

# The Study of Facial Index among Haryanvi Adults

Mahesh Kumar, Mohd. Muzzafar Lone

Department of Anatomy, MM institute of Medical Sciences & Research Mullana (Ambala) Haryana, India

**Abstract:** *The present study was conducted in Department of Anatomy, MM institute of medical sciences & research, Mullana (Ambala), on 600 Haryanvi adults comprising of 300 males and 300 females aged 18 to 40 years. Prior informed written consent was obtained from subjects. Inclusion and exclusion criteria for the study were predefined. The purpose of study was to create, evaluate data on face anthropometry. Two measurements, the morphological facial length, bizygomatic breadth were taken by using standard anthropometric instruments. From the study it was concluded that the mean morphological facial length was 11.07cm in male and 10.21cm in female. Bizygomatic breadth was 13.08 cm in male & 12.35cm in female. The facial index (mean) was 86.09 in male and 84.84 in female. So all the measurements were more in males as compared to females. It was concluded that the dominant type of face shape in males was mesoprosopic (49.66 %) followed by euriprosopic (24%), leptoprosopic (12.33%), Hypereuriprosopic (11%) & Hyperleptoprosopic (3%). In females the dominant type of face was also mesoprosopic (35%) followed by Hypereuriprosopic (25%), euriprosopic (19.33%), leptoprosopic (19%) and hyperleptoprosopic (1.66%). Data of this study will be useful to anthropologist, plastic surgeons, anatomists and forensic experts.*

**Keywords:** Anthropometry, Haryanvi, Facial index

## 1. Introduction

In forensic applications, personal identification is one such field where facial measurements play a very important role, particularly in different techniques of facial reconstruction where these measurements may help forensic artist to make out final face irrespective of the method used<sup>1</sup>. Anthropometric measurements especially facial measurements are important for determining various face shape<sup>2</sup>. Climatic adaptations and nutritional factors are found to be detrimental to body shape and size<sup>3</sup>. Geometrical variability not only helps to understand the variations in the bodily measurements in various populations but also make the data base available to help automate the process of various features with computer based animation technologies<sup>4,5</sup>. Comparison of changes in facial index between parents, offspring and siblings can give a clue to genetic transmission of inherited characters<sup>6</sup>. Accurate facial analysis is essential for diagnosis of genetic and acquired anomalies, for the study of normal and abnormal growth and for morphometric investigation<sup>7</sup>. The cephalometric analysis is a diagnostic tool which can provide specific and important information about the facial disharmonies which is critical for the follow up of the patients<sup>8</sup>. For evaluation of variations in craniofacial morphology, standards of anthropometric measurements should be established for particular population<sup>9</sup>. A person with euryprosopic facial type favours the nasal breathing mode<sup>10</sup>. Facial form may be an important factor in increasing susceptibility to obstructive sleep apnea<sup>11</sup>. The human facial contour has always been an interesting subject for anatomists, anthropologists, plastic surgeons and artists<sup>7</sup>.

## 2. Material and Methods

The present study was conducted on 600 adult Haryanvi Banias (300 of either sex). Prior informed consent both in English & Vernacular were obtained from subjects in writing. The subjects of age group 18-40 years were included in the study. The subjects were apparently healthy and without any cephalo-facial deformity. A series of three somatometric landmarks and two anthropometric measurements were taken on 600 Haryanvi Banias. The

methodology for facial measurements was adopted from Montague A. MF<sup>12</sup>

## 3. Somatometric Measurements

- 1) **Morphological facial length:** It is straight distance from the nasal root (nasion) to the lowest point on the lower border of the mandible in the mid sagittal plane (gnathion).
- 2) **Bizygomatic breadth** It is the straight distance between two zygia (zy) i.e. the most lateral points on the zygomatic arch.

The measurements were taken with the help of a spreading caliper.

**Total facial index** = (Morphological face length/ Bizygomatic breadth)\*100

Total facial index (Martin –Seller scale)\*  
Face shape Range of facial (prosopic) index (FI)  
Male Female  
Hypereuriprosopic ×-78.9 ×-76.9  
Euriprosopic 79.9-83.9 77.0-80.9  
Mesoprosopic 84-87.9 81.0-84.9  
Leptoprosopic 88-92.9 85.0-89.9  
Hyperleptoprosopic 93.0-× 90.0-×

\* cited from Singh & Bhasin(1968)

## 4. Observations and Results

On the basis of two measurements the usual constants for various facial measurements like Mean, SD of male and female under the study are presented in Table-4.1. From the observations of tables it is revealed that

**Table 4.1:** Mean, SD & Range of Various Facial Measurements among Male & Female

Parameters	Sex	Mean	SD	Range	
				Min	Max
Morphological facial length	M	11.07	0.698	8.5	13.1
	F	10.21	0.940	8.5	12.6
Bizygomatic breadth	M	13.08	0.725	11.1	17.7
	F	12.35	0.759	10.4	14.6
Facial index	M	86.09	5.141	70.24	99.16
	F	84.84	5.713	68.99	97.50

The mean Facial index was 86.09 in males & 84.84 in females. The minimum facial index was found to be 70.24 in males and 68.99 in females. The maximum facial index was found to be 99.16 cm in males & 97.50 cm in females.

**Table 4.2:** Showing classification of subjects based on total facial index

Face Shape	Frequency		%AGE	
	Males	Females	Males	Females
Hypereuriprosopic	33	75	11	25
Euriprosopic	72	58	24	19.33
Mesoprosopic	149	105	49.66	35
Leptoprosopic	37	57	12.33	19
Hyperleptoprosopic	9	5	3	1.66

**Table 4.3:** Comparison of Facial index (Mean) with other population

Research worker	Country/ people	Facial index	
		Male	Female
Pandey AK	Onges of Andaman & Nicobar Island	75.29	-----
Singh & Bhasin	Indians population	86.34	----
Meka & Rexhepi	Albanian Kosova Population	90.38	90.27
Shetti et al	Indian population	87.19	86.75
	Malaysian population	85.72	87.71
Salve et al	Andhra region students	89.50	86.72
Present study	Haryanvi Banias	86.09	84.84

**5. Discussion**

The present study showed the anthropometrical variations among Haryanvi Banias. The mean value of present study in male was lower than the previous studies done on Albanian population, Andhra population and the Indian population (Shetti et al) but higher than Onges and Malaysian population and close to the study done on Indian population by Singh & Bhasin. The mean value of Facial index in females was lower than the previous studies.

**6. Conclusion**

From above study it was concluded that the dominant type of face shape in males was mesoprosopic (49.66 %) followed by euriprosopic (24%), leptoprosopic (12.33%), Hypereuriprosopic (11%) & Hyperleptoprosopic (3%). In females the dominant type of face was also mesoprosopic (35%) followed by Hypereuriprosopic (25%), euriprosopic (19.33%), leptoprosopic (19%) and hyperleptoprosopic (1.66%) so the data of this study will be very useful to anthropologist, anatomists plastic surgeons forensic examiner.

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**Author Profile**



**Dr Mahesh Kumar** had received his MBBS degree from Pt. BDS PGIMS Rohtak (Haryana) in 1995 and MD in Anatomy from MM Institute of Medical Sciences & Research Mullana (Ambala), Haryana, India in 2013. He had also acquired the postgraduate diploma in Forensic sciences from Punjabi University Patiala (Punjab) in 2007 .He also worked as medical officer in Health

Department Haryana from last 16 years. His area of interest is Anatomy, Anthropology and Forensic science.



**Dr Mohd Muzzafar Lone** received his MBBS degree in 1973 and MS in Anatomy in 1981 from University of Kashmir, Srinagar. He is Professor at Department of Anatomy, MMIMS& R Mullana (Ambala), Haryana, India. Besides having good academic record Dr Lone has 32 years of teaching experiences and has previously Professor of Department of Anatomy at Govt Medical College Srinagar. He also worked in Ministry of Health Islamic Republic of Iran from 1983 to 1985 and in University of Garyounis Benghazi (Libya) from 1985 to 1987 as Lecturer. He is a popular medical teacher who has trained a large number of postgraduate students.