The Perception Of Facial Profile Attractiveness By Changing The Lower Facial Vertical And Antero-Posterior Proportion

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Abstract: Introduction: This study aimed to investigate the influence of changing the antero-posterior and vertical facial proportions on attractiveness rankings and to determine if these rankings would be influenced by gender and profession of the evaluators. Facial profile images were used as a mean of stimulus presentation. It has been shown that photographs provide valid, reproducible and representative ratings of dental and facial appearance. Objective: This study was to determine what Indian society considers optimal for facial attractiveness and whether this preference is affected by gender and profession. Method: Total 500 evaluators were selected for this study, from which 250 evaluators were dentist and 250 evaluators were non-dentist. Conclusion: At the end of the study it was concluded that the male and female profile images with average lower facial height consider as a most attractive by the both the groups. The class – II profile image of male and female profiles consider as a more attractive than class-III profile images. [Pratik G NJIRM 2016; 7(6): 59-68]

Key words: Facial profile image, esthetics, preference, the questionnaire

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Introduction: Modern society places strong emphasis on physical attractiveness and facial beauty. The face remains a key feature in the determination of human physical attractiveness. One reason why patients seek orthodontic treatment is to improve facial aesthetics. Orthodontic treatment can influence facial aesthetics in a number of ways, including well - aligned teeth [1], an attractive smile and a pleasing facial profile [2].

Defining beauty and attractiveness is a complex topic, but it is increasingly recognized that what is beautiful or attractive to the orthodontist or surgeon based on their experience and/or training may not agree with what the patient or other individuals think is beautiful or attractive [3].

Several studies have been conducted on the perception of facial profile attractiveness [2]. This type of research includes two broad approaches: the first is based on studies that evaluate the facial profile characteristics of attractive people and the second on studies that present facial photographs to a panel of judges who evaluate attractiveness by giving certain ratings to these photographs based on their appearance [4].

Some studies have assessed facial profile attractiveness of antero-posterior (AP) skeletal discrepancies [5, 6], while others have evaluated the attractiveness of vertical discrepancies [7,8,9,10,11]. Very few studies have assessed the attractiveness of combined vertical and antero-posterior discrepancies.[11,12] Some of these investigations compared the perception of profile attractiveness between lay people and professionals, others between different categories of clinicians, while many addressed certain races and ethnic groups [7,9,11].

De Smit and Dermaut[7] investigated the attractiveness of two vertical and two AP profile silhouettes. They concluded that vertical profile characteristics were more important than AP features. They also concluded that a reduced lower facial proportion was more acceptable to the dental students involved in the study than an increased lower facial proportion. Erbay and Canikliogluˡ[8] asked a group of orthodontists to rank photographs of Turkish adults, the lower face vertical proportions were found to be significantly greater in the images rated as attractive compared with those rated as unattractive.

Some of these investigations compared the perception of profile attractiveness between lay people and professionals, others between different categories of clinicians, while many addressed certain races and ethnic groups. Previous studies that limited to certain ethnic group and racial groups included very small or biased sample sizes and the relationship between the size of the profile changes and attractiveness was not fully examined [13,14]. Furthermore, some did not consider differences in the perception of attractiveness between female and male profile images. Additionally, controversy still remains regarding which of the lower facial vertical proportion is considered to be more attractive and whether there

is a difference in the perception of attractiveness of lower face height between male and female profile images.

Many studies have evaluated the perception of attractiveness and profile standards of Caucasians and African, Japanese, Turkish and Chinese [15,16,17,18]. Therefore, the aims of this study was to investigate the influence of changing the antero-posterior and vertical facial proportions on the attractiveness rankings scored by a sample of the Indian population and to determine what Indian society considers optimal for facial attractiveness and whether this preference is affected by age, gender and profession.

Methods: Adult native Indians, a male (aged 24 years) and female (aged 18 years) were given consent for this studyunder permission of an **institutional review board (IRB)** and who met the following criteria were selected: a Class I incisor and molar relationship; Class I skeletal pattern, an average lower anterior face height/total anterior face height of almost 55 percent, a harmonious profile and no previous orthodontic treatment or plastic surgery. The male and female colored profile digital images were obtained using a Nikon SLR 3100 camera (vivitar ring flash 5000, USA). The two profile images were obtained in a standardized procedure by positioning the subjects 5 ft. from the camera with the head in the natural posture and the lips at rest.

Source of data: In present study, evaluators were divided in to two groups. Ranks given by the evaluators were recorded and taken as primary data.

Inclusion criteria: The evaluators were divided in to two groups.
Group – 1 (Dentists) included 250 evaluators with age group 22-25 years.
Group – 2 (Non-dentists) included 250 evaluators with age group of 22-25 years.

Exclusion criteria: Non-dentists not related with any aesthetic profession.

Construction of the altered digitized profile images: The male and female facial profiles were altered in the AP and vertical directions in the lower third of the face at the soft tissue points: subnasale and sublabiale. Software program (Adobe Photoshop CS3) was used to generate the profile alterations from the original male and female profile images.

Vertical alterations: The LAFH/TAFH (lower anterior facial height/ total anterior facial height) of the two original male and female profile images were almost 55 percent. A normal anthropometric norm for lower anterior facial proportion is 55 ± 2 per cent. For each of the ideal images, the LAFH/TAFH ratio of 55 per cent was increased and decreased by 4 SD. 47 and 63 % LAFH/TAFH ratios were created for each of the images.[7] The 63 % profile image was created by stretching the soft tissue profile at subnasale and sublabiale and the 47% profile image by depressing the soft tissue profile at these points. The soft tissue outlines above the columella and below the soft tissue pogonion was not altered and was identical for all images.

Three vertical profile images of 55, 63, and 47 % LAFH/TAFH ratios for each of the male and female profile views were altered, while the AP proportions were kept constant (Class I).

AP alterations: For each of the three profile male and female Class I images, the positions of the maxilla and the mandible were changed by stretching and compressing subnasale and sublabialeantero-posteriorly by 4 mm increments using the above-mentioned software programs. The Class II (convex facial profile) was created by stretching subnasale anteriorly by 4 mm and compressing sublabiale posteriorly by 4 mm. A Class III (concave facial profile) was created by stretching the sublabiale anteriorly by 4 mm and compressing subnasale posteriorly by 4 mm, so the total AP alteration was 8 mm in each profile image. These alterations were generated to obtain a series of nine different profile images for each of the male and female original profile images. Areas around the alterations were airbrushed to disguise any indication of alteration and to remove any unrealistic areas, especially in lip morphology. This was carried out with a graphics software program (Corel Paint Shop Pro X; Corel Corp.) which did not alter the profile.

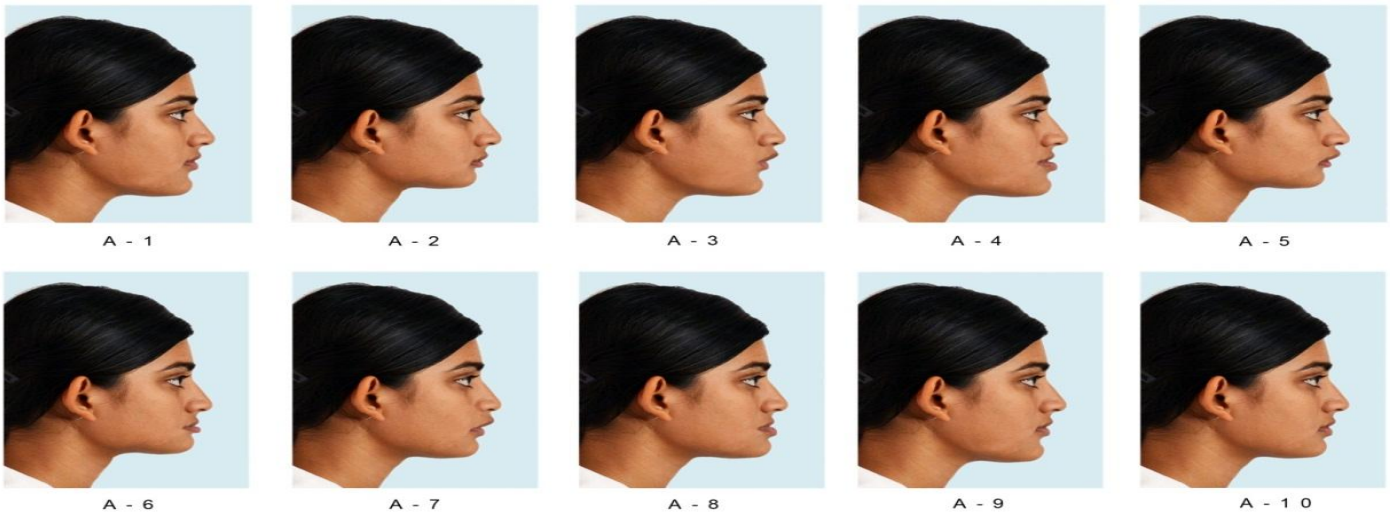

Figure I: The original and altered images of lower anterior face with varied height/total anterior face height ratio of the female profile.

Female profile image	Profile alteration
A1	Class I with increased 63%
A2	Class I reduced 47%
A3	Class II with increased 63%
A4	Class III with increased 63%
A5	Class II reduced 47%
A6	Class III reduced 47%
A7	Class II average 55%
A8	Class III average 55%
A9	Class I INCREASED 63% (Duplicate Image)
A10	Class I average 55%

Figure II: The original and altered images of lower anterior face with varied height/total anterior face height ratio of the male profile.

Male profile image	Profile alteration
B1	Class III reduced 47%
B2	Class II increased 63%
B3	Class I reduced 47%
B4	Class I increased 63%
B5	Class III average 55%
B6	Class II average 55%
B7	Class III increased 63%
B8	Class II reduced 47%
B9	Class I average 55%
B10	Class II increased 63%

The questionnaire: A three-page questionnaire with the color profile images were used for ranking the profile images. The first page had detailed information regarding the age, gender and profession of the evaluators, the second page had nine male altered profile coloured images, and the third page had nine female altered coloured profile images. A duplicate image of one of the altered nine profiles for each of the original test images was included in each set to assess intra-examiner repeatability and reliability of the method, so that 10 digitized images were presented on each page to be ranked by the evaluators. The images of each profile were randomly arranged. The sequence of the profile images for the male was different from that of the female profile images. The evaluators were asked to evaluate and rank each set of the altered 10 images on a 10-point numerical scale, allocating a score of 1 to the most attractive profile and 10 to the least attractive profile for each set separately. They were asked to rank the profiles according to their opinion of the attractiveness of these profiles[19].

Statistical analysis: Estimation Of Sample Size: For the proposed study, the probability of committing Type-I error (α) was fixed at 1% and that of Type-II error (β) at 10%. Thus, the power of the study was 90%. The data required to calculate the sample size was obtained from the previously published scientific article .The sample size for the study was decided to be 500 evaluators (participants) which were divided in to two groups; 250 Dentists and other 250 non-dentist.

Descriptive statistics like Mean, Standard deviation and standard error were obtained to get in sight of collected data. To check significant difference in mean scores between dentist and non-dentist group as well as male and female evaluators, independent t – test was carried out. Significant level was decided at 5% throughout the study. To check reliability of respondents, Cronbach's alpha was obtained.

Results: This study investigated the influence of changing the antero-posterior and vertical proportions of the lower face on the rankings of facial attractiveness. The total sample size was 500 in which 250 were dentists and 250 were non-dentists. Overall 189 male and 311 female evaluators were included in this study. The male: female ratio was 0.61: 1(189: 311).

In dentist group there were 100 male and 150 female evaluators and in non-dentist group there were 89 male and 161 female evaluators present.

The mean age of judges as shown in Table I was approximately 25 years.

Table – I (Mean and Standard deviation)

	Gender	N	Mean Age	Std. Deviation	p-value
Sex	M	189	26.74	3.627	<0.001
	F	311	23.73	2.839	
Group	Dentist	250	24.98	3.488	0.472
	Non Dentist	250	24.75	3.470	

Table – II (Reliability test)

Duplicate Images	Cronbach's Alpha
A1 and A9	0.993
B2 and B10	0.998

To check the reliability of evaluators /assessors duplicate images were put in the list. Reliability was assessed using Cronbach's Alpha statistics (Table II). In both cases (male and female images) alpha was nearer to 1. Hence, it can be inferred that the evaluators were reliable.

Table – III: Descriptive statistic showing mean and standard deviation of ranking given for different images of male and female patients.

	N	Minimum	Maximum	Mean	Std. Deviation
A1	500	1	10	3.05	1.419
A2	500	1	9	4.07	1.042
A3	500	2	10	5.28	1.811
A4	500	1	10	8.01	1.744
A5	500	2	10	7.16	1.371
A6	500	3	10	8.15	1.530
A7	500	1	10	7.22	1.842
A8	500	2	10	8.31	1.247
A9	500	1	6	1.99	.831
A10	500	1	10	1.58	1.169
B1	500	1	10	8.57	1.901
B2	500	2	5	3.21	.528
B3	500	1	10	3.97	2.121
B4	500	1	10	3.74	2.275
B5	500	5	10	7.64	.690
B6	500	2	10	6.09	2.565
B7	500	6	10	7.98	1.023
B8	500	2	10	5.58	1.872
B9	500	1	9	2.70	2.608
B10	500	2	8	3.22	.530

Table – IV Comparison between male and female judges using independent T-test

	Male (189)		Female (n=311)		p-value
	Mean 189	Std. Deviation	Mean 311	Std. Deviation	
A1	3.14	1.589	2.99	1.305	0.272
A2	4.25	1.081	3.95	1.002	0.002
A3	4.85	1.680	5.55	1.840	<0.001
A4	8.03	1.755	7.99	1.739	0.838
A5	7.19	1.510	7.15	1.282	0.768
A6	8.12	1.491	8.17	1.555	0.73
A7	7.36	1.856	7.14	1.831	0.192
A8	8.17	1.307	8.40	1.203	0.051
A9	2.16	.869	1.89	.792	<0.001
A10	1.55	1.419	1.59	.989	0.702
B1	8.46	1.881	8.64	1.913	0.315
B2	3.23	.580	3.20	.494	0.563
B3	4.13	2.060	3.87	2.155	0.177
B4	3.63	2.205	3.81	2.318	0.39
B5	7.65	.718	7.63	.673	0.747
B6	6.07	2.740	6.10	2.457	0.925
B7	7.99	1.016	7.97	1.028	0.819
B8	5.29	1.849	5.76	1.867	0.006
B9	3.06	2.797	2.48	2.464	0.015
B10	3.25	.635	3.20	.455	0.294

Table IV shows comparison of mean ranking for different images by male and female respondents. Mean scores was significantly different among male and female evaluators for images A2, A3, A8, A9, B8 & B9 (p-value <0.05).

Table – V Comparison between Dentist and Non-dentist respondents using independent T-test

	Dentist (n=250)		Non Dentist (n=250)		
	Mean	Std. Deviation	Mean	Std. Deviation	p-value
A1	3.22	1.736	2.88	.983	0.008
A2	3.87	1.064	4.26	.983	<0.001
A3	5.67	1.816	4.90	1.725	<0.001
A4	8.34	1.759	7.67	1.666	<0.001
A5	6.70	1.197	7.63	1.377	<0.001
A6	8.54	1.473	7.76	1.490	<0.001
A7	6.53	1.383	7.92	1.979	<0.001
A8	8.32	1.432	8.31	1.032	0.914
A9	2.14	.875	1.84	.758	<0.001
A10	1.64	1.439	1.52	.813	0.252
B1	8.67	2.129	8.47	1.638	0.23
B2	3.25	.564	3.17	.487	0.075
B3	3.36	1.877	4.58	2.178	<0.001
B4	3.10	2.046	4.38	2.316	<0.001
B5	7.59	.767	7.68	.601	0.136
B6	6.18	2.118	6.00	2.946	0.423
B7	7.66	.700	8.29	1.185	<0.001
B8	5.77	2.040	5.40	1.672	0.028
B9	1.76	1.607	3.64	1.77	<0.001
B10	3.24	.511	3.21	.549	0.556

Table V - Shows comparison of mean ranking for different images by dentists and non-dentists. Mean

scores was significantly different among dentists and non-dentists for images except A8, A10, B1, B2, B5, B6 & B10 (p-value <0.05).

Table – VI Comparison between male and female dentists using independent T-test

	Male (n=100)		Female (n=150)		
	Mean	Std. Deviation	Mean	Std. Deviation	p-value
A1	3.35	1.946	3.13	1.581	0.32
A2	4.08	1.186	3.73	.953	0.011
A3	5.28	1.815	5.93	1.776	0.006
A4	8.41	1.832	8.29	1.713	0.608
A5	6.54	1.321	6.80	1.099	0.093
A6	8.60	1.407	8.50	1.518	0.6
A7	6.47	1.403	6.57	1.373	0.589
A8	8.20	1.449	8.40	1.419	0.28
A9	2.38	.896	1.99	.827	<0.001
A10	1.62	1.739	1.65	1.205	0.886
B1	8.62	2.121	8.71	2.141	0.753
B2	3.30	.628	3.22	.516	0.273
B3	3.50	1.936	3.26	1.837	0.323
B4	2.77	1.711	3.32	2.220	0.037
B5	7.61	.840	7.58	.717	0.763
B6	6.14	2.216	6.21	2.057	0.808
B7	7.68	.790	7.65	.636	0.713
B8	5.48	2.037	5.96	2.026	0.068
B9	2.11	2.049	1.53	1.180	0.005
B10	3.23	.601	3.24	.444	0.880

Table VI shows comparison of mean ranking for different images by male and female evaluators. Mean scores was significantly different among male and female respondents for images A2, A3, A9, B4 & B9 (p-value <0.05).

Table – VII Comparison between male and female Non-dentists using independent T-test

	Male (n=89)		Female (n=161)		
	Mean	Std. Deviation	Mean	Std. Deviation	p-value
A1	2.90	1.012	2.87	.969	0.822
A2	4.45	.917	4.16	1.006	0.026
A3	4.36	1.367	5.19	1.832	<0.001
A4	7.60	1.565	7.71	1.723	0.59
A5	7.91	1.379	7.47	1.356	0.016
A6	7.58	1.405	7.86	1.531	0.157
A7	8.36	1.798	7.67	2.036	0.008
A8	8.15	1.134	8.40	.964	0.065
A9	1.92	.772	1.80	.748	0.231
A10	1.47	.943	1.54	.733	0.525
B1	8.28	1.559	8.57	1.676	0.18
B2	3.15	.512	3.18	.473	0.597
B3	4.84	1.971	4.43	2.277	0.157
B4	4.60	2.305	4.27	2.320	0.284
B5	7.70	.552	7.68	.629	0.806
B6	6.00	3.240	5.99	2.781	0.987
B7	8.34	1.128	8.27	1.218	0.656
B8	5.08	1.597	5.58	1.691	0.024
B9	4.13	3.130	3.36	2.974	0.054
B10	3.28	.674	3.17	.464	0.119

Table VII shows comparison of mean ranking for different images by male and female evaluators. Mean scores were significantly different among male and female judges for images A2, A3, A5, A7, A9& B8. (p-value<0.05).

Ranking of the profile image by the sample: The mean and SD of the scores for the male and female profiles as ranked by the total sample is shown in Table III. Based on the mean rank scores of the female profile, the lowest score was given by the evaluators to A10, while A8 was ranked as the least attractive with the highest mean rank score. The B9 male profile was ranked as the most attractive and B1 as the least preferred with the highest mean rank score.

Ranking of the profile images between genders: Table IV shows the mean and SD of the scores for the male and female profiles as ranked by the female and male evaluators. The significant differences were found between genders in the ranking of female and male profile images. The female profile images A2 and A9 were judged more attractive by male evaluators than female evaluators. While A3 and A8 were judged less attractive by female evaluators than male evaluators.

For male profile image B9 was ranked as more attractive by female evaluators than male evaluators

and B8 male profile image was ranked less attractive by female evaluators than male evaluators.

Ranking of the profile images between dentist group and non-dentist group: According to Table V the female profile images like A7 and A9 were ranked as more attractive by dentist group than non-dentist group and A2 was ranked as more attractive by non-dentist group than dentist group, while the female profile images like A3, A4, A5 and A6 were judged less attractive by dentist group than the non-dentist group.

For male profile images, B4 and B9 were ranked as more attractive by dentist group than non-dentist group and B3 was ranked as more attractive by non-dentist group than dentist group, while B7 male profile image was ranked as less attractive by non-dentist group than dentist group and B8 was ranked as less attractive profile image by dentist group than non-dentist group. All the above mentioned results were statistically significant.

Ranking of the profile images between male dentists and female dentists: According to Table VI, the female profile images like A2 and A9 were ranked as more attractive by male dentists than female dentists and A3 was ranked as less attractive female profile image by female dentists than male dentists. While for male profile image B4 was ranked as more attractive by male dentists than female dentists and B9 was ranked as more attractive by female dentists than male dentists. All the above mentioned results were statistically significant.

Ranking of the profile images between male and female non-dentists: According to table VII, the female profile images like A2 and A7 were ranked as more attractive by female non-dentists than male non-dentists and female profile images like A3 and A5 were ranked as less attractive by female non-dentists than male non-dentists. While, for male profile image B8 was ranked as less attractive by the female non-dentists than male non-dentists. All the above results were statistically significant.

Discussion: This study aimed to investigate the influence of changing the AP and vertical facial proportions on attractiveness rankings and to determine if these rankings would be influenced by gender and profession of the evaluators.

The profile images: Facial profile images were used as a means of stimulus presentation. It has been shown that photographs provide valid, reproducible, and representative ratings of dental and facial appearance.[4] On the other hand, silhouettes have the advantages of subjectivity and simplification of facial aesthetics, discarding many extrinsic (hair style, make up) and intrinsic (skin complexion, emotional expression) factors that may influence the individual's concept of beauty.

The perception of the profile images by the total sample: The sample population perceived the Class I male profile with a normal LAFH/TAFH ratio to be the most attractive followed by the Class I male profile with an increased LAFH/TAFH. The Class I female profile with a normal LAFH/TAFH ratio was perceived to be the most attractive followed by the Class I female profile with an increased LAFH/TAFH. According to Sarah H . Abu Arqoub et al.[23] Class I profile image of male with normal LAFH/TAFH ratio was the most attractive followed by the Class I male profile with a reduced LAFH/TAFH and the Class I female profile with a reduced LAFH/TAFH ratio was perceived to be the most attractive followed by the Class I female profile with a normal LAFH/TAFH. Several authors have reported that subjects with Class I profiles were rated as more attractive than those with Class II or Class III profiles.[14, 18]

According to Sarah H. Abu Arqoubet al.[23] the Class II male and female profiles with an increased lower face height were found to be the least attractive. Considering the AP skeletal discrepancies, the present findings were in agreement with some other studies that found that Class II profiles were regarded as less attractive than Class III profiles.[9, 18] On the other hand, other studies reported Class III profiles with mandibular prognathism to be the least preferred by Japanese and Asian communities.[14] In the present study, most of the subjects perceived the Class III male profile with a decreased normal lower face height and the Class III female profile with normal lower face height to be the least attractive. Such findings might be due to cross-cultural differences between different populations.

For the vertical skeletal discrepancies, the choice of an increased lower facial proportion as the least attractive for both male and female profiles strongly agrees with other findings in Western and Japanese

populations.[7, 9] However, this finding was in disagreement with the study of Erbay and Caniklioglu[8] in 2002 who found that images of Turkish adults with increased lower facial proportion were more attractive than those with reduced lower facial proportion.

Influence of gender on the rankings of attractiveness: No significant differences were found in the overall rankings of the most and least attractive male and female profile images between the female and male evaluators in the sample. This indicates a similar standard for facial aesthetics between genders. The only significant differences between genders were (1^{st}) in the ranking of the female Class II profile with a reduced LAFH/TAFH. The image was ranked as being significantly less attractive by the male evaluators than by the female evaluators. (2^{nd}) the ranking of the female Class II profile image with increased LAFH/TAFH was ranked as being significantly less attractive by the female evaluators than by the male evaluators. (3^{rd}) the ranking of the female Class III profile image with normal LAFH/TAFH was ranked as being significantly less attractive by the female evaluators than by the male evaluators. (4^{th}) the ranking of female Class I profile image with increased LAFH/TAFH was ranked as being significantly less attractive by the male evaluators than by the female evaluators. (5^{th}) the ranking of the male Class II profile image with decreased LAFH/TAFH was ranked as being significantly less attractive by the female evaluators than by the male evaluators. (6^{th}) the ranking of the male Class I profile image with normal LAFH/TAFH was ranked as being significantly more attractive by the male evaluators than by the female evaluators.

Conflicting results exist in the literature in evaluating the relationship between gender and profile preferences. Several studies failed to find significant gender differences in the assessment of facial aesthetics by different population evaluators.[7,9]

However, other studies found that female evaluators judged all photographs to be more attractive than male evaluators; male evaluators were the most critical judges when determining dental facial attractiveness.[21]Turkkahraman and Gokalp[18] in 2004 found that gender had an effect on profile preferences in the Turkish population and significant differences were observed between genders. Although overall profile rankings of males and females were similar; males preferred convex female profiles more than females and females preferred concave female profiles more than males.

Influence of profession and education of the assessors on the rankings of attractiveness: The Class I male profile image with a normal LAFH was selected by the two groups (dentist group and non-dentist group) as the most attractive male image which is statistically significant. However, dentist group gave it a significantly lower mean score, considering it to be more attractive than the non-dentist group. For females Class I profile image with a normal LAFH was selected by the two groups as the most attractive which was statistically not significant.

Moreover, dentists found the Class I male profile image with a reduced LAFH to be significantly attractive by non-dentist group than the dentist group, where Class I male profile with an increased LAFH was significantly more attractive by non-dentist group than the dentist group. It was also found the Class II male profile with decreased LAFH was to be less attractive judged by the dentist group than the non-dentist group and the Class III male profile with increased LAFH was to be less attractive judged by non-dentist group then the dentist group.

For the female profile image the Class II and Class III with increased LAFH were found to be less attractive by dentist group than the non-dentist group and the Class II female profile image with reduced LAFH to be less attractive by non-dentist group than dentist group while Class III female profile with reduced LAFH to be less attractive by dentist group than the non-dentist group. Moreover, the female Class I profile with increased LAFH was found to be more attractive by the dentist group than the non-dentist group while the female Class I profile with reduced LAFH to be more attractive by the non-dentist group than the dentist group and the female Class II profile with normal LAFH to be less attractive by the non-dentist group than the dentist group.

Comparison of rankings in dentist group between male and femaleevaluators: Even in the dentist group we can compare the rankings which were given by male dentist and female dentist. For female Class I profile with reduced LAFH was found to be more attractive by male dentists than female dentists and

female Class I profile with increased LAFH to be more attractive by male dentists then female dentists. However, male Class I profile with increased LAFH was judged to be more attractive by female dentists than male dentists and in male Class I profile with normal LAFH was found to be more attractive by female dentists than male dentists.

Comparison of rankings in non-dentist group between male and female evaluators: In the non-dentist group we could compare the rankings which were given by male non-dentist and female non-dentist. Female Class I profile with decreased LAFH were ranked more attractive by male non-dentists than female non-dentists, female Class II profile with increased LAFH was ranked less attractive by female non-dentists than male non-dentists, female Class II profile with reduced LAFH was ranked less attractive by male non-dentists than female non-dentists and for female Class II profile with normal LAFH were ranked more attractive by female non-dentists than male non-dentists. However in males Class II profile with reduced LAFH was ranked less attractive by female non-dentists than male non-dentists.

The results showed that relative standards exist for facial attractiveness within the different professional subgroups. In general, differences between non-dentists and dentists for facial aesthetics were consistent with other studies.[4, 18, 22] Dentists tend to be more sensitive in their judgement than non-dentists due to their training, educational background and knowledge of facial impairments. Additionally, dentists appear to have a greater ability to discriminate profile changes due to observing more extreme deviations from normal.[5, 11] Moreover, non-dentists tend to concentrate on other extrinsic facial features such as chin shape, size and shape of the nose, hair colour and style, etc., which can influence the perception of attractiveness.

In previous studies, agreement was found between lay judges and clinicians in the judgement of attractiveness which is not consistent with the present results.[10, 12, 19, 20] This could be due to the differences in the methods used for the assessment of attractiveness; When profile drawings and silhouettes are used, little differences are expected between clinicians and lay people in the assessment of attractiveness since both would have to base their evaluation on one variable (the profile outline).

Conclusion: The orthognathic male and female image with a normal LAFH was the most preferred profile. The combination of a Class III malocclusion with a decreased LAFH was the least preferred of both the male and female profiles. Images with decreased lower facial proportions were considered to be less attractive than corresponding images with an increased lower proportion and those with Class III profiles features were considered to be less attractive than corresponding images with Class II profile features.

The quality of aesthetic preferences differed between professions. The ranking procedure used is a simple, rapid and reliable method for the assessment of attractiveness.

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