

Perceptions of dental aesthetics among future Arabian oral health care professions: A cross-sectional study

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Abstract

Aim: To evaluate the perceptions of dental aesthetics among future oral health care professionals.

Methods: A questionnaire study was conducted among undergraduate dental students attending a government university in Saudi Arabia. As self-administered, the questionnaire was sent to all the students appearing in college of dentistry, Majmaah University. Data collection comprised of socio-demographics, self-perceived dental aesthetics. Statistical analysis involved Pearson's chi-square test, and the level of significance was set at 5% ($p < 0.05$).

Results: A total of 140 students (87 males and 53 females) responded to the study questionnaire. Grade-wise, the number of students who participated was 11 from first, 23 from the second, 27 from third, 31 from fourth, 17 from fifth, 31 from the internship. Most male students felt that others have a better smile, and females were more confident about their smiles than others ($p=0.17$). In addition, the feeling of a better smile was increased with the grade ($p=0.20$).

Conclusion: Feature Arabian dental students have diverse opinions when assessing their aesthetics, while males felt others had good smiles and females were confident about their smiles. Gender and grade seem to influence the evaluation of aesthetics in the anterior region.

Keywords: aesthetics, undergraduate students, Saudi Arabia, dentistry

1. Introduction

In the current society, the look is an essential aspect in influencing the appeal of a face. It plays an integral part in interaction with peers. Dental aesthetics is one of the critical components of appearance, and dental appearance plays a vital role in self-confidence. The key contributing factor for improving dental appearance is self-desire. Nonetheless, dental appearance influences self-esteem, self-confidence, and self-consciousness about their smile. People are keener towards

dental appearance; it has become an essential part of the face. Dental aesthetics have become necessary in the modern era for patients' dental operatory compared to the need or function. ⁽¹⁾ It has been stated that the smile has a considerable impact on the physical attractiveness of any individual. ⁽²⁾ Among the essential factors affecting overall dental appearance are tooth color, position, shape, and restoration quality. ⁽³⁾ The teeth' general alignment, especially in the anterior region with tooth color, plays a vital role in attractiveness and self-confidence. ^(4,5)

Dental aesthetics is an essential aspect of daily clinical practice related to patients' preferences, sociodemographics, and cultures. ⁽²⁾ High self-esteem and confidence will be achieved by creating beauty and attraction through aesthetics. ^(5,6) Beauty is always very subjective for every individual; similarly, dental aesthetics has various beliefs among different populations in both genders. ⁽⁷⁾ Prior studies demonstrated different views for diverse peoples and groups concerning their perceptions of dental aesthetics. ⁽⁸⁻¹⁵⁾ Dentists

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Authors Contribution

SA is contributed solely to performing the study and preparation of the manuscript.

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are the first person who deals with aesthetics and facial beauty.⁽¹⁰⁾ Perceptions of dental appearance are determined by individual preferences and cultural factors. Therefore, it is imperative to know dental aesthetics among dental students during their education in dental school. This knowledge could affect their consciousness of facial attractiveness. Furthermore, dental students are future oral care professionals who would ultimately have a higher perception of their dental aesthetics. To date, there is no study performed to evaluate undergraduate dental students' perceptions of their aesthetics. Therefore, the study aimed to assess dental aesthetics' perceptions among future Arabian oral health care professionals.

2. Materials and Methods

2.1 Ethical Approval

The study was approved by the Institutional ethical committee, Majmaah University, Al Majmaah, Kingdom of Saudi Arabia, under the IRB No MUREC-July26.Com/2020-34-4.

2.2 Questionnaire adoption

A dental esthetics questionnaire of self-perception, which Goldstein⁽¹⁶⁾ initially designed, was given to participants.

2.3 Participants and setting

A descriptive-analytical study with a cross-sectional design was used for the study. Study participants were recruited randomly from the first to the fifth year of the dental course at the dentistry college, al-Maajmah University. The purpose of the study and how to answer the questionnaire were clearly explained to students. All participating students gave signed informed consent before the start of the study. The questionnaire consists of 15 questions with three individual choices "Yes," "No," and "Maybe." The questions inquired about personal perception regarding better smiles than others, confidence about smiling, smile as pretty models, defects in teeth and gums, color and size of teeth, visibility of gums during a smile, hand over mouth while smiling, photographs from one side of the face.

2.4 Statistical analysis:

Frequencies were calculated, and associations between categorical variables were tested with the Pearson's Chi-square test. Descriptive statistics for the statistical analysis. The comparisons were made among the gender of the and year of study dental undergraduates' students. The analysis was performed using SPSS (Version 21.0, IBM SPSS

21.0®; IBM, Armonk, USA) and a P value less than 0.05 was considered statistically significant.

3. Results:

A total of 140 students participated in the study, among which 87 were males, and 53 were females. The number of students who participated was 11 from the first year, 23 from the second year, 27 from the third year, 31 from the fourth year, 17 from the fifth year, 31 from the internship. The overall response for all the questions was shown in Table.1. The comparison of responses with overall scores based on gender and year of study was shown in Figure 1 and Figure 2, respectively. The perception of a better smile than others was responded to by 72.9% (Table 1). A significant difference among males and females and between year of study (Table 2; Figure 1). The majority of male students felt that others have a better smile, and females were more confident about their smiles than others ($p=0.17$). The feeling of a better smile was increased with a year of study ($p=0.20$). Concerning self-confidence about smiling, there was no significant difference between genders and year of study, but the majority (56.4%) of participants were confident about their smiles. Smiling as pretty models were perceived by only 42.9% as yes, and there was no significant difference in gender or year of study. The majority of students wished their teeth to be whiter (59.3%) and were satisfied with the way gums look (61.4%). No significant differences were noticed regarding size, shape, or length of teeth between grades of study and gender, but most students liked their teeth shape (71.4%) shown in Figure 1. Statistically, a significant gender difference was noticed in the perception of gum visibility while smiling, with the majority of males who disliked it ($p=0.29$). The majority of female students reported hand over their mouth while smiling than males and the difference was statistically significant ($p=0.011$). Among all the students' preponderance, the interns felt others had better smiles than their smiles ($p<0.05$). The majority of the fifth-year students thought they have defects in their teeth and gums than other students ($p<0.05$). Over 32% of the females who participated in the study opined that they keep a hand over your mouth when you smile than males (16%), and results were statistically significant (Table 3). Seventy percent of the participants interns responded yes to the question Is there someone you believe has a better smile than you; among them, 80% of males responded yes ($p<0.05$) (Table 2), and the findings were significant compared to the year of study

(Table 3). Forty-seven percent of the participants responded yes to the question when you look at your smile in the mirror, do you see any defects in your teeth and gums? among them, 43% were females ($P>0.05$) compared to males (Table 2) and 64.7% of fifth years students responded yes ($p<0.05$) compared to other students (Table 3).

4. Discussion

Although, images of dental arches and facial images were used for the assessment in the published literature. (11-21) Prior studies included dental shade, dental size, alignment, dental shape, dental proportions, shape of the interproximal contacts, and gingival horizontal level buccal corridor, symmetry of dental arches, and midline deviation diastemata, and facial attractiveness used for the analysis. (22-31) The expectations and belief to have a successful marriage, better jobs, and a happier life were linked to better aesthetics. Pleasing aesthetics' thought process leads to a better life starts at an early age and lasts a lifetime. Poor dental aesthetics have linked to decreased social acceptance, academic disadvantage, lack of self-confidence. (32) The undeniable role of a beautiful smile and appearance makes young people be more aesthetic conscious. (33) Female patients were more interested and critical in judging smile aesthetics than males. (34-37)

Tooth color is a crucial factor affecting aesthetics it is very important to have an idea of aesthetics among dental students. Dental students are future oral healthcare professionals and considered as sculpture artists of a beautiful smile to patients. These upcoming dentists should identify patient demands, needs, expectations, and aesthetic treatment outcomes to refer or treat. Hence the perception of these young individuals on aesthetics is of paramount importance. Unfortunately, literature studying dentists' perceptions of aesthetics is less than laypersons. (37) Therefore, dental students should be encouraged to discuss various ideas and concepts in smile designing while planning treatments for their clinical training. A consensus of aesthetics in patients' and dentists' perceptions plays a vital role in the success of treatment rendered. Understanding the differences in perception is essential to address the patient's needs and expectations regarding aesthetics. (38)

Gingival show or display plays a significant role in smile perception. A gummy smile or excessive collection of gingival makes a smile unpleasant. An appropriate or beautiful smile includes a show of the maxillary incisor crowns with 1-2 mm of gingiva

display. (39) In this study, one-third of the dental undergraduate students professed an abnormal gingival growth and a statistically significant difference in perception threshold with males' majority disliked than females. Saudi dentists and laypersons accepted the gingival display of up to 1 mm. (40) Moore and co-workers (41) suggested that the threshold of acceptability is 3 mm. Ker and co-workers (33) reported that the ideal gingival display is 2.1 mm, with an acceptable range of 4 mm. Alhammedi and co-workers (42) studied the perception of facial, dental, and smile aesthetics by dental students and noticed that male students had higher scores than females. They also found that clinical students perceived better aesthetic scores than pre-clinical students.

Cracel-Nogueira and Pinho (43) conducted the study with dental professionals, dental students, and laypersons and compared the smile's aesthetic perception. The authors found that all the participants had varied opinions on attractiveness and smile features. A smile with gingival exposure of 2mm was the most appreciated, and >3mm gingival show was measured as the least pleasing smile. Laypersons are more liberal than dental professionals in evaluating the characteristics of the smile. Kokich and co-workers (44) also performed the study with laypeople and dental professionals by comparing dental aesthetics. They found that both groups had not accepted more than 3 mm of the gingival display for an attractive smile. The present study's findings coincided with another study; however, the analysis was performed with young adults than older individuals. (45) The authors found a lesser satisfaction with the appearance of their participants involved in the study. Additionally, a few differences were identified in the remaining entities include soft tissue and crown features. Nonetheless, the prior reported studies (45-47) on perceptions of aesthetics focused on dental students, dentists, laypeople, and dentists professionals, and none of these studies focused on further dentists alone. There is no analysis performed to evaluate perceptions of their aesthetics among dental students in Saudi Arabia. Therefore, the present study is considered the first of its kind in this context from Saudi Arabia. The sample size is comparatively small; hence, the findings might not be generalized. This awareness might be due to the more significant media influence, increased aesthetic, peer pressure, social media influence, and social acceptability. Furthermore, overall, the students from higher classes showed more attention to their smiles for improvement. However, the sample size utilized in

the study was minimal, and the study was confined to students from one college. These were considered limitations of the study, and the differences in the gender and year of the study of the dental undergraduates' students were more prominent in the present study.

5. Conclusion

In our study, most of the younger participants perceived lower confidence levels to smile and believed others had a better smile. However, the majority of participants want their teeth to be whiter and look like pretty models. Gender and grade impact the perception of aesthetics of further dental professionals of Saudi Arabia. A study with a large sample size is essential to draw further conclusions.

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Table 1. Overall responses of dental students on their perceptions of aesthetics.

	Question	Yes (%)	No (%)	May be (%)
Q1	Is there someone you believe has a better smile than you?	72.9%	10.0%	17.1%
Q2	Are you self-confident about smiling?	56.4%	17.9%	25.7%
Q3	Do you look at magazines and wish you had a smile as pretty as the models?	42.9%	41.4%	15.7%
Q4	When you look at your smile in the mirror, do you see any defects in your teeth and gums?	47.1%	32.9%	20.0%
Q5	Do you wish your teeth were whiter?	59.3%	18.6%	22.1%
Q6	Are you satisfied with the way your gums look?	61.4%	20.7%	17.9%
Q7	Do you show too many or too few teeth when you smile?	48.6%	29.3%	22.1%
Q8	Are your teeth too wide or too narrow?	20.0%	58.6%	-----
Q9	Are your teeth too square or too round?	35.7%	64.3%	-----
Q10	Do you like the way your teeth are shaped	71.4%	13.6%	15.0%
Q11	Do you show too much of too little gum when you smile?	35.7%	46.4%	17.9%
Q12	Are your teeth too long or too short?	20.7%	62.1%	-----
Q13	Do you ever put your hand over your mouth when you smile?	22.1%	62.9%	15.0%
Q14	Do you photograph better from one side of your face?	52.9%	34.3%	12.9%

Table 2. Comparison of perceptions of aesthetics among the dental students based on their gender.

Questions	Females	Males	p-value
Is there someone you believe has a better smile than you?	60.40%	80.50%	0.01*
Are you self-confident about smiling?	56.60%	56.30%	0.15
Do you look at magazines and wish you had a smile as pretty as the models?	43.40%	42.50%	0.66
When you look at your smile in the mirror, do you see any defects in your teeth and gums?	45.30%	48.30%	0.94
Do you wish your teeth were whiter?	56.60%	60.90%	0.62
Are you satisfied with the way your gums look?	62.30%	60.90%	0.90
Do you show too many or too few teeth when you smile?	49.10%	48.30%	0.50
Are your teeth too wide or too narrow?	17.00%	21.80%	0.07
Are your teeth too square or too round?	30.20%	39.10%	0.28
Do you like the way your teeth are shaped	64.20%	75.90%	0.26
Do you show too much of too little gum when you smile?	45.30%	29.90%	0.02*
Are your teeth too long or too short?	26.40%	17.20%	0.19
Do you ever put your hand over your mouth when you smile?	32.10%	16.10%	0.01*
Do you photograph better from one side of your face?	54.70%	51.70%	0.91

*Significant (p<0.05)

Table 3. Comparison of perceptions of aesthetics among dental students based on their grade.

Questions	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Intern	p-value
Is there someone you believe has a better smile than you?	63.60%	60.90%	88.90%	61.30%	76.50%	80.60%	0.02*
Are you self-confident about smiling?	81.80%	60.90%	40.70%	64.50%	58.80%	48.40%	0.39
Do you look at magazines and wish you had a smile as pretty as the models?	63.60%	30.40%	40.70%	35.50%	58.80%	45.20%	0.14
When you look at your smile in the mirror, do you see any defects in your teeth and gums?	9.10%	26.10%	51.90%	51.60%	64.70%	58.10%	0.02*
Do you wish your teeth were whiter?	63.60%	69.60%	63.00%	48.40%	58.80%	58.10%	0.21
Are you satisfied with the way your gums look?	63.60%	69.60%	63.00%	67.70%	70.60%	41.90%	0.16
Do you show too many or too few teeth when you smile?	27.30%	56.50%	51.90%	54.80%	64.70%	32.30%	0.26
Are your teeth too wide or too narrow?	18.20%	26.10%	11.10%	19.40%	35.30%	16.10%	0.61
Are your teeth too square or too round?	27.30%	39.10%	37.00%	29.00%	41.20%	38.70%	0.92
Do you like the way your teeth are shaped	54.50%	78.30%	74.10%	77.40%	70.60%	64.50%	0.12
Do you show too much of too little gum when you smile?	18.20%	30.40%	14.80%	29.00%	11.80%	16.10%	0.06
Are your teeth too long or too short?	18.20%	21.70%	40.70%	51.60%	35.30%	32.30%	0.08
Do you ever put your hand over your mouth when you smile?	18.20%	26.10%	22.20%	32.30%	23.50%	9.70%	0.41
Do you photograph better from one side of your face?	54.50%	52.20%	51.90%	48.40%	64.70%	51.60%	0.97

*Significant (p<0.05)

Figure legends:

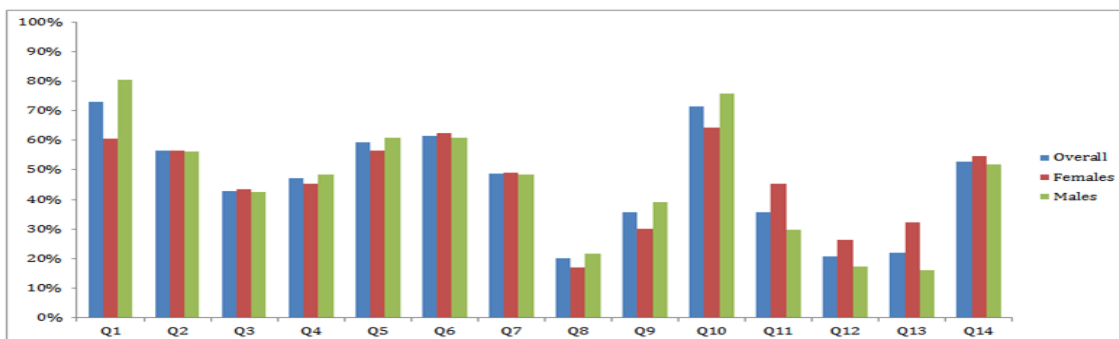


Figure 1. Perception scores on aesthetics among the dental students based on their gender compared to overall scores.

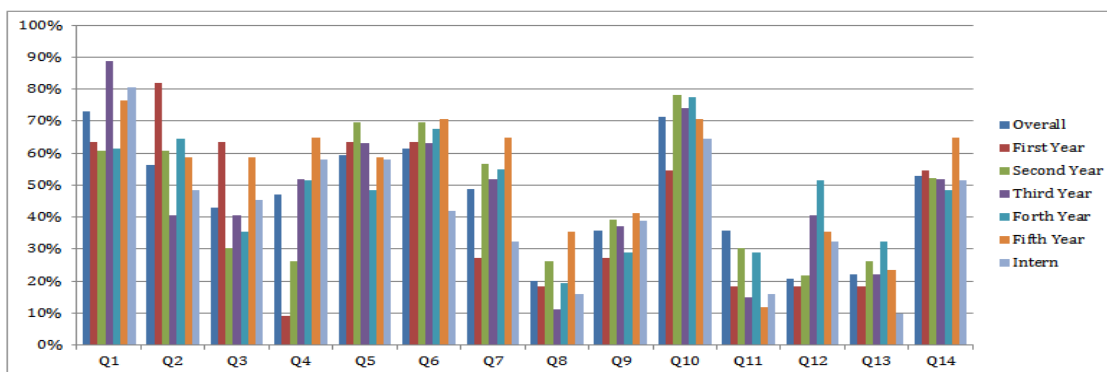


Figure 2. Perception scores on aesthetics among the dental students based on their grade compared to overall scores.