

Photo Anthropometric Study of Gujarati Female

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Research Article

Abstract: Facial aesthetic play important role in reconstructive as well as plastic surgery. Globalization has made world a very narrow space. Large amount of Gujarati population migrating towards world over make it necessary to have a baseline data available for reconstructive and plastic surgeon. We in our study tried to find out baseline data of Gujarati female where we found Middle face ration was and Lower face ratio was out present result were compared with Urhobos, Nepali, Turkish community.

Key words: Facial analysis, Gujarati female, Middle face ratio Lower face ratio.

Introduction

Human face has been a great source of interest for scientists, poet and artist. Since childhood idea for beauty and symmetry influence the idea of beauty .standards of beauty and attractiveness are similar across the Gender, nation, race, and society. Greek canon of beauty has been an yardstick for decades for anatomist and plastic surgeon. These canons of beauty are still foundation for any Craniofacial and Plastic Reconstructive Surgeon[1]. Restoring normal facial anatomy has always been goal of any facial reconstructive and aesthetic surgery. Favourable facial reconstructive has always been most challenging area of facial plastic surgery [2]. For such an important discipline data is not available for Gujarati community. Gujarati community is global community. Extensive database is available for the North American, Himachali, Nigerian, and Nepali. Good quality photo documentation has been always good tool for pre and post operative comparison in every surgical intravenation. Various medical fields are also accepting requirement for use of photo documentation method [3]. It is most convenient and helpful method. In present study we have used photo-anthropometric technique for facial analysis of Gujarati Female. This method is easy, non invasive, highly efficient method. Frontal photograph are well accepted document proof in all disciplines. Comparative racial anthropometric difference in body proportion and size is well established proof in various human race [4]. Use of photo anthropometric study has been successfully

used by many scientists across the globe [5]. Use of photo anthropometric study has an increasing use in determination of age, gender, anthropology, archaeology, anatomy and forensic science

Material and Method

Gujarati Females bet age group of 18-35 years were investigated for the present study. Total of 380 females were randomly selected, all were belonging to Gujarat. The entire subject and their forefathers selected for study were Gujarati. Subject with inter cast history were not included in the study. Standard views were taken with 10megapixel cameras .All photo documentation was done with head in Frankfurt's horizontal position. The photographs were analysed using software prepared in METLAB version 7. Soft tissue anthropometric points were reproduced on photograph using software. The distances calculated were converted in to percentage ratio and proportion for Gujarati Female. Statistical significance was checked.

Facial Landmark

Nasion- The deepest depression at the root of the nose typically corresponds to the nasofrontal suture.

Subnasale- Junction between lower borders of nasal septum and cutaneous portion of the upper lip in the midline.

Menton- Most inferior and lowest point of chin in midline.

Middle Face Ratio(MFR)- It is distance between Nasion to Subnasale (n - sn) / total distance of face X 100

Lower Face Ratio(LFR)- It is distance between Subnasale to Menton (sn- mn) / total distance of face X 100

Total face Length- Distance between Nasion to Menton (n-mn)

Available data was subjected to statistical analysis and P value was found

Result

All frontal photographs were analysed with the help of software. Middle and Lower face ratio have been given in table -1. Comparison of MFR and LFR with various ethnic groups has been given in table -2.

Middle face Ratio of Gujarati females varies between minimum of 35% to maximum of 52% with an average of 43%. Lower face Ratio for the females varies between 47.5% to 4.3% with an average of 56.5%. (P<0.001)

Gujarati Female	Minimum	Maximum	Average
Middle face ratio	35.60%	52.40%	43.20%
Lower Face Ratio	47.55%	64.30%	56.50%

Discussion

Human face has been divided by great ancient scientist Leonardo da Vinci in to three different part. This three part of human face are broadly called Upper Face, Middle Face, and Lower Face. Since the upper face include hair line which is no more used for reconstructive and plastic surgery[6]. Present study shows that lower face of Gujarati Female is bigger than that of Middle face. Similar kind of finding found in Nepali, Urhobos, Turkish community. According to EL Ogheneemavwee *et al* [Urhobos female had 43%MFR and 56%LFR which is almost similar to our finding. But in various Nepali community[8].Middle face ratio was higher than that of Gujarati Females and Urhobos where as Lower face ratio was lower than that of previous two community. For Turkish Middle face ratio was higher than Gujarati, Nepali, Urhobos females. All the above finding are suggestive than difference in face ratio do exist in various ethnic group. Ethnic difference is well accepted fact in aesthetic of face. Since regional various are very much in country like India. Elaborated study has to be conducted for finding out various race specific characters.

Different Ethnic Group	Population	Middle face Ratio	Lower Face Ratio
Present Study	Gujarati	43.2	56.5
EL Ogheneemavwee <i>et al</i> (2010)	Urhobos	43.5	56.7
Baral p <i>et al</i> (2010)	Nepali Brahmin	44.2	55.8
	Nepali Chhetri	44.4	55.6
	Nepali Rai	43.1	56.9
	Nepali Limbus	43.3	56.8
Sehar <i>et al</i> (2007)	Turkish	44.8	54.4

References

1. Florine, Vegter., Joris JJ. Clinical Anthropometry and canons of the Face in Historical Perspective. Plastic and Reconstructive Surgery; (2000):106(5) 1090-1096
2. Larrabee, WF. Facial analysis for rhinoplasty. Otolaryngology. Clinics North American. (1987); 20 (4):653-674.
3. Andrews,J.T. & Scheoenrock,L.D. Photo documentation. In head and Neck surgery Otolaryngology. Byron.J.Bailey, 2nd Philadelphia. Lippincott.- Raven (1998) : PP-247-255.
4. Glaister, J., Brash,J.C. Medico Legal Aspect of the Ruxton case. Edinburgh: Livingstone, (1937)
5. Stephan, C.N., Norris, R.M., Henneberg,M. Does sexual dimorphism in facial soft tissue depth justify sex distinction in craniofacial identification. J Forensic Sci (2005); 50:513-518.
6. Powell N and Humphries B. Proportions of the aesthetic face. New York: Thieme-Stratton. (1984)51-55.
7. E.L.Oghenemavwe., A.E.Osunwoke., S.K.Ordu, O.Omovigho
Photometric analysis of soft tissue facial profile of adult Urhobos.Asian Journal of Medical Science;_2010 Vol 2(6):248-252
8. Baral,P., Lobo,S.W., Menezes,R.G., Kanchan., Krishna K., Bhattacharya S, Hiremath, SS. An anthropometric study of facial height among four endogamous communities in the Sunsari district of Nepal. Singapore Med J; 2010 :51(3):212-215.

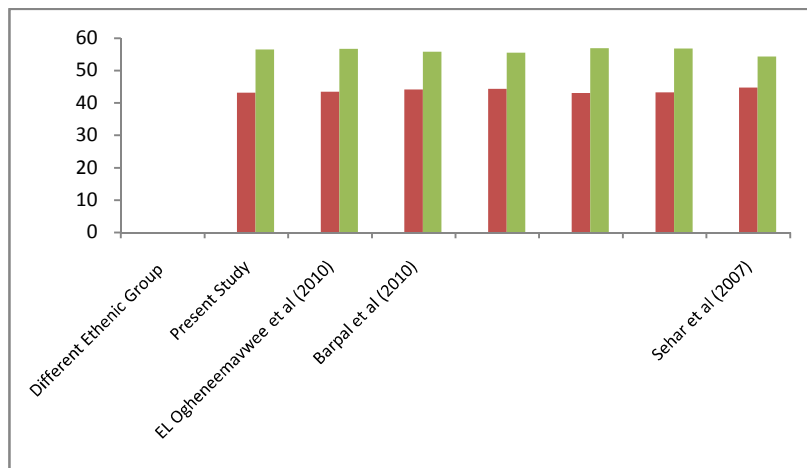


Figure 1: Comparison between various ethnic groups