperleptoprosopic	95.0- >95

Statistical analysis

Statistical package for social sciences (SPSS) version 16 was used to analyze the data. Statistical significance of sex differences of facial index was examined using independent t-test.

RESULT

Measurements and distribution of the study is provided in table 2 and 3

Table 2: Measurements of facial parameters in Male and Females

Gender	Mean ± Standard Deviation (in mm.)		Facial index
	Facial length	Facial width	
Male	110.80±2.39	126.94±2.31	88.19±2.89
Female	102.64±2.26	119.57±2.04	85.88±2.09

Table 3: Distribution of facial index in male and females

Type of face	Facial index	Male	Female
Hypereuryprosopic	<79.9	6	12
Euryprosopic	80.0-84.9	47	50
Mesoprosopic	85.0-89.9	48	47
Leptoprosopic	90.0-94.9	31	18
Hyperleptoprosopic	95.0- >95	6	12
Total		150	150

DISCUSSION

In a study by Bhasin (2006), Indians showed dominant type face shape which is Mesoprosopic. The mean value of facial index among Indians was 86.34. The study was in correlation with present study indicating that Mesoprosopic face shape is dominant type of face shape in Faridabad population in the age group 18 to 24 years.

Sapana Shah et al (2012) found in her study that the value of facial index 89.86 and 87.06 in Gujarat region and concluded that males have Mesoprosopic and females have Euryprosopic facial shape.

When our study was compared with Malaysian Indians a study by Ngeow & Aljunid (2009) showed that facial index of males was 85.5 and in females it was 85.4 which showed to be Mesoprosopic. Present study showed slight higher value of facial index males and females (88.19 and 85.88) in comparison to above study.

In a study conducted by Jahanshahi et al (2008) of native Fars and Turkman ethnic groups the dominant type of face shape in both native Fars and Turkman females was euriprosopic (37.7% and 51.7%, respectively). The dominant type of face shape in both native Fars and Turkman males was mesoprosopic (44% and 38.4%, respectively).

In the present study highly significant difference is found between both the gender and the value was found to be higher in males than females. Facial index is crucial for orthodontic treatment. This study is important in medical applications such as cosmetology and orthodontists, facio-maxillary surgeons, plastic surgeons, anatomists, physical anthropologist and forensic experts for various anthropological purposes.

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