RESEARCH PAPER | Dental Science | Volume : 4 | Issue : 10 | October 2014 | ISSN - 2249-555X

Perceptions of Facial Attractiveness Among Different Groups – An Analysis

KEYWORDS: Facial profile, Dolphin imaging.

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ABSTRACT *Aim.To evaluate 1) facial profile preferences of different groups of subjects in general population like children, adolescents, dental students, artists and orthodontists and 2) to compare facial profiles between male and female subjects in different sample groups. Materials and methods. Photographs of 1 male and 1 female ideal subject were taken using a Canon DSLR 1100 D Camera with a Canon 100 mm f 2.8mm 1:1 macro lens. Eight profiles were simulated using Dolphin digital imaging software version 11.5.04.32 (Chatsworth, CA, USA). Five groups of raters were asked to evaluate the profiles for the most attractive (rated as 1) and the least attractive (rated as 8). Results.Straight profile was most preferred by male and female raters followed by bimaxillary retrusion. Least preferred profiles were retrognathic maxilla with prognathic mandible and prognathic posteriorly rotated mandible with anterior open bite.*

INTRODUCTION

The face is the key feature in determination of human physical attractiveness[1,2].Facial attractiveness and appreciation of beauty is influenced by factors such as ethnic origin, level of education, environment and nowadays increasing trend of advertising in media[3,4,5]. Facial beauty can influence one`s self confidence and social wellbeing. Varying perceptions of facial attractiveness were seen in different historical periods[6,7,8]. This study was undertaken to evaluate the facial profile preferences of male and female groups of children (future orthodontic patients), adolescents (regular orthodontic group), artists (people with good esthetic sense), dental students (future dental health care providers) and orthodontists.

MATERIALS AND METHODS

Various facial profiles required for the study were generated by first taking colour profile photographs of one male and female subject using a Canon DSLR 1100 D camera with a Canon 100 mm f 2.8mm 1:1 macro lens. The criteria for the selection of subjects were a well-balanced face with competent lips and no history of previous or ongoing orthodontic treatment.

The subjects were positioned in the Cephalostat as for a lateral head radiograph and a profile photograph was taken from distance of 5 feet so as to be able to superimpose it on a lateral cephalogram. Digital lateral cephalograms of both subjects were taken (Fig.1).

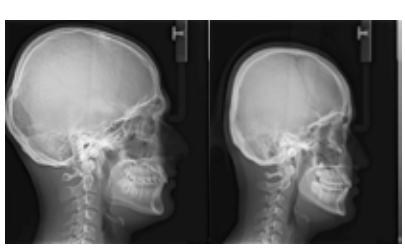

Fig.1 Male and female radiographs.

Digital radiographs and photographs were uploaded in Dolphin imaging and management solutions software.

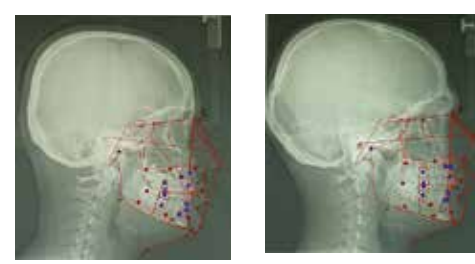

Fig.2 Tracing of the male and female subject was carried out using Dolphin imaging and management solutions software.

Various profiles were simulated by combining photographs and radiographs, which were uploaded in Dolphin software (Fig.3).

Fig.3 Profile simulations.

The software was used to create a total of 8 different morphed profiles as under;

1. Bimaxillary dentoalveolarretrusion (Fig.4).
2. Straight profile (Fig.5).
3. Bimaxillary dentoalveolar protrusion (Fig.6).
4. Retrognathic mandible (Fig.7).
5. Prognathic maxilla and retrognathic mandible (Fig.8).
6. Prognathic mandible (Fig.9).
7. Retrognathic maxilla and prognathic mandible (Fig.10).
8. Prognathic and posteriorly rotated mandible with anterior open bite (Fig.11).

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Fig.4 Bimaxillarydentoalveolarretrusion


Fig.5 Straight profile


Fig.6 Bimaxillarydentoalveolar protrusion


Fig.7 Retrognathic mandible


Fig.8 Prognathic maxilla and retrognathic mandible

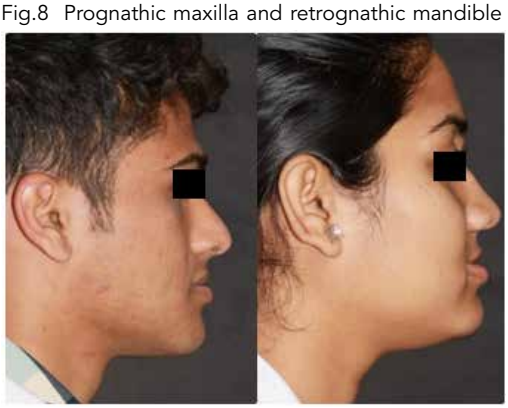
Fig.9 Prognathic mandible


Fig.10 Retrognathic maxilla and prognathic mandible


Fig.11 Prognathic and posteriorly rotated mandible with anterior open bite.

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Groups of raters

1. Children (aged around 10 years).
2. Adolescents (aged between 13 to15 years).
3. Dental students (mean age of 20 years).
4. Artists (aged between 20 to 23 years).
5. Orthodontists (mean age of 33.5 years).

The raters were asked to choose the most attractive (rated as 1) and the least attractive (rated as 8) profiles. The findings were subjected to statistical interpretation to derive results and conclusions.

RESULTS

Five groups of male and female children, adolescents, dental students, artists and orthodontists were asked to evaluate the most liked and disliked profiles out of the eight morphed male and female photographs. The significance in the difference in perception of various profiles by different groups was found by Chi square test. The results are explained with bar diagrams as given under (Tables 1to 8).

Table 1. Most liked male profiles (MALE RATERS)

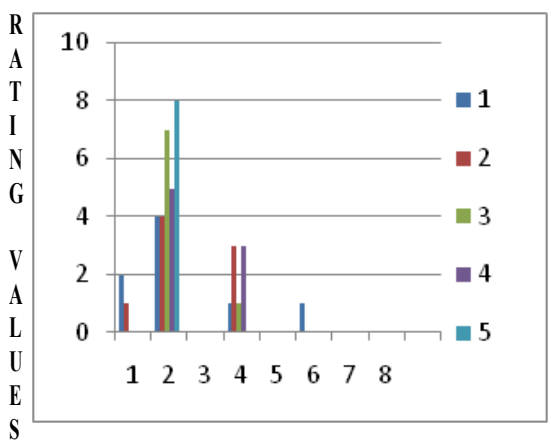


Table 2. Most liked male profiles (FEMALE RATERS)

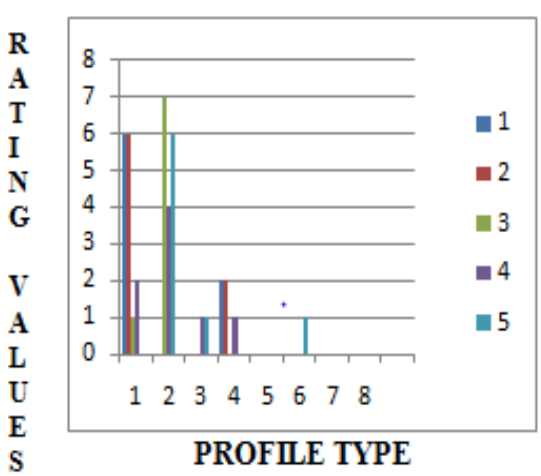


Table 3. Most liked female profiles (MALE RATERS)

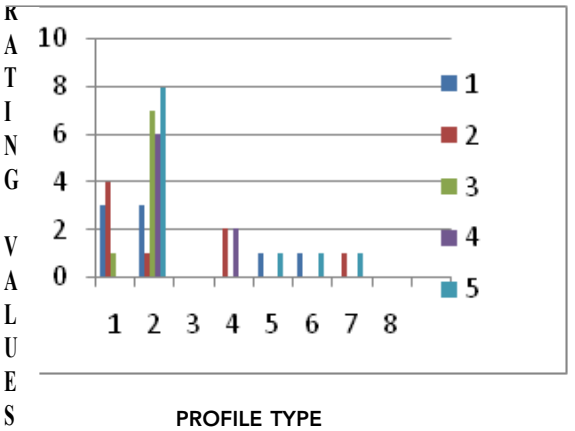


Table 4. Most liked female profiles (FEMALE RATERS)

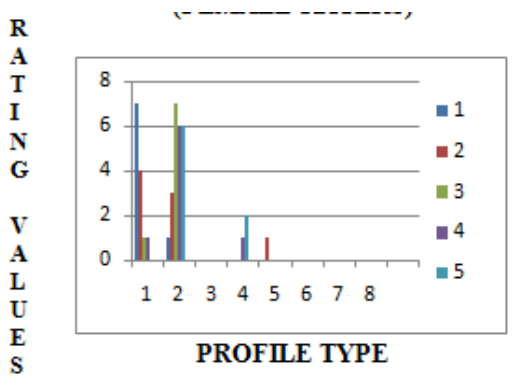
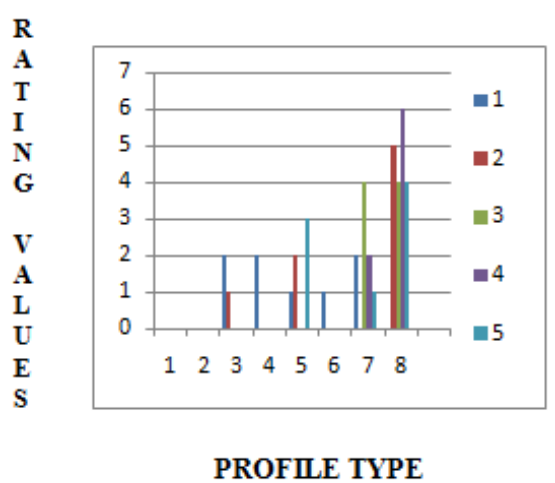


Table 5. Most disliked male profiles (MALE RATERS)



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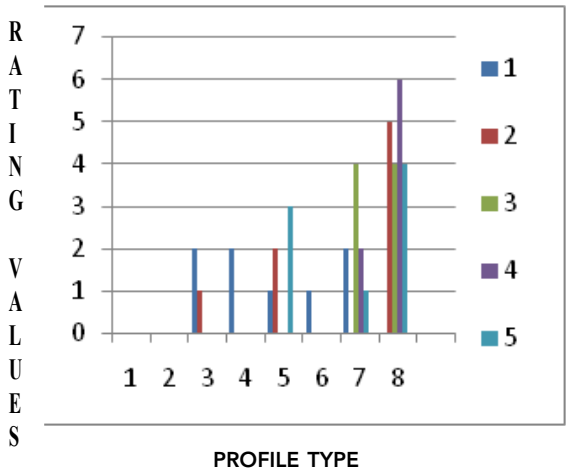


Table 6. Most disliked male profiles (FEMALE RATERS)

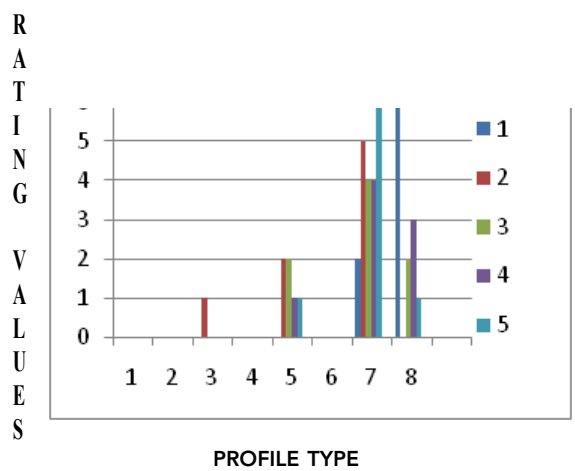


Table 7. Most disliked female profiles (MALE RATERS)

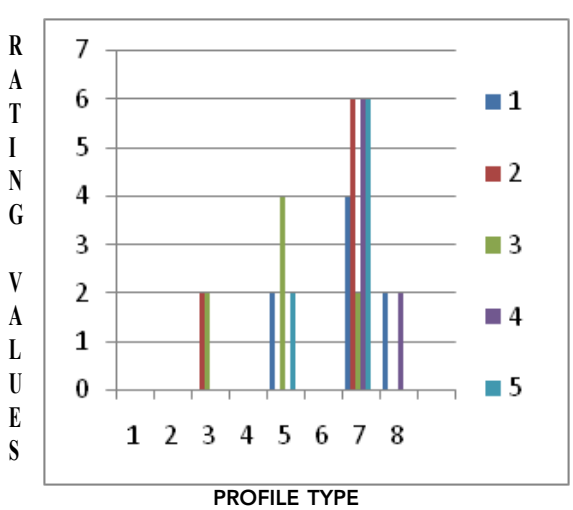
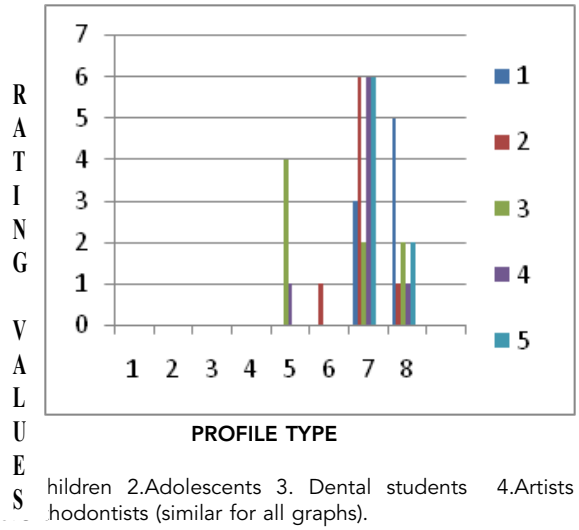


Table 8. Most disliked female profile (MALE RATERS)



hildren 2.Adolescents 3. Dental students 4.Artists hodontists (similar for all graphs).

DISCUSSION

A) Liked profiles

Most preferred male morphed profile by both male raters (62.5%) and female raters (42.5%) was straight profile (Fig.5) followed by bimaxillary retrusion (Fig. 6) which was preferred by 37.5% of females and 20% of males. In the male rater group, 100% of orthodontists, 87.5% of dental students, 75% of artists and 50% of adolescents perceived orthognathic profile to be the best (p = 0.03). In the female rater group, 75% of orthodontists, 87.5% of dental students and 50% of artists perceived orthognathic profiles to be best. 75% of children and adolescents found bimaxillary retrusion to be more attractive[9]. Majority of male and female rater groups considered bimaxillary retrusive profile to be the next preferred to orthognathic profile. From this data, we can conclude that in males, retrusive profile is next preferred to a straight profile, which indicates that cases of crowding and proclination are best treated with premolar extractions[10,11].Among female morphed profiles, most of the male (70%) and female raters (57.5%) preferred straight profiles (Figure 10). In the male rater group, 100% of orthodontists, 87.5% of dental students, 62.5% of artists and 50% of adolescents and children perceived orthognathic profiles to be best[12]. In the female rater group, 75% of orthodontists, 87.5% of dental students perceived orthognathic profiles most appealing, 75% of artists, 50% of adolescents and 87.5% of children perceived retrusive profiles to be best (p = 0.006) .

B) Disliked profiles

Among male morphed profiles, the profiles with retrognathic maxilla and prognathic mandible (Fig.10) was most disliked by female raters at 52.5% followed by prognathic and posteriorly rotated mandible 30% (Fig.11). Among the female raters, 75% of orthodontists, 50% of artists, 50% of dental students and 62.5% of adolescents perceived retrognathic maxilla and prognathic mandible to be most unappealing, 75% of children disliked mandibular protrusion with posteriorly rotated mandible and open bite. These differences among the groups in perceiving various profiles were not statistically significant (p = 0.14). 50% of orthodontists, 75% of artists and 62.5% of adolescents and 50% of the dental students perceived prognathic and posteriorly rotated mandible to be the most unappealing in male profiles. 25% of children disliked retrognathic maxilla with prognathic mandibleprofile, 25% of children disliked bimaxillary dentoalveolar protrusion profile, 25% of children disliked retrognathicprofile. These inter group differences

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were significant. (p = 0.03).Among the female morphed profiles, the profile with retrognathic maxilla and prognathic mandible was most disliked by male raters at 60% followed by profile with prognathic maxilla and retrognathic mandible.75% of orthodontists, 75% of artists, 75% of the adolescents and 50% of children perceived retrognathic maxilla and prognathic mandible to be most unappealing. 50% of dental students felt that retrognathic maxilla with prognathic mandible profile was most unappealing. The differences in rating the various profiles was significant (p = 0.04).

Among the female morphed profiles, profile with retrognathic maxilla and prognathic mandible was most disliked by female raters (57.5%) followed by prognathic and posteriorly rotated mandible (27.5%). From this data, it can be inferred that female raters disliked the retrognathic maxilla and prognathic mandible profile the most, in both male and female morphed profiles. The male raters disliked the prognathic and posteriorly rotated mandible with anterior open bite profile the most among the male morphed profiles and retrognathic maxilla and prognathic mandible among the female morphed pictures. So severe Class III profiles are the least liked and are definitely indicated for orthodontic and orthognathic correction.

CONCLUSIONS

1. Straight profile is the most preferred by male and female raters among the male and female morphed profiles followed by bimaxillary retrusion.
2. Female raters disliked the retrognathic maxilla with prognathic mandible profile the most, in both male and female morphed profiles.
3. Male raters disliked the prognathic and posteriorly rotated mandible with anterior open bite profile the most among the male morphed profiles and retrognathic maxilla with prognathic mandible among the female morphed pictures.
4. There is not much difference in the perception of attractiveness among the males and female rater groups.
5. Profile preferences of the general population should always be kept in mind while planning treatment. Higher levels of patient satisfaction can thus be obtained.

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