

RESEARCH ARTICLE

Patient Satisfaction with Dental Appearance and Treatment Desire to Improve Esthetics

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ABSTRACT

Background: Dental appearance has become the most critical element of the pleasant look of the face. Therefore, it is one of the important factors of an individual's interaction with the community.

Aim: To evaluate the patient's satisfaction with dental appearance, and treatment desires to improve their esthetics.

Materials and methods: This cross-sectional study utilized a structured, self-reported closed-ended questionnaire to collect information about dental esthetics among dental patients seeking treatment at university dental clinics. A convenient sampling technique was employed to select 1147 Saudi patients. A questionnaire was prepared in Google forms and administered through tablets to collect the data from study participants. Data were analyzed using Statistical Package for the Social Sciences (SPSS–version) 21. Descriptive statistics and Chi-square tests performed.

Results: Overall nearly (55.5%) of the patients were satisfied with their general appearance of teeth and (33.5%) were pleased with the color of their teeth. Very high percentage (79.5%) of patients desired to have teeth whitening treatment to improve esthetics. Younger (18 to 30 years) age group and females showed the significant desire for teeth whitening treatment compared to others. Protrusion of teeth, poorly aligned teeth, carious and discolored restorations, and fractured teeth all influence the dental appearance of the patients.

Conclusion: Majority of the patients were not satisfied with the general appearance and color of their teeth. Teeth whitening treatment was the most desired by the patients to improve their dental aesthetics.

Keywords: Esthetics, Dental appearance, Desire, Patient, satisfaction.

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INTRODUCTION

Dental appearance has become the most important element regarding the pleasant look of the face; therefore it is considered as the main character on the individual for community interaction. Multiple items affect the dental appearance that includes quality of restorations, tooth shape, position, and alignment. The color of teeth is a key element of dental aesthetics and self-confidence especially in the front teeth.¹ Moreover, an esthetically attractive smile comprises of tooth color, size, shape, and position, visibility of teeth, upper lip position and gingival display.^{2,3} Since most of the people like to have a pearly white smile; tooth color becomes one of the critical factors in determining satisfaction with dental appearance.⁴ As the discoloration of the teeth increases in severity, self-satisfaction decreases.⁵ On the contrary, individuals with whitish teeth have high social competence, intellectual capacity, psychological balance, and good social relationship.⁶

On the contrary, active carious lesions, discolored restorations and missing anterior teeth commonly bring dissatisfaction with dental appearance among the patients.^{7,8} Individuals having severe malocclusion were not only displeased but also, concerned with their dental appearance and more worried about smallest esthetic details of their teeth.⁹

Facial attraction and the smile strongly linked to each other. Social communication is a significant concern for the mouth and eyes of the speaker. The mouth is also the center of communication in the face, and the smile plays an essential role in the facial expression and appearance.² The impact of dental appearance goes beyond the beauty of the face to affect others viewpoints about the personality traits of the person.⁶ The esthetics is often the motivating factor for the patient to seek dental treatment.¹⁰

Currently, bleaching, direct or indirect facial veneers, anterior composite build-ups, and orthodontic treatment are mainly the common interest of patients who are willing to correct their smile. But patients still do not have a precise knowledge to choose the proper type of treatment.¹¹

Personal preferences and social factors play an important role while deciding the aesthetics of anterior teeth. Regrettably, in some conditions, dental cosmetic treatment provided by the dentist is far below the expectations of the patients that lead to dissatisfaction.¹²

Several studies have been conducted in Saudi Arabia to determine dental aesthetic concerns. Most of these studies focused on high school and university students. Study results showed solid knowledge and a low level of positive attitudes regarding dental aesthetics.¹³ However, currently, there is little information available on patient satisfaction with dental appearance and their treatment desire to improve aesthetics from Kingdom of Saudi Arabia. This study is an attempt to explore dental patient's perception of aesthetics and their attitude towards dental esthetics. Patient satisfaction and concerns for aesthetics will be helpful in proper treatment planning for the patients. Therefore, this study aimed to evaluate the patient's satisfaction with dental appearance, and treatment desires to improve their aesthetics.

MATERIALS AND METHODS

Ethical Approval

This study was approved by the research center of Riyadh Elm University (RC/IRB/2016/313). Purpose and nature of the study were explained, and informed consent to participate in the study was obtained from the patients.

Study Design

This cross-sectional study determined satisfaction with dental appearance and treatment desire to improve aesthetics among patients who attended the outpatient department of university dental clinics of Munasiya campus of Riyadh Elm University, Riyadh, Kingdom of Saudi Arabia. All the study participants were adults aged 18 years and above.

A structured, close-ended and self-administered Arabic version of the questionnaire was distributed to the patients for data collection. Initially, the English version of the survey was derived from the previously published articles on dental satisfaction^{3,14} (Table 1). Later on, the questionnaire was translated into native Arabic language by using forward and backward translation method by two Arabic-English bilingual experts. A pilot study conducted among ten patients showed the feasibility of the questionnaires to use among the patients.

Study Sample

The sample size calculation included estimating one proportion needed for 95% confidence. The prevalence of dissatisfaction with dental appearance was expected to be 50% based on the satisfaction with dental aesthetics among adult patients in Al-Baha, city Saudi Arabia.¹⁵ Considering the available resources, a sample size of 1067 was selected with a precision of 0.03 (3%). With accommodation of a non-response rate of 8.6%, a final sample of 1147 participants was invited to participate in this study.

A convenient sampling technique was used to select the study sample. All the patients who were attending the Munasiya clinics on normal working days were invited to take part in this study.

The questionnaire comprised of items on socio-demographics (age and gender), patient's satisfaction with general dental appearance. Patients were also further enquired about their satisfaction with tooth color, crowding, alignment and protrusion of teeth. Apart from this, carious anterior tooth, unpleasing anterior tooth color fillings and fractured teeth were noted. Also, patients were asked about the treatment they desire to improve aesthetics, such as a need for orthodontic treatment, teeth whitening, dental crowns, tooth color fillings, and removable dentures. All the questions had yes or no dichotomous responses.

Table 1: Questionnaire used in the study

		Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	
		Age: <input type="checkbox"/> (18–30), <input type="checkbox"/> (31–40), <input type="checkbox"/> (41–50) and <input type="checkbox"/> (50+) years	
1.	Satisfied with general appearance of your teeth?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2.	Satisfied with teeth color?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3.	Do you feel your teeth are crowded?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4.	Do you feel your teeth are poorly aligned?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5.	Do you feel your teeth are protruding?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
6.	Have you noticed caries in front teeth?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
7.	Do you have non-esthetic filling in front teeth?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8.	Any history of fractures in front teeth?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9.	Do you feel a need of orthodontic treatment?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
10.	Do you feel a need of teeth whitening?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
11.	Do you feel a need of dental crowns?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
12.	Do you require tooth color fillings?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
13.	Do you require removable dentures?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Administration of the Questionnaire

The questionnaire digitized by using Google forms and tablets were given to each eligible patient to answer the survey. All the data was collected electronically and saved to Google drive for statistical analysis. The study was carried out in different patient’s waiting area of the clinics.

Statistical Analysis

All the collected data were analyzed using SPSS version 21. Descriptive statistics of percentages expressed and Chi-square test was applied to evaluate statistical significance between different categorical variables. For all statistical purposes, a p-value ≤ 0.05 was considered significant.

RESULTS

This study was conducted to assess the level of satisfaction and perceived a desire for improving dental appearance among Saudi patients attending dental clinics of university dental school. It can be noted that a large number of females (53%) and subjects aged between 18 and 30 years (55%) participated in the study shown in Graph 1.

Overall nearly 55.5% of the patients pleased with their general appearance of teeth, and (33.5%) were satisfied with the color of their teeth. Very high percentage (79.5%) of patients desired to have teeth whitening treatment to improve esthetics. All other concerns related to the esthetics presented in Graph 2.

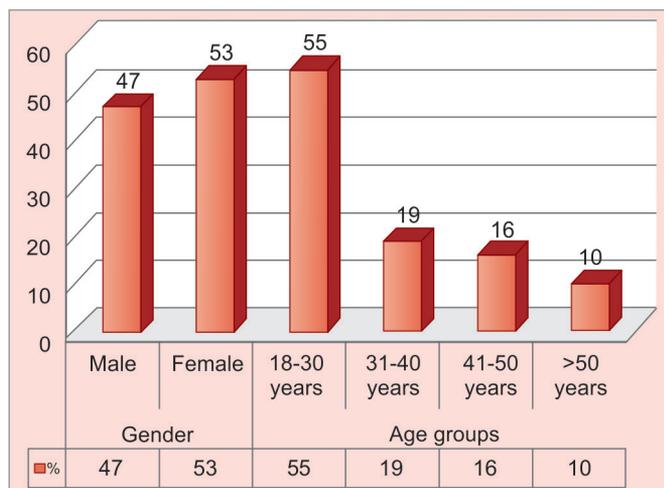
Present study revealed that comparison of male versus female regarding satisfaction with dental appearance, a high percentage of females satisfied with general appearance (55% vs. 56%, $p = 0.484$), feel your teeth are protruding (18% vs. 24, $p = 0.013$), feel a need for teeth whitening treatment (77% vs. 82%, $p = 0.012$) and require tooth color filling (45% vs. 50%). On the contrary, high percentage of males satisfied with teeth color (35% vs. 32%, $p = 0.179$), feel teeth are crowded (20% vs. 13%, $p = 0.001$),

feel teeth are poorly aligned (37% vs. 31%, $p = 0.012$), noticed caries in front teeth (19% vs.17%, $p = 0.19$), non-esthetic filling in front teeth (20% vs. 16%, $p = 0.049$), history of fractures in front teeth (26% vs.19%, $p = 0.005$), feel a need of orthodontic treatment (38% vs. 37%, $p = 0.378$) and feel need for dental crowns (45% vs. 43%, $p = 0.234$), as shown in Table 2.

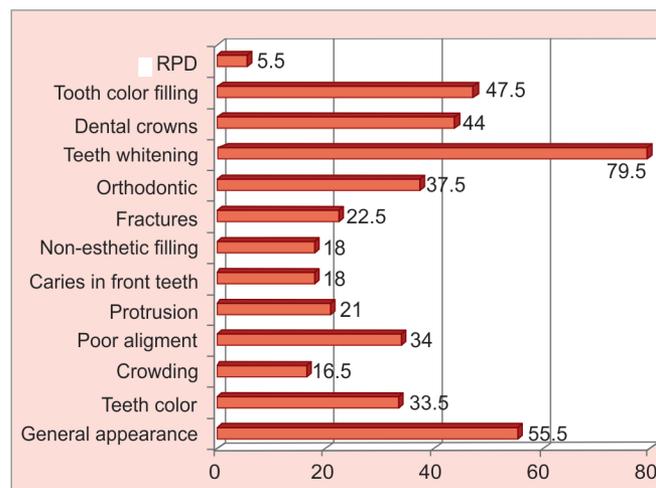
Significantly high percentage of younger age group (18 to 30 years) patients were satisfied with the general appearance and desired to have orthodontic and teeth whitening treatment to improve aesthetics ($p \leq 0.05$). Whereas, a significantly high percentage of patients aged 31 to 40 years felt their teeth are protruded, and desired to have tooth color fillings to improve aesthetics ($p \leq 0.05$). A high percentage of patients aged 41 to 50 years significantly wished to have dental crowns to enhance their aesthetics. Patients aged 50 years and above were dissatisfied with non-esthetic filling and fracture of front teeth, as shown in Table 3 ($p \leq 0.05$).

DISCUSSION

People and individuals differ in their perceptions and views towards dental appearance.¹⁶ The present study showed that (55.5%) of adults attending RCSDP dental clinics were satisfied with the general appearance of their teeth. This finding is lower than the reported studies from dental school in Turkey (57.3%),¹² and (76%)¹⁷ of the sample of adults in the United Kingdom and (69.3%)³ patients attending dental school in Jordan were satisfied with their dental appearance. However, this result is higher than the previously reported study Tin-Oo et al., in which (48.2%)¹⁴ of the patients were found to be satisfied with their dental appearance. Such finding in the study explained on the basis that cultural factors play an important role in an individual’s preferences towards dental appearance. Moreover, dental appearance itself varies among different individuals and cultures.¹



Graph 1: Age and gender distribution of study subjects



Graph 2: Overall “yes” (%) responses to the questionnaire items

It is reported that female more particular and concerned with general and dental appearance than male.¹⁶ When general dental appearance compared between male and females, there was no significant difference observed. This finding is in line with the previous studies.^{5,12}

In this study significantly high percentage of patients aged 18 to 30 years were satisfied with the general appearance of their teeth suggesting that the appearance

of the teeth is important to younger individuals than older age groups. This finding is contrary to the other reported studies in which older age groups more likely than younger age groups to be satisfied with the appearance of their teeth.^{12,17} Thus one can interpret that age was associated with satisfaction with dental appearance among younger adults suggesting that dental appearance is becoming more important in younger age groups than

Table 2: Comparison of esthetic satisfaction between male and female genders

Questionnaire Items	Males		Females		p-value
	Yes (%)	No (%)	Yes (%)	No (%)	
Satisfied with general appearance of teeth?	55	45	56	44	0.484
Satisfied with teeth color?	35	65	32	68	0.179
Do you feel your teeth are crowded?	20	80	13	87	0.001
Do you feel your teeth are poorly aligned?	37	63	31	69	0.012
Do you feel your teeth are protruding?	18	82	24	76	0.013
Have you noticed caries in front teeth?	19	81	17	83	0.19
Do you have non-esthetic filling in front teeth?	20	80	16	84	0.049
Any history of fractures in front teeth?	26	74	19	81	0.005
Do you feel a need of orthodontic treatment?	38	62	37	63	0.378
Do you feel a need of teeth whitening treatment?	77	23	82	18	0.012
Do you feel a need of dental crowns?	45	55	43	57	0.234
Do you require tooth color fillings?	45	55	50	50	0.034
Do you require removable dentures?	7	93	4	96	0.012

Table 3: Comparison of esthetic satisfaction among different age groups

Questionnaire items		Age (years)				p-value
		18-30	31-40	41-50	50+	
Satisfied with general appearance of teeth?	Yes	59	45	55	56	0.009
	No	41	55	45	54	
Satisfied with teeth color?	Yes	34	29	36	36	0.465
	No	66	71	64	64	
Do you feel your teeth are crowded?	Yes	15	20	12	15	0.16
	No	85	80	88	85	
Do you feel your teeth are poorly aligned?	Yes	33	38	31	36	0.514
	No	67	62	69	64	
Do you feel your teeth are protruding?	Yes	22	25	19	9	0.006
	No	78	75	81	91	
Have you noticed caries in front teeth?	Yes	15	19	22	19	0.057
	No	85	81	78	81	
Do you have non-esthetic filling in front teeth?	Yes	14	25	21	27	0.009
	No	86	75	79	73	
Any history of fractures in front teeth?	Yes	20	26	19	31	0.031
	No	80	74	81	69	
Do you feel a need of orthodontic treatment?	Yes	43	36	28	18	0.004
	No	57	64	72	82	
Do you feel a need of teeth whitening?	Yes	83	82	71	69	0.000
	No	17	18	29	31	
Do you feel a need of dental crowns?	Yes	37	54	56	47	0.000
	No	63	46	44	53	
Do you require tooth color fillings?	Yes	42	59	55	48	0.003
	No	58	41	45	52	
Do you require removable dentures?	Yes	5	5	6	4	0.662
	No	95	5	94	96	

older age groups. It is likely due to the strong influence of the mass media on creating aesthetic awareness in younger age group.

Previous studies have pointed out that satisfaction with tooth color was not related to the age of the individuals.¹⁸ However, studies of elderly age groups from Sweden and Germany have indicated that beautiful and perfect teeth are essential for dental and overall appearance.^{19,20} In this study, only 33.5% of the patients satisfied with their color of teeth. This finding is lower than reported by Maghaireh et al., and Tin-Oo et al., in which (58%)³ in which (48.2%)¹⁴ of the patients were satisfied with the color of their teeth. One probable reason could be that individuals like white and shiny dentition rather than natural appearance.⁴ Moreover, the perception of the color of a tooth is not easy, and it is affected by many factors like transparency, opacity, scattering, the glossiness of the surface and the viewer's visual experience.²¹ One could see that dissatisfaction with tooth color could be the main reason for dissatisfaction with dental appearance.⁴

Most desired treatment expressed by the patients was tooth whitening esthetic treatment, which is similar to other reported studies.⁴ This whitening therapy, females and young age group patients were more significantly desired compared to their counterparts.

In this study, many patients mentioned that they are having dental caries, anterior non-aesthetic fillings, and a fractured tooth. All of these circumstances affected the appearance of teeth significantly, possibly causing patient dissatisfaction with dental appearance. This finding is similar to the previous study,⁴ and contrary to the study reported by Tin-Oo et al. among patients in Malaysia.¹⁴

Unlike other studies, this study also has some limitations. First of all, this study presented self-reports of the patients based on a structured and close-ended questionnaire. In this study, no efforts have been made to correlate the patient's self-reported information with their clinical or professional assessment. Additionally, study subjects were dental patients attending private dental school clinics for their treatment. Hence one should be cautious before generalizing the results.

Further, broader population-based studies with clinical and professional assessment are needed to generalize the findings.

CONCLUSION

Majority of the patients were not satisfied with the general appearance of their teeth. Females and young age group patients showed relatively higher satisfaction with general dental appearance. Moreover, most of the patients were dissatisfied with the color of their teeth. Protruded,

poorly aligned, carious teeth, discolored anterior teeth, and fractured teeth influence patient satisfaction with their general dental appearance. Most of the patients desired to have tooth whitening treatment to improve their aesthetic

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