Perception of Aesthetics by Different Professionals of Different Communities

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ABSTRACT

Aim: To evaluate the perception of aesthetics by different professionals of different communities in India by a photographic study.

Materials and Methods: This was a photographic study conducted among different professionals of different communities to establish an aesthetic norm for Indian population. The communities to which the professionals belonged were North Indian, South Indian, Maharashtrian, Gujarati and Parsi. The subjects photographed were aesthetic profiles with good occlusion. Five different facial photographic views each for male and female were obtained. These photographs were then subjected to changes in increments of 2 mm and 4 mm in retrusive and protrusive profile in Adobe Photoshop CS5 after which they were evaluated by different professionals of different communities according to their preference from most liked to least liked.

Results: The aesthetic preferences differed widely among different professionals of different community.

Conclusion: The established aesthetic norms can be utilized by the dental fraternity in general and Orthodontist's in particular in diagnosis and treatment planning of Samples belonging to different communities to have the treatment outcome in unison with the established soft tissue norm for that particular community.

INTRODUCTION

The subject of facial aesthetics is pre-eminently important to Orthodontists. But more than this, it is a subject which interests and embraces one and all. As Orthodontists, we often lose sight of this fact. We should not forget that the ultimate source of our aesthetic values needs to be the people and not just ourselves.

Ethnic and racial differences play a major role in diversifying aesthetic preferences [1-3]. Several factors such as sex, age, education, socioeconomic status and geographic location also affect the aesthetic preferences of the community [4]. Before planning orthodontic treatment, it is necessary to understand social preferences for facial aesthetics.

India is a country of unity in diversity. People from different parts of our country have migrated to different business hubs in search of financial opportunities. This has lead to an amalgamation of people from different parts of India and of different ethnic origins in metropolitan cities. So as an orthodontist it becomes quite challenging to deliver the best according to each person's community background and preferences on perception of facial aesthetics. In order to address this difficult issue a humble attempt by conducting a research on perception of aesthetics by different professionals of different communities was undertaken.

The purpose of this study was to establish the perception of facial aesthetics by different professionals of different communities.

MATERIALS AND METHODS

Materials used in the study were Canon 1100 SLR digital camera, Adobe Photoshop CS5, Photographs (2" × 4") of 35 males and 35 females, Two Wooden boards having 11 slots each of 2.5" × 4.5" as an evaluation board, Lead Acetate Tracing Paper, 0.5 mm Lead pencil.

Two patients (1 male and 1 female) with aesthetic Class-I soft tissue facial profile with well-balanced facial features were selected among the samples visiting the OPD of Department of Orthodontics and Dentofacial Orthopaedics of Bharati Vidyapeeth Deemed University Dental College and Hospital, Kharghar, Navi-Mumbai, Maharashtra during January 2014 to February 2014. Samples selected had vertical

facial measurements closely matching the normal values suggested by Arnett [5]. The Facial Length was measured as suggested by Dr. William Arnett [5] (from Nasion' to Menton' for Females the range being 124 ± 4.7 mm and for Males the value ranging from 137 ± 6.5 mm). The inclusion criteria for Normal pleasing profile with normal parameters of micro, mini and macro aesthetic principles [6]. Normal Class-I functionally acceptable occlusion with minor (up to 2 mm) or no crowding; No missing teeth except third molars; No supernumerary teeth; Competent lips; No major tooth size arch length discrepancy. The exclusion criteria for subjects was Previous orthodontic treatment; Prosthetic replacement of teeth; Facial anomaly; TMJ deformities; History of traumatic injuries; Harmful habits; Hypoplastic teeth.

Five photographs each of these two samples were obtained using a Canon 1100 SLR digital camera with Tamron Macrolens with Focal Length of 90 mm attached and subject in Natural Head Position [7]. It was obtained by asking the subject to look at the horizon with the head parallel to the floor with shoulder relaxed and straight gaze. Five Photographs included were: Frontal Rest; Frontal Smile; Profile Rest; Profile Smile and Three Quarter Right with Smile.

Evaluation Panelist's included professionals belonging to seven different professions as follows: General Dentist, Orthodontist, Artist, Architect, Beautician, Teacher and Fashion Designer.
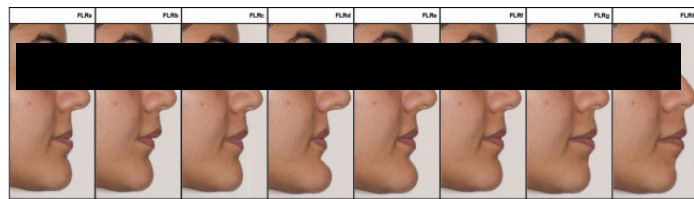
Five communities were selected from cosmopolitan crowd of Mumbai to which each member of profession would belong to as follows: North Indian, South Indian, Maharashtrian, Gujarati and Parsi.

A total of 35 photograph each for male and female were generated with the help of Adobe Photoshop CS5 from the 5 facial views of photographs for both the sex. A series of 10 photographs were generated from 3 views in both male and female. These three views are Profile rest, Profile smile and Right three quarter smile. The series of distortions and its increments were as follows: (a) Maxillary Retrusion 2 mm; (b) Mandibular Retrusion 4 mm; (c) Mandibular Retrusion 2 mm; (d) Bimaxillary Retrusion 4 mm; (e) Bimaxillary Retrusion 2 mm; (f) Original Photograph; (g) Bimaxillary Protrusion 2 mm; (h) Bimaxillary Protrusion 4 mm; (i) Maxillary
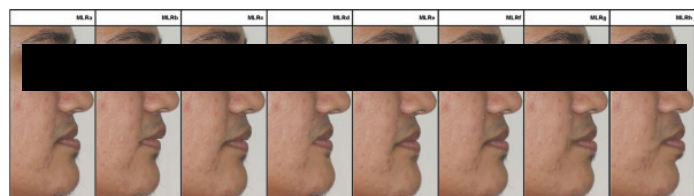
Protrusion 2 mm; (j) Maxillary Protrusion 4 mm; (k) Mandibular Protrusion 2mm. So, a total of 11 photographs including the original photograph were generated [Table/Fig-1-6]. So, similar distortions were performed in the three views mentioned above so a total of 33 photographs were generated from the above method for each male and female. The remaining two photographs were two remaining views i.e. Frontal Rest and Frontal Smile without any distortion were used as placebos [Table/Fig-7]; the other advantage of these placebos was that it gave the evaluator a view of the patient from front.

So, 35 photographs each for male and female were given to the different professionals of different communities. So, a total of 70 photographs were evaluated by each evaluator. A wooden board consisting of 11 slots [Table/Fig-8] was given to each evaluator for keeping the photographs according to his preference with the most attractive on the left side of the board and least aesthetic being on the right side of the board.

The ratings given by professionals were noted on an evaluation sheet table. Photograph was taken of each category evaluated by
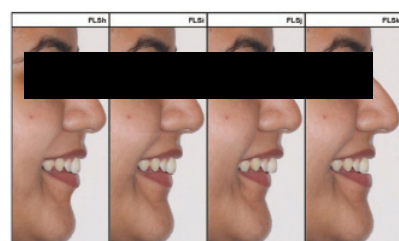
the professionals on the wooden board with the unique code of each professional marked on the corner of wooden board.

Every evaluator was given an evaluation disclaimer form to sign after rating of photographs which stated that no bias was done in their evaluation. Another signature was also obtained on a common evaluation sheet which designated a unique number to each professional belonging to different community.

The distortions done were verified by using a lead acetate tracing paper in which all the anatomical landmarks on the normal photograph were drawn and then this tracing paper was used as a template to check for the measurements of remaining distortions [Table/Fig-9,10].

STATISTICAL ANALYSIS

Software used for statistical analysis was Windows based statistical package Medcalc® version 12.7.5.0 for comparative analysis of the results.

[Table/Fig-1]: Category A: Female profile test

[Table/Fig-2]: Category B: Male profile test

[Table/Fig-3]: Category C: Female profile smile

[Table/Fig-4]: Category D: Male profile smile

[Table/Fig-5]: Category E: Female three quarter
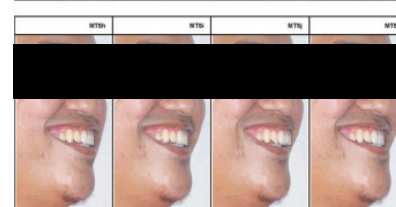
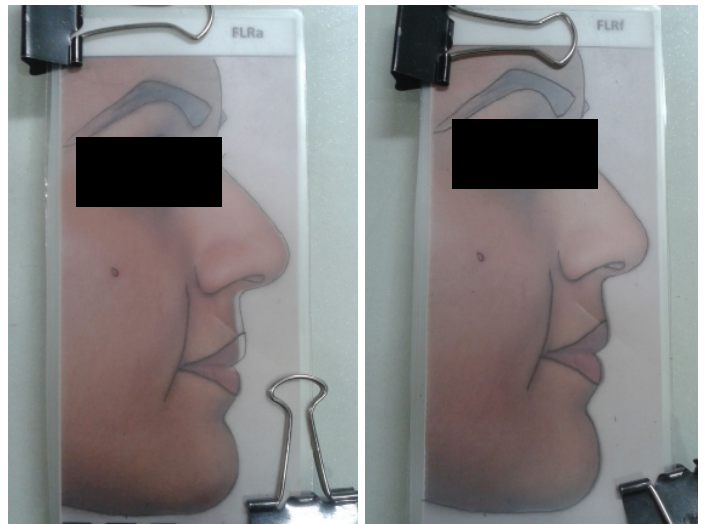[Table/Fig-6]: Category F: Male three quarter

RESULTS

North Indian Community Professionals rated Maxillary Protrusion 2 mm as the most aesthetic and Mandibular Retrusion 4 mm as the least aesthetic [Table/Fig-11].

South Indian Community Professionals rated Original Photograph as the most aesthetic and Bimaxillary Protrusion 2 mm, 4 mm and Maxillary Protrusion 4 mm as the least aesthetic [Table/Fig-12].

Maharashtrian Community Professionals rated Mandibular Retrusion 2 mm as the most aesthetic and Mandibular Retrusion 4 mm as the least aesthetic [Table/Fig-13].

Gujarati Community Professionals rated Original Photograph as the most aesthetic and Maxillary Protrusion 2 mm and Bimaxillary Retrusion 4 mm as the least aesthetic [Table/Fig-14].

Parsi Community Professionals rated Maxillary Protrusion 2 mm as the most aesthetic and Maxillary Retrusion 2 mm, Mandibular
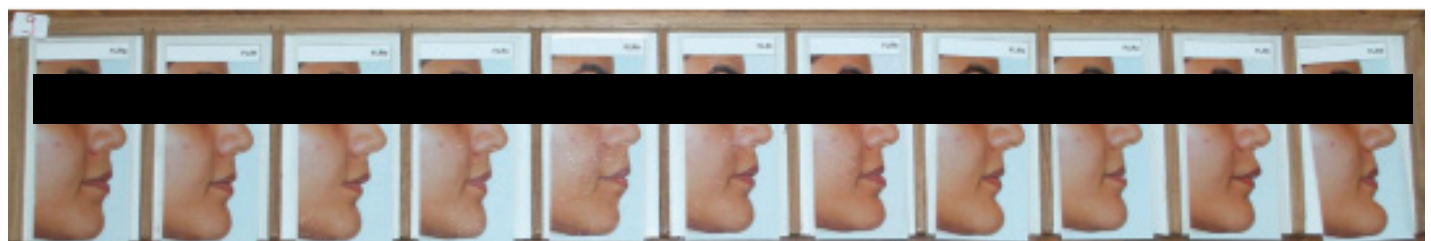

[Table/Fig-9]: Tracing of original photograph with female in profile view
[Table/Fig-10]: Tracing of female profile view with maxillary retrusion 2mm

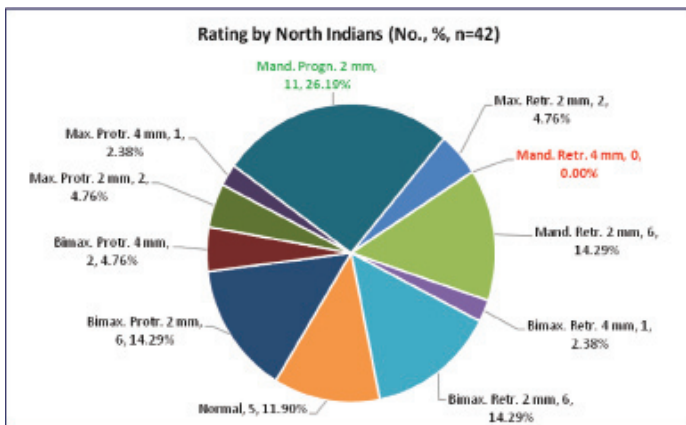Retrusion 4 mm and Bimaxillary Retrusion 4 mm as the least aesthetic [Table/Fig-15].

DISCUSSION

A person's ability to recognize a beautiful face is innate, but translating this into tangible treatment goals can be difficult to define because of the subjectivity in the perception of beauty. The perception of beauty is an individual preference with cultural bias. A major objective of orthodontic treatment is the establishment of a harmoniously functioning dentition that is healthy and aesthetically pleasing to both the clinician and patient [6]. In contemporary society, the treatment outcome often needs to be acceptable to patient's peers and also to the community.
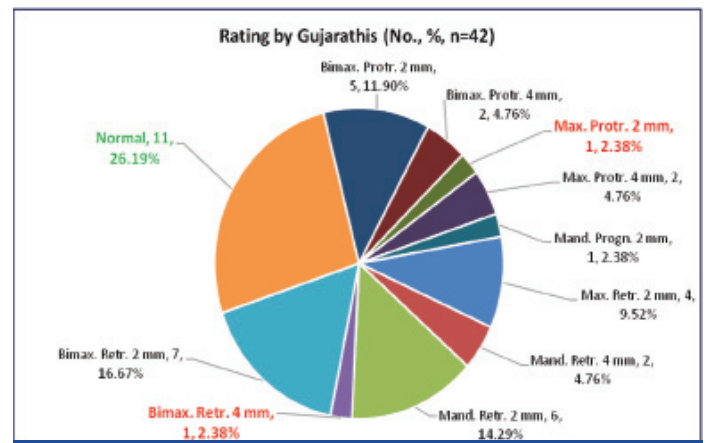
Various physical, psychological and social factors that affect perceptual judgments are related to the development of a personal concept of facial aesthetics [8]. Several studies have investigated facial aesthetic preferences of different races, ethnicities and cultures and described the differences among them. It was suggested that the profile standards of Ricketts, Steiner and Holdaway do not apply to Africans [9] and that orthodontists and laypersons of African descent prefer more convex bialveolar protrusive profiles than white orthodontists and white laypersons [10]. African's profile preferences are straighter than the norm for their race, but more protrusive than white standards [11]. Asians, on the other hand, prefer straight or bimaxillary retrusive profiles with a more protrusive nose in females and a more retrusive chin in males than do white people [12-15]. Hispanics prefer the upper and lower lip positions to be less protrusive than those of whites and the mean protrusion preference among whites is significantly greater than the norm of Ricketts for whites [16].

In India very few Orthodontist's have made attempts to demystify the perception of aesthetic preference pattern among different communities. Dr. K. Jyothindra Kumar from Trivandrum, conducted an iconic study in the manual titled -'A Handbook of Cephalometric Norms for Indian Ethnic Groups (A Compilation of Published Cephalometric Studies) [17] on behalf of Indian Orthodontic Society, he also did a compilation of studies ranging from as early
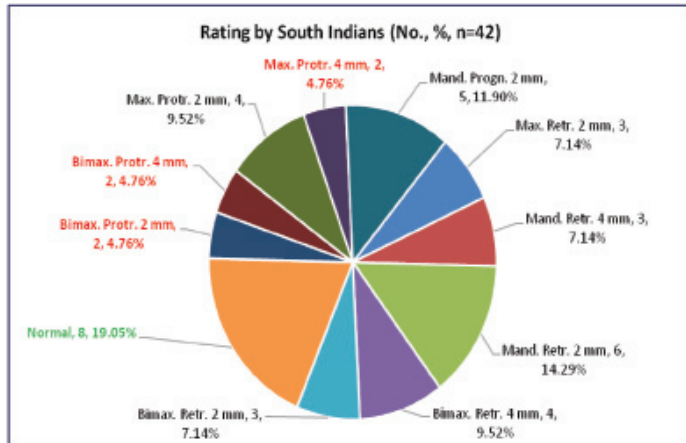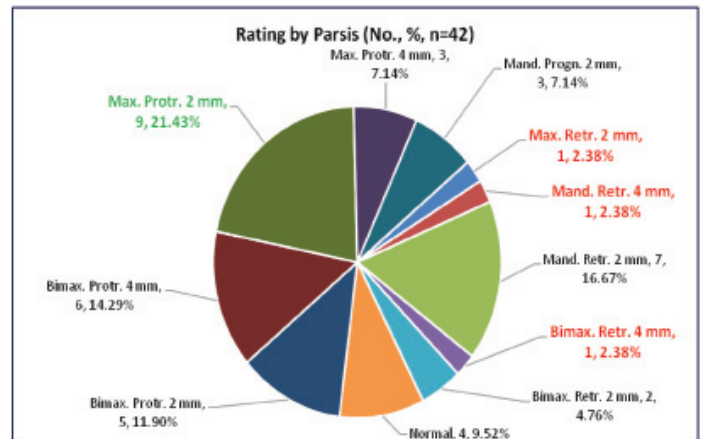

[Table/Fig-7]: Category GHIJ: Female frontal rest & smile and Male frontal rest & smile

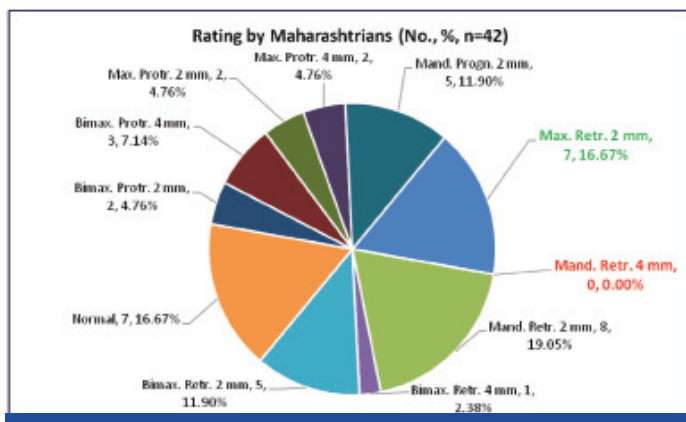**[Table/Fig-8]:** Wooden board with eleven slots

[Table/Fig-11]: Rating by North Indian community professionals

[Table/Fig-12]: Rating by South Indian community professionals

[Table/Fig-13]: Rating by Maharashtrian community professionals

[Table/Fig-14]: Rating by Gujarati community professionals

[Table/Fig-15]: Rating by Parsi community professionals

as 1930 to 1987. Keeping in mind that very few studies [18-26] were conducted since last three decades, an effort to verify the past findings and add few details to it has been made in the present study. So, this was a humble attempt for finding and confirming the perception of aesthetics among different professionals of different communities so as to merge the gap of aesthetic preference among the Orthodontist and Samples of different communities.

Physical appearance has been found to be an important determinant of an individual's social status. The facial aesthetics and functions of a patient are improved by orthodontic and orthognathic treatment. Allowing samples to view possible post-treatment results before treatment prevents disappointments in expectations. Thus, the patient gets informed about treatment limits. Thus, orthodontic and orthognathic treatment plans could be performed interactively. Perception of aesthetic preference may differ among people of different communities and upbringing. So, we decided to add different community professionals in this photographic study.

LIMITATIONS OF OUR STUDY

1. Sample selected is representative of the overall community. So it is difficult to generalize the findings specifically to that particular community. Due to globalization, exposure to different communities in metropolitan cities might have caused some effect on the perception of aesthetics.

2. Face contains lots of features, so the attention of the evaluator might have strayed elsewhere or distortion in basal bone position could not make effective difference in the eyes of the evaluator as the distortion area was not disclosed to the evaluators.

3. Dr. Jyothindra Kumar's iconic study [17] was published in 1992, with the evolutionary process and intercommunity marriages there may be changes in the community norms.

4. This study included distortion of basal bone but it doesn't seem to come to notice of a layperson even up to the extent of 4 mm of distortion. Thus it can be concluded that the dental component does not seem to affect the perception.

5. Properly aligned teeth seem to have lost the significance of dental component in aesthetics as abnormal catches the attention.

CONCLUSION

This information can be of help to clinicians in treatment planning and making recommendations for alternate treatment plans in accordance with patient preference taken as an indicator of their expected outcome. It is critical to understand Samples' and his community background's facial attractiveness pattern before starting the treatment to give satisfactory result to the patient and his/her peers. Failure to do so could result in patient dissatisfaction, despite satisfactory outcomes from the orthodontic techniques.

The aesthetic ideals proposed here are meant to serve as a template to guide preoperative discussions. Aesthetic sense of various ethnic

groups continues to be defined and our perception of aesthetic ideal is bound to change and evolve.

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