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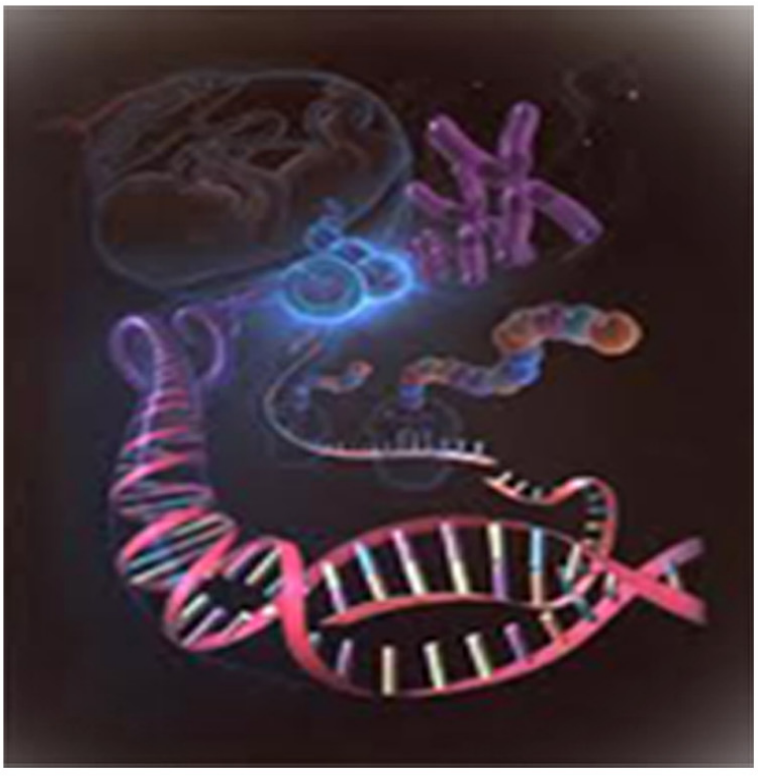

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Research Paper

A STUDY OF FACIAL INDEX AMONG NORTH AND SOUTH INDIAN STUDENTS OF JSS MEDICAL COLLEGE

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Introduction: Anthropology used for the identification and understanding of human physical features. It helps in classification of races and identification of human remains. Anthropometric measurements have direct correlation between sex, age, shape and various form. The facial anthropometric measurements helps to describe the racial and sexual difference. The facial index is the ratio of the maximum length of the face to its maximum width and multiplied by 100 for convenience. Objectives: To compare the facial index among South Indians and North Indians of JSS Medical college students. To compare the facial index between males and females of JSS Medical college students. Materials and Methods: A cross sectional study was conducted from January 2010 to January 2012. Study includes 171 medical students of JSS University. Among them 126 are South Indians and 45 are North Indian students. Subjects were chosen from simple random sampling technique from JSS Medical colleges. Age group of the study group was between 18-22 years. Facial length and facial breadth was measured using sliding and spreading calipers. Observation and Results: In our study we found that Leptoprosopic form is the commonest type of facial form among South Indians and North Indians. We observed the long face is the dominant form in both the North and South Indian males and the least common was very broad face (Hypereuryprosopic). Among females also long face (Leptoprosopic) is the most common facial form in both North and South Indians.

Keywords: Anthroprometry, Facial index, Leptoprosopic

INTRODUCTION

Anthropometry is a Greek word which means measurement of man: *anthropos*-man and *metron*-refers to the measurement. Anthropometry is a science which deals with the measurement of human beings, whether living or dead or of skeletal materials and constitutes a series of systematized measuring techniques of expressing quantitatively the form of the human body and skeleton (Krishan and Kumar, 2007).

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Anthropology used for the identification and understanding of human physical features. It helps in classification of races and identification of human remains. Anthropometric measurements have direct correlation between sex, age, shape and various form. Cephalometry is a branch of anthropometry which deals with the measurement of face and head. The facial anthropometric measurements helps to describe the racial and sexual difference (Heidari *et al.*, 2006; and Jahanshahi *et al.*, 2008). It is an important tool while planning in reconstructive surgery and is of significant application in forensic investigations. It is also of great significance for studying growth trends and in Orthodontics.

The facial index is the ratio of the maximum length of the face to its maximum width and multiplied by 100 for convenience. The Indian populations belong to the Mesoprosopic facial index, which varies from Hypereuryprosopic to Hyperleptoprosopic index (Bhasin, 2006). Indian population consists of people from different races, majority of the people are Aryans and Dravidians. Aryans are mainly confined to North India and Dravidians who are the original inhabitants of India lives mainly in South India. Due to genetic and environment factor there are differences in facial form between South and North Indians (Prassana *et al.,* 2013).

With this perspective, the present study was done to compare facial index between North and South Indians.

OBJECTIVES

1. To compare the facial index among South Indians and North Indians of JSS Medical college students.
2. To compare the facial index between males and females of JSS Medical college students.

MATERIALS AND METHODS

A cross sectional study was conducted from January 2010 to January 2012. Study includes 171 medical students of JSS University. Among them 126 are South Indians and 45 are North Indian students. Subjects were chosen from simple random sampling technique from JSS Medical colleges. Age group of the study group was between 18-22 years. All the subjects were apparently healthy during study period. Objectives and method of the study were explained and informed consent was taken from the subjects.

Facial length and breadth was measured using sliding and spreading calipers. Facial length is the distance between nasion and gnathion. Nasion is the intersection of the nasofrontal suture with the midsagittal plane. Gnathion is the most anterior and lowest median point on the border of mandible. Facial breadth was measured as bizygomatic breadth. Bizygomatic breadth is the farthest points on zygomatic arches. Both measurements were taken when the subjects are in relaxed and sitting position. Facial index is the ratio between facial length and breadth and the value multiplied by 100. All data were recorded in Microsoft Excel sheet. Data were subjected to

Table1: Classification According to Martin and Saller

Types	Males	Females
Hypereuryprosopic (very broad face)	<78.9	<76.9
Euryprosopic (broad face)	79.0-83.9	77.0-80.9
Mesoprosopic (round face)	84.0-87.9	81.0-84.0
Leptoprosopic (long face)	88.0-92.9	85.0-89.9
Hyperleptoprosopic (very long face)	>93.0	>90.0

statistical analysis to find frequencies and percentages using Epi.info software, version 3.4.3. Facial Index were classified into different categories according to Martin and Saller as mentioned in the Table 1.

OBSERVATION AND RESULTS

In the present study 171 medical students of JSS University were participated. Among them 126 are South Indians and 45 are North Indian students.

In our study we found that Leptoprosopic form is the commonest type of facial form followed by Hyperleptoprosopic, Euryprosopic, Mesoprosopic and Hypereuryprosopic. Among South Indians, we found that Leptoprosopic form is the commonest type of facial form and Hypereuryprosopic is the least form of face. Among North Indians Leptoprosopic is the commonest type and Hypereuryprosopic is the least common form of face (Table 2).

We observed the long face is the dominant form in both the North and South Indian males and the least common was very broad face (Hypereuryprosopic). Among females also long face (Leptoprosopic) is the most common facial form in both North and South Indians (Table 3).

Table 2: Percentage of Different Types of Facial Forms

Types	South Indians	North Indians	Total
Leptoprosopic	47(37.30%)	19(42.22%)	66(38.59%)
Hyperleptoprosopic	29(23.01%)	7(15.55%)	36(21.05%)
Euryprosopic	24 (19.04%)	7(15.55%)	31(18.12%)
Mesoprosopic	16(12.69%)	11(24.44%)	27(15.78%)
Hypereuryprosopic	10(7.93%)	1(2.22%)	11(6.43%)
Total	126(100%)	45(100%)	171(100%)

DISCUSSION

In the present study 171 medical students of JSS University were participated. Among them 126 are South Indian and 45 are North Indian students. In our study we found that Leptoprosopic form is the commonest type of facial form followed by Hyperleptoprosopic, Euryprosopic, Mesoprosopic and Hypereuryprosopic. Among South Indians we found that Leptoprosopic form is the commonest type of facial form and Hypereuryprosopic is the least form of face. Among North Indians Leptoprosopic is the commonest type and Hypereuryprosopic is the least common form of face.

Table 3: Comparision of Percentage of Different Types of Facial Forms Betweeen North Indian and South Indian Males and Females

Type	South Indians		North Indians	
	Male(n-55)	Female (n-71)	Male (n -28)	Female (n-17)
Hypereuryprosopic(11)	5(9.09%)	5(7.04%)	0(0%)	1(5.88%)
Euryprosopic (31)	10(18.18%)	14(19.71%)	4(14.28%)	3(17.64%)
Mesoprosopic (27)	6(10.90%)	10(14.08%)	8(28.57%)	3(17.64%)
Leptoprosopic (66)	22(40%)	25(35.21%)	13(46.42%)	6(35.29%)
Hyperleptoprosopic(36)	12(21.81%)	17(23.94%)	3(10.71%)	4(23.52%)

In the study conducted by Ghosh's and Malik on the Indian population showed that the Hypereuryprosopic and Euryprosopic types of facial forms are present in highest percentages in the Santhals of West Bengal which is different from the present study. Another study by Bhasin among Indians showed that dominant type face shape of Mesoprosopic. According to Bhasin the mean value of facial index among Indians is 86.34 which can vary from 75 among Naga Sundan of Nagaland to 122.80 in Bhil Khandesh of Maharashtra region.

In the study conducted by Shetti *et al.,* among Indian males dominant type of face shape was Mesoprosopic with 32% and in females they have observed both Mesoprosopic and Euryprosopic as dominant type with 32% each respectively. Hypereuryprosopic type was least common type in both males and females with 5% and 9% respectively. The study was not in correlation with the present study.

A study of native Fars and Turkman ethnic groups (Jahanshahi *et al.*, 2008) found that the dominant type of face shape in both native Fars and Turkman females was Euryprosopic (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). The mean facial index in Turkman males and females were 87.25% and 81.48%, respectively. The mean facial index in Fars males and females were 88.22$^{\alpha}$ and 84.48%, respectively. It showed that Iranian males had globular face and Iranian females had a broader face.

In the study done by Prassana *et al*., North Indian males were found to have very long faces and females showed very long to round faces. North Indian males and females had highest facial height and upper facial height. This study doesn't correlates with the present study where we observed long to round face is the dominant in North Indian males and in females long to very long faces. Southern Indian males were found to have very long faces which are similar to our study; Round to broad faces is the commonest type in south Indian females which is not correlating with our results as we observed long face has the commonest form among South Indian females.

Though the North and South Indians are of different origin, we did not observed the differences in facial forms. The present study is of more relevance and importance to the plastic and reconstructive surgeons while doing surgeries in conditions like carcinoma cheek, accidents. It can also be used in forensic criminology to identify a person and height of the individual.

CONCLUSION

Leptoprosopic form is the commonest type of facial form and Hypereuryprosopic is the least form of facial form. The study on the face shapes in different parts indicate that geographical factor, similar to ethnical factor can affect the form of the face.

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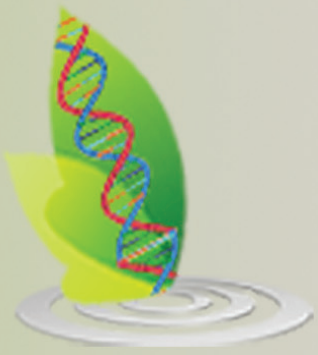

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