



## **Perception of Dental Aesthetics among Dental Students; a Cross-sectional Study in Riyadh, Kingdom of Saudi Arabia**

**Mashari Mulayfi Alanazi<sup>a#</sup>, Sulaiman Abdullah Alsanie<sup>b</sup>, NawafJazaa Alotaibi<sup>b</sup>,  
Ahad K. Alenezi<sup>a#</sup>, Waleed Abaradie<sup>b</sup>, Badr Soliman M. Alhussain<sup>c</sup>  
and Shahzeb Hasan Ansari<sup>d\*†</sup>**

<sup>a</sup> Ministry of Health, Riyadh, Saudi Arabia.

<sup>b</sup> Private Dental Clinic, Riyadh, Saudi Arabia.

<sup>c</sup> Consultant Restorative Department, Prince Sultan Military Medical City, Riyadh, Saudi Arabia.

<sup>d</sup> Preventive Dentistry Department, Riyadh Elm University, Riyadh, Saudi Arabia.

### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors made best contribution for the concept, assessment and evaluation, data acquisition and analysis and interpretation of the data. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i51A33485

Editor(s):

(1) Dr. Ana Cláudia Coelho, University of Trás-os-Montes and Alto Douro, Portugal.

Reviewers:

(1) Mandava Prasad, NTR University of Health Sciences, India.

(2) Vineet Golchha, Inderprastha Dental College, India.

Complete Peer review History, details of the editor(s), Reviewers and additional Reviewers are available in this link:  
<https://www.sdiarticle5.com/review-history/77348>

**Received 07 September 2021**

**Accepted 15 November 2021**

**Published 23 November 2021**

**Original Research Article**

### **ABSTRACT**

**Background:** Dental aesthetics is now a necessary area in the field of dentistry, and new graduates' perceptions should be investigated. Hence the present cross-sectional study aimed to assess the perception about dental aesthetics among clinical interns, dentistry interns, and pre-clinical interns in dental colleges on Saudi Arabia.

**Materials and Methods:** The study subjects comprises of all above three (clinical interns, dentistry interns, and pre-clinical interns) groups volunteered from different colleges. Perception about dental aesthetics was measured using a 14 item questionnaire. Chi-square test was performed on SPSS to determine the statistically significant differences ( $p < 0.05$ ) across gender and dentistry level.

**Results:** Findings revealed 61% of the participants were male while 39% were female. Among them, 26% were pre-clinical interns, 41% were dental interns and 33% were clinical students. All the

<sup>#</sup>General practitioner

<sup>†</sup>Faculty

<sup>\*</sup>Corresponding author: E-mail: [shahzebhasan@riyadh.edu.sa](mailto:shahzebhasan@riyadh.edu.sa);

participants reported some kind of dissatisfaction with appearance of their teeth and males were more satisfied and confident about their teeth and smile than females.

**Conclusion:** To conclude, in the present study male participants and clinical students were confident about their smile as compared to female while dental interns thought others have good smile. The study reported the significant gender differences on looking at magazines, having whiter teeth, they way gums look and putting hand over mouth while non-significant differences across dentistry level.

*Keywords: Dental aesthetics; dental students; interns; perception.*

## 1. INTRODUCTION

Several orthodontic concepts on face symmetry are centred on primary dentition, which is essential for a healthy smile. Aside from smile design, other aspects of aesthetic dentistry include facial bone structure, occlusal, the importance of the mandibular arcade, the "golden proportion," and gingiva appearance—all of which can affect the participant's face, pleasure, and attractiveness [1-3]. Physical aesthetics are becoming increasingly important in modern culture, and among which dental aesthetic procedures gaining popularity for their potential to enhance face attractiveness [4].

The psychological benefits of attractive facial aesthetics are a key reason why patients (particularly young individuals) seek corrective dental treatment. The desire to make cosmetic alterations to one's face is typically self-perceived, and it can have an impact on one's self-confidence and quality of life [5]. Aesthetic treatments include restorative, orthodontic, prosthodontic, and surgical procedures. In conclusion, dentistry graduates exposed to all aspects of dental care must be educated about the various cosmetic procedures and their prescriptions; this in turn demonstrates a fresh doctor's knowledge [6].

As innovation advances, individuals are keener on knowing how dentistry might assist them with working on their grins. Sophisticated or corrective dentistry means to mix excellence and capacity while considering the qualities and requirements of every individual patient. Medicines include more than just smile rebuilding; it is additionally concerned about changes in facial profile and jaw amendment. Hence, style assumes a fundamental part in an individual's life by boosting confidence. Stylish dentistry is a gift by human intelligence since it changes a unacceptable dentition into a marvel. Everybody needs to be seen by others, and dental feel permits them to do so [4].

Zawawi, K.H, and partners in 2013 said that the teeth characterize smile style, which is outlined by the lips, the state of the gums, and the number of holes and voids. The bend of the smile, the extent of the teeth, the presence of a midline shift and changes in pivotal tendency, buccal halls, gingival stature and shapes, the presence of a diastema, and the shade of the teeth all add to a attractive smile's agreement and evenness [7]. Although each aspect may be evaluated alone, all components must work together to generate the integrity that results in the ultimate aesthetic impression. In addition, patients' smiles are becoming increasingly significant, and they seek orthodontic treatment with more precise goals in mind. Thus, while settling on orthodontic treatment, it is fundamental to get what the way of life thinks fits as far as smiling attributes [8]. The European Relationship for Dental Training and the North American Dental Schooling Affiliation have characterized fundamental and supporting dental capacities that graduate dentistry understudies ought to have, like the ability to perceive a patient's stylish necessities and assess the degree to which such requirements or wishes might be fulfilled [9].

Dental students are typically forced to repair patients' front teeth with aesthetically restorative or prosthetic treatments during their undergraduate studies. Given their lack of practical expertise and lack of a skilled and alert eye that can quickly spot asymmetry or imbalances, knowledge of aesthetic criteria and standards is essential to help them in giving therapy. Education appears to substantially impact aesthetic perception and subsequent treatment recommendations [10]. Every individual's view of magnificence is remarkable; this subjectivity might impact their measure of tasteful consideration dependent on sexual orientation, age, race, monetary position, conjugal status, level of training, work, familial impact, social openness, and social standing [11]. Hence the aim of the study was to

determine the knowledge and perception of senior dental students regarding the perception of dental aesthetics and to compare the responses on the basis of dentistry year and gender.

## 2. MATERIALS AND METHODS

The participants in this cross-sectional observational study were from the Saudi Arabia region.

**Study Design:** This was a cross sectional study conducted among the senior dental students of Riyadh using an online survey.

**Study Sample:** 154 students from clinical levels were utilized in this study. A minimum sample of (N=150) was considered based on the prevalence of dental caries in upper anterior dentition and acceptable margin of error of 5%, a confidence level of 95%.

**Study Instrument:** Online questionnaire was constructed consisting of questions related to demographic data followed by questions including knowledge and perception towards the dental aesthetics.

**Instrument Validity and Reliability:** A pilot study was conducted by sending the survey to 20 participants and the data will be inserted in SPSS version 22 to determine the reliability by using Chronbach's coefficient alpha (value: 0.712). Validity of the questionnaire was tested by

sending it to experienced researchers in REU where no changes were made.

**Statistical Analysis:** Collected data was analyzed using SPSS version 22, where descriptive as well as inferential statistics were conducted. Comparisons between groups were made with the value of significance kept under 0.05.

## 3. RESULTS

In the present study on perception of dental aesthetic among dental students, 61% of the participants were male while 39% were female. Among them, 26% were pre-clinical interns, 41% were dental interns and 33% were clinical students. 60.4% of them were confident about smiling, 22.1% not confident and the remaining were not sure of either of the above two options. 51.9% responded that they look at magazines and wish to smile like models, 31.8% said no while remaining were uncertain of both. 55.2% see defects in their gums, and 63.6% want their teeth to be whiter. 51.9% are satisfied with the appearance of their gums, and 55.8% show either too many or too few teeth while smiling. 47.4% believe their teeth are too wide or narrow, while 33.1% do not think about this. 53.2% think their teeth are too square or too round, 51.3% like the way their teeth are shaped. 43.5% show too little gum while smiling, and 51.9% think their teeth are too long or short. 42.9% put a hand over mouth while smiling, and 47.4% photograph better from one side of their face (Table 1).

Table 1. Frequency table

Questions	Frequency
<b>Gender</b>	
Male	94(61%)
Female	60(39%)
<b>Dentistry Level</b>	
Pre-clinical Intern	40(26%)
Dental Intern	63(41%)
Clinical Students	51(33%)
<b>Is there someone you believe has a better smile than you?</b>	
Yes	110(71.4%)
No	18(11.7%)
May be	26(16.9%)
<b>Are you self-confident about smiling?</b>	
Yes	93(60.4%)
No	34(22.1%)
May be	27(17.5%)
<b>Do you look at magazines and wish you had a smile as pretty as the models?</b>	

Yes	80(51.9%)
No	49(31.8%)
May be	25(16.2%)
<b>When you look at the smile in the mirror, do you see any defects in your teeth and gums?</b>	
Yes	85(55.2%)
No	48(31.2%)
May be	21(13.6%)
<b>Do you wish your teeth were whiter?</b>	
Yes	98(63.6%)
No	29(18.8%)
May be	27(17.5%)
<b>Are you satisfied with the way your gums look?</b>	
Yes	80(51.9%)
No	41(26.6%)
May be	33(21.4%)
<b>Do you show too many or too few teeth when you smile?</b>	
Yes	86(55.8%)
No	38(24.7%)
May be	30(19.5%)
<b>Are your teeth too wide or too narrow?</b>	
Yes	73(47.4%)
No	51(33.1%)
May be	30(19.5%)
<b>Are your teeth too square or too round?</b>	
Yes	82(53.2%)
No	42(27.3%)
May be	30(19.5%)
<b>Do you like the way your teeth are shaped?</b>	
Yes	79(51.3%)
No	39(25.3%)
May be	36(23.4%)
<b>Do you show too much or too little gum when you smile?</b>	
Yes	67(43.5%)
No	57(37%)
May be	30(19.5%)
<b>Are your teeth too long or too short?</b>	
Yes	80(51.9%)
No	50(32.5%)
May be	24(15.6%)
<b>Do you ever put your hand over your mouth when you smile?</b>	
Yes	66(42.9%)
No	65(42.2%)
May be	23(14.9%)
<b>Do you photograph better from one side of your face?</b>	
Yes	73(47.4%)
No	49(31.8%)
May be	32(20.8%)

In Table 2, differences are explored across gender through chi-square. Findings reported that more female and male students were dental interns. More male participants think that others

may have a better smile than them as compared to female participants. 61 males are confident about smile while 32 females are confident. An almost equal number of participants from both

groups look at a magazine and think they might have a smile like models. 53 males while 32 females looks at the mirror and see defects in their gums. Asking upon having whiter teeth, both groups responded yes in higher proportion. More males were satisfied with the way their gums look as compared to female participants. A higher percentage of males showed either too many or too few teeth while smiling than females, same stats on both teeth too wise or too narrow

and teeth too square or too round—both groups like the way their teeth are shaped while a significant number disagree also. Males did not put a hand over mouth while smiling while females do this. Both groups photographed better from one side of their face.

Table 3 tells us about the differences across the dentistry level mentioned above.

**Table 2. Comparison across Gender**

Questions	Male	Female	P-value
<b>Dentistry Level</b>			
Pre-clinical Intern	29	11	.206
Dental Intern	38	25	
Clinical Student	27	24	
<b>Is there someone you believe has a better smile than you?</b>			
Yes	71	39	
No	13	05	.029
May be	10	16	
<b>Are you self-confident about smiling?</b>			
Yes	61	32	
No	19	15	
May be	14	13	.341
<b>Do you look at magazines and wish you had a smile as pretty as the models?</b>			
Yes	40	40	
No	38	11	
May be	16	09	.007
<b>When you look at the smile in the mirror, do you see any defects in your teeth and gums?</b>			
Yes	53	32	
No	29	19	
May be	12	09	.903
<b>Do you wish your teeth were whiter?</b>			
Yes	51	47	
No	21	08	
May be	22	05	.008
<b>Are you satisfied with the way your gums look?</b>			
Yes	56	24	
No	19	22	
May be	19	14	.037
<b>Do you show too many or too few teeth when you smile?</b>			
Yes	52	34	
No	24	14	.953
May be	18	12	
<b>Are your teeth too wide or too narrow?</b>			
Yes	45	28	
No	33	18	
May be	16	14	.592
<b>Are your teeth too square or too round?</b>			
Yes	54	28	
No	25	17	

May be	15	15	.305
<b>Do you like the way your teeth are shaped?</b>			
Yes	56	23	
No	19	20	
May be	19	17	.304
<b>Do you show too much or too little gum when you smile?</b>			
Yes	38	29	
No	38	19	
May be	18	12	.522
<b>Are your teeth too long or too short?</b>			
Yes	52	28	
No	32	18	
May be	10	14	.105
<b>Do you ever put your hand over your mouth when you smile?</b>			
Yes	35	31	
No	48	17	.019
May be	11	12	
<b>Do you photograph better from one side of your face?</b>			
Yes	46	27	
No	31	18	
May be	17	15	.587

**Table 3. Comparison across dentistry level**

Questions	Pre-clinical Intern	Dental Intern	Clinical Student	P-value
<b>Gender</b>				
Male	29	38	27	.206
Female	11	25	24	
<b>Is there someone you believe has a better smile than you?</b>				
Yes	33	49	25	
No	03	04	20	
May be	04	10	06	.692
<b>Are you self-confident about smiling?</b>				
Yes	21	39	40	
No	10	15	06	
May be	09	09	05	.541
<b>Do you look at magazines and wish you had a smile as pretty as the models?</b>				
Yes	23	37	35	
No	10	16	10	
May be	07	10	06	.977
<b>When you look at the smile in the mirror, do you see any defects in your teeth and gums?</b>				
Yes	26	36	20	
No	09	18	15	.722
May be	05	09	16	
<b>Do you wish your teeth were whiter?</b>				
Yes	27	43	30	
No	06	08	15	.937
May be	07	12	06	
<b>Are you satisfied with the way your gums look?</b>				

Yes	21	37	35	.824
No	11	15	10	
May be	08	11	06	
<b>Do you show too many or too few teeth when you smile?</b>				
Yes	23	33	22	.441
No	11	14	21	
May be	06	16	08	
<b>Are your teeth too wide or too narrow?</b>				
Yes	21	30	20	.762
No	13	20	25	
May be	06	13	16	
<b>Are your teeth too square or too round?</b>				
Yes	28	34	30	.241
No	06	17	15	
May be	06	12	06	
<b>Do you like the way your teeth are shaped?</b>				
Yes	19	36	47	.397
No	13	13	03	
May be	08	14	01	
<b>Do you show too much or too little gum when you smile?</b>				
Yes	16	28	35	
No	12	25	10	.219
May be	12	10	06	
<b>Are your teeth too long or too short?</b>				
Yes	21	31	25	
No	12	24	25	.638
May be	07	08	01	
<b>Do you ever put your hand over your mouth when you smile?</b>				
Yes	20	22	40	
No	14	31	10	.286
May be	06	10	01	
<b>Do you photograph better from one side of your face?</b>				
Yes	22	26	20	
No	12	24	25	.393
May be	06	19	06	

#### 4. DISCUSSION

The present study was aimed to examine the perception of dental aesthetics among dental students. Data were analyzed through SPSS using chi-square as primary analysis along with frequency measure. The frequency measure analysis reported that 61% of the participants were male while 39% were female. Among them, 26% were pre-clinical interns, 41% were dental interns and 33% were clinical students. 60.4% of them were confident about smiling, 22.1% not confident and the remaining were not sure of either of the above two options. 51.9%

responded that they look at magazines and wish to smile like models, 31.8% said no while remaining were uncertain of both. 55.2% see defects in their gums, and 63.6% want their teeth to be whiter. 51.9% are satisfied with the appearance of their gums, and 55.8% show either too many or too few teeth while smiling. 47.4% believe their teeth are too wide or narrow, while 33.1% do not think about this. 53.2% think their teeth are too square or too round, 51.3% like the way their teeth are shaped. 43.5% show too little gum while smiling, and 51.9% think their teeth are too long or short. 42.9% put a hand over mouth while smiling, and 47.4% photograph

better from one side of their face. The results were in accordance with the study done by Aldhuwayhi S [12]. Literature also reports the findings similar to the above study as 92 per cent of the participants said they felt confident. Conversely, 90% feel someone else has a nicer smile, 44% have already concealed their smile with their hands, 52% desire to have a smile as beautiful as the models in magazines, 73% detect flaws in gums and teeth, 71% wish their teeth were whiter, and 42% dislike intensely the form of their teeth. The mean satisfaction indexes in the first and third semesters were 6.1 and 6.4, respectively, while the score in the tenth semester was 5. There were no statistically significant variations in aesthetic assessment across semesters of the course ( $p = 0.6$ ). On the other hand, substantial gender disparities were discovered, with women exposing themselves to be unhappy with their smiles than males. The desire for whiter teeth (question 8) was more popular in the first semesters and less so in the latter ones. When asked if they liked the way their teeth were shaped (question 15), 70% of the students said YES [11].

In subsequent analysis, gender differences were examined on study variables and revealed that more female and male students were dental interns. More male participants think that others may have a better smile than female participants. 61 males were confident about smile while 32 females are confident. An almost equal number of participants from both groups look at the magazine and think they might have a smile like models. 53 male while 32 female looks at the mirror and see defects in their gums. Asking upon having whiter teeth, both groups responded yes in higher proportion. More males were satisfied with the way their gums look as compared to female participants. A higher percentage of males showed either too many or too few teeth while smiling than females, same stats on both teeth too wide or too narrow and teeth too square or too round—both groups like the way their teeth are shaped while a significant number disagree also. Males does not put a hand over mouth while smiling while females do this. Both groups photographed better from one side of their face. Literature reports that almost a number of male students thought that others had a nicer smile, whereas females were more confident in their smiles ( $p=0.17$ ). A year of study enhanced the sensation of having a nicer grin ( $p=0.20$ ). There was no significant difference in self-confidence in smiling between gender or years of study. However, the majority (56.4 per

cent) of participants felt confident with their smiles. Smiling as attractive models were regarded positively by just 42.9 per cent of those polled, and there was no significant difference based on gender or year of research. The majority of students (59.3 per cent) desired their teeth to be brighter and were happy with the appearance of their gums (61.4 per cent). Although most students appreciated the form of their teeth, there were no significant variations in tooth size, shape, or length between grades of study or gender [12].

In the following analysis, differences across dentistry levels were explored. Findings reported that a higher number of dental interns consider that others have a better smile, followed by pre-clinical and clinical students. Clinical students were more confident about smiling dental interns and pre-clinical students. The majority of dentistry interns thought to smile like models while looking at models and seeing defects in gums when looking at the mirror compared to the other two groups. Dental interns wanted to have whiter teeth, followed by clinical students and pre-clinical students. Dental interns thought they showed too many teeth to few teeth while smiling, and also that their teeth were more comprehensive compared to the other two groups but were most satisfied with the appearance of their gums. The results of the present study was in accordance to El Mourad et al [13]. Higher dental interns think that their teeth are too square or too round while showing too much or too little gums when they smile, and they like the way their teeth are shaped; clinical students have a higher number. Dental interns thought their teeth as too long or too short and had a better photo from one side of the face while putting a hand over mouth while smiling; clinical students have a higher number. Literature also reports that half of the first and third semesters of female students thought their faces were unattractive, but the findings were more vital in the fifth-semester group. Almost all female students said that teeth were an essential aspect of facial beauty, and all respondents were satisfied with the look of their gums. Only third-semester students indicated that more than half of respondents were happy with their oral aesthetics. Moreover, half of first- and fifth-semester students said they liked the colour of their teeth.

In comparison, only one-third of third-semester students stated that they were satisfied. The majority of responders were also confident in



their grins and did not hide their teeth when smiling. Furthermore, the media and technology have a considerable influence on dental perception and aesthetics. More than half of female students anticipated to have excellent teeth like celebrities. More than a quarter of those questioned were pleased with the look of their teeth. In this study, the first semester had the fewest positive perceptions, with just 55.89 per cent satisfied with their oral aesthetics. Meanwhile, the third semester had the highest percentage of favourable responses, 73.5% [14].

## 5. CONCLUSION

To conclude the present study based on perception of dental aesthetics among dental students, when data analyzed through SPSS using chi-square test, male participants and clinical students were confident about their smile as compared to female while dental interns thought others have good smile. The study reported the significant gender differences on looking at magazines, having whiter teeth, they way gums look and putting hand over mouth while non-significant differences across dentistry level.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

Riyadh Elm University's ethical review board granted permission to conduct the study.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. ESJ Abu Alhaja, NO Al-Shamsi, S Al-Khateeb. Perceptions of Jordanian laypersons and dental professionals to altered smile aesthetics. *The European Journal of Orthodontics*. 2011;33(4):450–56.
2. Bellot-Arcís C, Montiel-Company J, Pinho T, Almerich-Silla J. Relationship between perception of malocclusion and the psychological impact of dental aesthetics in university students. *Journal of Clinical and Experimental Dentistry*, 2015;7:e18–e22.
3. Bilal R. Self-perception and satisfaction with dental esthetics in dental students of Qassim region of Saudi Arabia. *Pakistan Oral & Dental Journal*. 2016;36:399–03.
4. Manipal S, Adusumilli P, Ahmed A, Anand M C, Cholan P, Kumar D. The importance of dental aesthetics among dental students assessment of knowledge. *Journal of International Society of Preventive and Community Dentistry* 2014;4(1):48–51.
5. Afroz S, Rathi S, Rajput G, Rahman SA. Dental esthetics and its impact on psychosocial well-being and dental self-confidence: a campus based survey of North Indian University students. *The Journal of Indian Prosthodontic Society*. 2013;13(4) 455–60.
6. Abidia RF, Azam A, El-Hejazi AA, Al-Mugbel KK, Haider MS, Al-Owaid NM. Female dental student's perception of their dental aesthetics and desired dental treatment. *European Scientific Journal*. 2017;13:221–36.
7. Zawawi KH, Malki GA, Al-Zahrani MS, Alkhiary YM. Effect of lip position and gingival display on smile and esthetics as perceived by college students with different educational backgrounds—clinical, cosmetic and investigational dentistry. 2013;5:77.
8. Tin-Oo MM, Saddki N, Hassan N. Factors influencing patient satisfaction with dental appearance and treatments they desire to improve aesthetics. *BMC oral health*. 2011;11(1):1-8.
9. Cowpe J, Plasschaert A, Harzer W, Vinkka-Puhakka H, Walmsley AD. Profile and competencies for the graduating European dentist—update 2009. *European Journal of Dental Education*. 2010;14(4): 193-02.
10. Falkensammer F, Loesch A, Krall C, Weiland F, Freudenthaler J. The impact of education on the perception of facial profile aesthetics and treatment need. *Aesthetic Plast Surg*. 2014;38(4):620–631.
11. da Silva GDC, de Castilhos ED, Masotti AS, Rodrigues-Junior SA. Dental esthetic self-perception of Brazilian dental students. *RSBO Revista Sul-Brasileira de Odontologia*. 2012;9(4):375-81.
12. Aldhuwayhi S. Perceptions of dental aesthetics among future Arabian oral health care professions: A cross-sectional study. *International Journal of Early*

- Childhood Special Education (INT-JECSE). 2021;30(2): 948.
13. El Mourad AM, Al Shamrani A, Al Mohaimeed M, Al Sougi S, Al Ghanem S, Al Manie, W. Self-Perception of Dental Esthetics among Dental Students at King Saud University and Their Desired Treatment. International Journal of Dentistry. 2021;6671112.
14. Nathania RV, Fanny G, Luthfimaedah MS, Leksono PM, Brilyanti YT, Fardha DR, Dewi RS, Kusumo AD. Positive Perception of Dental Medicine Students on Dental Aesthetics Based on the Semester Being Pursued. Systematic Reviews in Pharmacy. 2020;11(3): 907-11.

---

© 2021 Alanazi et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<https://www.sdiarticle5.com/review-history/77348>