

Factors Influencing Psychosocial Impact of Cosmetic Dental Treatments

Abdulrahman J. Alhaddad¹, Wjood A. Sharkar², Reema M. Alhamed³,
Saud F. Alshahrani³, Maram M. Alkhodair⁴, Noura A. Alireza⁵, Sondos H. Malakah⁵,
Asiyah Ali Alshehri³, Ali J. Asiri³, Khames T. Alzahrani⁶

¹Department of Oral and Maxillofacial Prosthodontics, Faculty of Dentistry, King Abdulaziz University, Jeddah, Saudi Arabia, ²Department of Oral and Maxillofacial Prosthodontics, College of Dental Medicine, Umm Al-Qura University, Makkah, Saudi Arabia, ³Department of Oral and Maxillofacial Prosthodontics, College of Dentistry, King Khalid University, Abha, Saudi Arabia, ⁴Department of Oral and Maxillofacial Prosthodontics, King Khalid University, Abha, Saudi Arabia, ⁵Department of Oral and Maxillofacial Prosthodontics, Ibn Sina National College, Jeddah, Saudi Arabia, ⁶Department of Endodontics, Saudi Board of Endodontics, King Faisal Specialist Hospital and Research Centre, Riyadh, Ministry of Health Saudi Arabia

Abstract

Introduction: Cosmetic dentistry, including veneers, composite build-ups, and bleaching, aims to enhance dental esthetics and boost self-confidence. While these treatments are increasingly popular, research in Saudi Arabia has primarily focused on prevalence and treatment patterns, overlooking their psychosocial effects. Dental appearance significantly influences facial satisfaction, yet factors affecting self-confidence and smile satisfaction after cosmetic procedures remain underexplored. **Objectives:** This study aimed to assess how different cosmetic dental treatments influence dental self-confidence and smile satisfaction among Saudi adults, while also identifying potential factors such as age, gender, and type of treatment that may affect these psychosocial outcomes in Saudi Arabia. **Materials and Methods:** An analytical cross-sectional, questionnaire-based study was conducted between July and December 2025 across major cities in Saudi Arabia, using both online platforms and selected dental clinics. The study population consisted of Saudi adults aged 18 years or older who had undergone at least one cosmetic dental procedure. Data were entered into Microsoft Excel and analyzed using the Statistical Package for the Social Sciences version 20, employing both descriptive and inferential statistics to examine associations between participant characteristics and psychosocial outcomes. **Results:** Of 540 complete responses, 290 participants met eligibility criteria (Saudi adults ≥ 18 years who had undergone at least one cosmetic dental procedure) and were included in the final analysis. Participants' mean age was 35.6 ± 13.7 years, and 69.3% were female. Overall smile satisfaction was favorable, with 69.3% reporting they were satisfied with their smile; nevertheless, 84.8% wished their teeth were whiter, and tooth staining was the most frequently reported specific concern (18.3%). Composite build-ups were the most common procedure (55.5%), followed by bleaching (31.0%), veneers (9.7%), and lumineers (3.8%); most participants preferred permanent treatments (85.5%). Post-treatment outcomes were largely positive: 78.3% reported that results met expectations, 85.5% would recommend the treatment, and 85.9% felt more confident after treatment. Participants also reported improved social and emotional domains, including reduced anxiety about their smile (81.7%), increased social interactions (68.3%), and greater comfort in social situations (86.6%). Complications were reported by 36.9%, most commonly sensitivity (14.8%) and restoration fracture/debonding (9.0%). Inferential testing found no significant associations between future intention for further treatment and sociodemographic factors, and no significant association between treatment type and self-confidence improvement.

Conclusion: In this study, cosmetic dental treatments were associated with high patient-reported satisfaction and substantial perceived psychosocial benefit, particularly improved self-confidence, reduced smile-related anxiety, and greater comfort in social settings.

Key words: Cosmetic dentistry, dental self-confidence, psychosocial impact, Saudi adults, smile satisfaction

Address for correspondence:

Wjood A. Sharkar, Department of Oral and Maxillofacial Prosthodontics, College of Dental Medicine, Umm Al-Qura University, Makkah, Saudi Arabia.
E-mail: s442009768@uqu.edu.sa

Received: 20-05-2026

Revised: 22-06-2026

Accepted: 30-06-2026

INTRODUCTION

Esthetic dentistry, often called cosmetic dentistry, embraces treatments designed to refine the smile and uplift self-confidence.^[1] It comprises veneers, composite build-ups, and bleaching: Veneers are ultra-thin porcelain shells that transform a tooth's shape, color, or size; composite build-ups use tooth-colored resin to sculpt or restore structure with precision; and bleaching relies on peroxide systems, whether in-office or at home, to brighten shades safely and predictably.^[2-4]

Porcelain laminate veneers rose to prominence in the late 20th century, offering a conservative and esthetic alternative to full-coverage crowns.^[5] Composite build-ups took shape in the 1990s with predictable protocols for anterior resin restorations, celebrated for their speed, low cost, and tooth-conserving nature despite higher maintenance needs.^[6] Tooth bleaching was revolutionized in the late 1980s–early 1990s with tray and in-office peroxide systems, establishing it as the most conservative first-line approach for color improvement.^[7]

In 2020, research was conducted on 434 individuals (140 men and 294 women) that showed 230 had received esthetic treatments, mainly composite build-ups ($n = 132$). Most respondents ($n = 304$) preferred long-term treatments over short-term ones ($n = 33$).^[8] A study by Tin-Oo showed 230 of 434 respondents had esthetic treatments. Among 235 patients, 52.8% were dissatisfied with their appearance, especially tooth color. Whitening was most common. Dissatisfaction was higher in females.^[9] Al-Ahmari found 76% wanted teeth whitening, 70% preferred composites, and 40% wanted orthodontics. Facial appearance satisfaction was strongly linked to dental appearance, smile, tooth color, and gingival esthetics.^[10]

Research on cosmetic dental treatments in Saudi Arabia overlooks psychosocial effects such as self-esteem and social confidence. This study addresses that gap by exploring these impacts and their influencing factors to improve patient-centered care.

Objectives

This study aimed to evaluate the impact of different cosmetic dental treatments, such as veneers, composite build-ups, or bleaching, on dental self-confidence and smile satisfaction among Saudi adults, while also identifying potential factors, including age, gender, and type of treatment, that may influence these psychosocial outcomes.

MATERIALS AND METHODS

Study design, setting, and participants

This was a cross-sectional questionnaire-based study conducted between July 2025 and December 2025 in Saudi

Arabia. The study was carried out both online and in selected dental clinics across major cities to ensure wide coverage of the target population.

The study population consisted of Saudi adults aged 18 years and above who had undergone at least one cosmetic dental procedure, such as veneers, bleaching, or composite build-ups. Participants were recruited through convenience sampling by distributing the questionnaire online (via social media platforms and university mailing lists) and in person at dental centers. Both male and female participants were eligible. Individuals under 18 years of age, non-Saudi residents, and those who had never received cosmetic dental treatment were excluded.

Sample size calculation

Using the Qualtrics calculator and a 95% confidence level, the sample size was estimated, resulting in a minimum requirement of 384 participants.

The sample size was calculated using the formula:

$$n = \frac{P(1-P) \cdot Z^2}{d^2}$$

Where:

- n = calculated sample size
- Z = z-value for 95% confidence = 1.96
- P = estimated proportion = 0.50
- $Q = 1-P = 0.50$
- d = maximum acceptable error = 0.05

Thus, the calculated minimum sample size was:

$$n = \frac{(1.96)^2 \cdot 0.50 \cdot 0.50}{(0.05)^2} = 384$$

Inclusion and exclusion criteria

The study included Saudi men and women aged 18 years or older who resided in Saudi Arabia and had undergone at least one cosmetic dental treatment. Participants were excluded if they were under 18 years of age, lived outside Saudi Arabia, or had not received any form of cosmetic dental treatment.

Method for data collection, instrument, and permissions

Data were collected using a structured, self-administered questionnaire designed to assess the psychosocial impact of cosmetic dental treatments among adults in Saudi Arabia. To ensure accessibility, the questionnaire was available in both Arabic and English. It consisted of three sections:

- The first section presented informed consent on the initial page, outlining the study's purpose, voluntary

participation, confidentiality, and an estimated completion time of 5–10 min. Participants were required to indicate their consent before proceeding

- The second section gathered sociodemographic information, including age group, sex, and nationality, to allow analysis of associations between participant characteristics and their perceptions or experiences
- The third section focused on participants' cosmetic dental experiences and perceptions, covering satisfaction with their smile, types of prior cosmetic treatments received, reasons for any dissatisfaction, preferences regarding treatment longevity (permanent versus temporary), knowledge and opinions about veneers and lumineers, any post-treatment complications, and willingness to recommend these treatments to others.

Pilot test

A pilot test was conducted on a small sample of approximately 20 participants to assess the clarity, simplicity, and feasibility of the questionnaire. Feedback from the pilot test was used to make necessary adjustments before distributing the final version. Data collected from the pilot test were not included in the main study analysis.

Analyses and data entry method

The collected data were initially entered using Microsoft Excel software (version 2016 for Windows). After verifying accuracy, the data were transferred to the Statistical Package for the Social Sciences, version 20 (IBM Corp., Armonk, NY, USA) for statistical analysis. Descriptive statistics were used to summarize numerical variables for baseline characteristics. For categorical variables, frequencies and percentages were calculated. The Chi-square test was used to identify associations between categorical variables.

RESULTS

Data preparation and sample

The dataset contained 540 complete records with no missing responses; therefore, no mode-based imputation was required. Among these 540 participants, only 290 participants met all of the study's eligibility criteria (Saudi adults aged ≥ 18 years who had undergone at least one cosmetic dental procedure) and underwent final data analysis.

Table 1 describes the sociodemographic profile. Participants were 18–69 years old (mean $\pm$ standard deviation: 35.6 ± 13.7). Approximately half were aged 18–30 years (51.4%), 20.3% were 31–45 years, and 28.3% were ≥ 46 years. Females represented 69.3% of the sample, and all respondents were Saudi nationals. Educational attainment was predominantly

Table 1: Sociodemographic characteristics of participants ($n=290$)

Parameter	No.	Percentage
Did you undergo at least one cosmetic dental treatment?		
Yes	290	100.0
Age group		
18–30 years	149	51.4
31–45 years	59	20.3
46+ years	82	28.3
Gender		
Female	201	69.3
Male	89	30.7
Nationality		
Saudi	290	100.0
Educational level		
Primary school	1	0.3
Intermediate/Middle school	4	1.4
Secondary/High school	32	11.0
Diploma	28	9.7
Bachelor's degree	197	67.9
Postgraduate studies	28	9.7
Marital status		
Single	128	44.1
Married	142	49.0
Divorced	10	3.4
Widowed	10	3.4

university-level: 67.9% held a bachelor's degree, and 9.7% had postgraduate studies. Additional participants reported a diploma (9.7%) or secondary/high school education (11.0%). Only 1.4% reported intermediate/middle school education and 0.3% reported primary school education. In terms of marital status, 49.0% were married, 44.1% were single, and 3.4% were divorced or widowed.

Table 2 summarizes the seven general smile-satisfaction items. Overall, current smile satisfaction was favorable: 69.3% agreed or strongly agreed that they were satisfied with their smile, whereas 17.2% were neutral and 13.4% disagreed or strongly disagreed. When asked what they disliked about their smile, 56.2% selected "I am satisfied with my smile," which aligns with the satisfaction item. Among specific concerns, tooth staining was most common (18.3%), followed by malposition (12.4%), diastema (5.9%), fractured tooth (4.5%), and missing tooth (2.8%). Beyond subjective satisfaction, most participants felt their teeth influenced facial attractiveness (80.3%) and their social life (64.8%). One-quarter reported covering their mouth when smiling (25.5%). Most participants were satisfied with the gingival display (80.7%), yet a large majority still wished their teeth were whiter (84.8%).

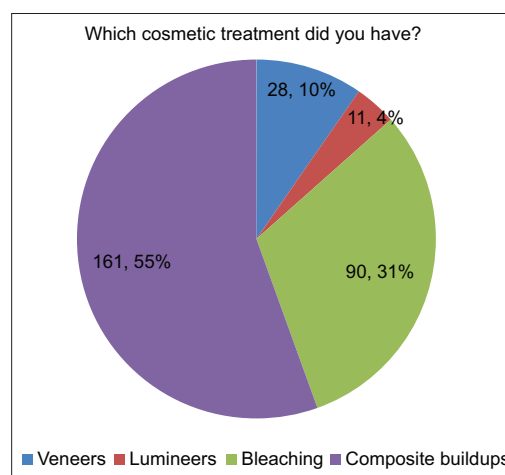
Table 2: Frequency distribution of general questions on smile satisfaction (*n*=290)

Parameter	No.	Percentage
Are you satisfied with your smile?		
Strongly agree	87	30.0
Agree	114	39.3
Neutral	50	17.2
Disagree	35	12.1
Strongly disagree	4	1.4
What don't you like about your smile?		
I am satisfied with my smile	163	56.2
Stain	53	18.3
Fractured tooth	13	4.5
Diastema	17	5.9
Malposition	36	12.4
Missing tooth	8	2.8
Do you feel your teeth affect facial attractiveness?		
Yes	233	80.3
No	57	19.7
Do you think your smile affects your social life?		
Yes	188	64.8
No	102	35.2
Do you ever put your hand over your mouth when you smile?		
Yes	74	25.5
No	216	74.5
Are you satisfied with the amount of gingiva shown when smiling?		
Yes	234	80.7
No	56	19.3
Do you wish your teeth were whiter?		
Yes	246	84.8
No	44	15.2

Table 3 presents treatment experience. Composite build-ups were the most frequently reported cosmetic procedure (55.5%), followed by bleaching (31.0%), veneers (9.7%), and lumineers (3.8%). Most participants preferred permanent rather than temporary treatment (85.5%). Treatment duration was commonly short: 62.8% completed treatment in <1 month, 16.9% in 1–3 months, and 20.3% required more than 3 months. Most respondents were offered multiple treatment options (65.9%) and reported that the procedure required follow-up visits (66.2%). Treatment selection was largely dentist-led: 71.0% chose the type of treatment based on dentist recommendation, whereas 13.1% relied on friends or family, 8.6% prioritized price, and 7.2% used the internet/research. Although 64.1% reported the treatment was painless, 35.9% reported some pain.

Table 3: Frequency distribution of treatment experience (*n*=290)

Parameter	No.	Percentage
Which cosmetic treatment did you have?		
Veneers	28	9.7
Lumineers	11	3.8
Bleaching	90	31.0
Composite build-ups	161	55.5
Did you prefer permanent or temporary treatment?		
Permanent treatment	248	85.5
Temporary treatment	42	14.5
How long did the treatment take?		
<1 month	182	62.8
1–3 months	49	16.9
More than 3 months	59	20.3
Were you given multiple treatment options?		
Yes	191	65.9
No	99	34.1
Did the treatment require follow-up visits?		
Yes	192	66.2
No	98	33.8
How did you choose the type of treatment?		
Dentist's recommendation	206	71.0
Price	25	8.6
Friend's or family's advice	38	13.1
Internet/Research	21	7.2
Was the treatment painless?		
Yes	186	64.1
No	104	35.9


Figure 1: Distribution of cosmetic treatment types (*n*=290)

As shown in Figure 1, composite build-ups were the most frequently reported cosmetic procedure (55.5%), followed by bleaching (31.0%), whereas veneers (9.7%) and lumineers

(3.8%) were less common, indicating a greater reliance on conservative or minimally invasive esthetic options in this cohort.

Table 4 details post-treatment outcomes. Complications were reported by 36.9% of participants, whereas 63.3% reported none. When complication types were recorded, sensitivity was most frequent (14.8%), followed by broken or fallen restorations (9.0%), swelling (4.5%), bleeding (4.1%), bad odor (3.1%), and difficulty opening the mouth (1.4%). Despite these events, perceived outcomes were strongly positive: 78.3% stated that

Table 4: Frequency distribution of post-treatment experience (n=290)

Parameter	No.	Percentage
Did you experience any complications after treatment?		
Yes	107	36.9
No	183	63.1
If yes, what complications did you face?		
Sensitivity	43	14.8
Bleeding	12	4.1
Bad odour	9	3.1
Swelling	13	4.5
Broken or fallen	26	9.0
Difficulty opening mouth	4	1.4
No complications	183	63.1
Did the treatment meet your expectations?		
Yes	227	78.3
No	63	21.7
Would you recommend this treatment to others?		
Yes	248	85.5
No	42	14.5
How confident are you in your new smile?		
Very confident	122	42.1
Somewhat confident	112	38.6
Neutral	45	15.5
Not confident	11	3.8
How comfortable are you smiling in front of others now?		
Very comfortable	141	48.6
Somewhat comfortable	113	39.0
Neutral	27	9.3
Uncomfortable	9	3.1
Has the treatment improved your overall appearance?		
Yes	252	86.9
No	38	13.1
Do you feel more confident now compared to before the treatment?		
Yes	249	85.9
No	41	14.1

results met expectations, and 85.5% would recommend the treatment. Confidence in the new smile was high (42.1% very confident and 38.6% somewhat confident), and comfort smiling in front of others was similarly high (48.6% very comfortable and 39.0% somewhat comfortable). Most participants believed the treatment improved their overall appearance (86.9%) and felt more confident than before treatment (85.9%).

Table 5 focuses on psychological and social impact. Before treatment, 51.7% were satisfied or very satisfied with their smile, 25.9% were neutral, and 22.4% were dissatisfied or very dissatisfied, indicating a sizeable pre-treatment concern group. After treatment, 84.8% reported improved self-confidence and 81.7% reported reduced anxiety about their smile. Social functioning also improved for many respondents: 68.3% reported increased social interactions, and 86.6% felt more comfortable in social situations. A large majority felt better about their appearance in photographs (85.9%). The effect on career prospects was more mixed, with 47.6% reporting improvement.

Table 5: Frequency distribution of psychological and social impact (n=290)

Parameter	No.	Percentage
Before the treatment, how would you describe your smile satisfaction?		
Very satisfied	56	19.3
Satisfied	94	32.4
Neutral	75	25.9
Dissatisfied	57	19.7
Very dissatisfied	8	2.8
Did you notice an improvement in your self-confidence after treatment?		
Yes	246	84.8
No	44	15.2
Did the treatment increase your social interactions?		
Yes	198	68.3
No	92	31.7
Do you feel more comfortable in social situations now?		
Yes	251	86.6
No	39	13.4
Has the treatment made you feel better about your appearance in photographs?		
Yes	249	85.9
No	41	14.1
Has the treatment improved your career prospects?		
Yes	138	47.6
No	152	52.4
Has the treatment reduced your anxiety about your smile?		
Yes	237	81.7
No	53	18.3

Table 6 presents future intentions and feedback. Nearly two-thirds (63.8%) would consider further cosmetic dental treatments, 22.4% were unsure, and 13.8% would not. Interest in exploring other cosmetic options was high (83.1%), and 80.0% felt the treatment was worth the cost. The most cited benefit was esthetic improvement (57.2%), followed by confidence boost (30.0%), other benefits (9.3%), and social benefits (3.4%). Regarding the illustrative images, Picture 2 was preferred by 54.8% of participants.

Inferential analysis [Table 7]. Chi-square tests examined associations between future intention to undergo further cosmetic dental treatment (Yes/No/Unsure) and key demographics. No statistically significant associations were detected for sex ($P = 0.169$), age group ($P = 0.199$), education group ($P = 0.542$), or marital status ($P = 0.360$). Nationality and the inclusion item showed no variation and, therefore, were not testable. As additional objective-aligned checks, cosmetic treatment type was not significantly associated with self-confidence improvement after treatment ($P = 0.635$) nor with current smile satisfaction categories ($P = 0.217$). Overall, the descriptive findings indicate high levels of post-treatment satisfaction and psychosocial benefit, with limited evidence that these outcomes differ by basic sociodemographic characteristics.

Table 6: Frequency distribution of future intentions and feedback ($n=290$)

Parameter	No.	Percentage
Would you consider further cosmetic dental treatments in the future?		
Yes	185	63.8
No	40	13.8
Unsure	65	22.4
Would you be interested in other types of cosmetic dental treatments?		
Yes	241	83.1
No	49	16.9
Do you feel the treatment was worth the cost?		
Yes	232	80.0
No	58	20.0
What was the most beneficial part of the treatment for you?		
Esthetic improvement	166	57.2
Confidence boost	87	30.0
Social benefits	10	3.4
Other	27	9.3
Which picture do you like the most?		
Picture 1	54	18.6
Picture 2	159	54.8
Picture 3	7	2.4
Picture 4	70	24.1

As shown in Figure 2, among participants who reported complications ($n = 107$), sensitivity was the most common adverse outcome, followed by restoration-related issues (broken or fallen restorations), whereas soft-tissue complaints (swelling/bleeding), bad odor, and difficulty opening the mouth were comparatively infrequent; overall, most participants reported no complications.

DISCUSSION

Cosmetic dental procedures are increasingly sought for more than simply modification of tooth form and color, but are now being pursued to also have an effect on how individuals feel about their ability to smile, participate socially, and present themselves. The aim of the present study was to assess, in a sample of Saudi adults, patients' reported perceptions following cosmetic dental treatment (composite build-ups, bleaching, veneers or lumineers) in terms of current smile satisfaction and psychosocial results and also to study the possibility of a difference in perceived benefit according to the type of treatment or characteristics of the study population.

In the present sample ($n = 290$; mean age 35.6 years; 69.0% female), post-cosmetic treatment appraisal was positive: 69.3% were currently satisfied with their smile, 78.3% reported that results achieved expectations, and 85.5% would recommend cosmetic dental treatment. These proportions are compatible with research on Saudi preferences that finds widespread use of esthetic procedures and a strong preference for permanent modalities.^[8] In our cohort, treatment choice was mostly made by the dentist (71.0%), indicating the importance of communication and expectation setting in esthetic care.

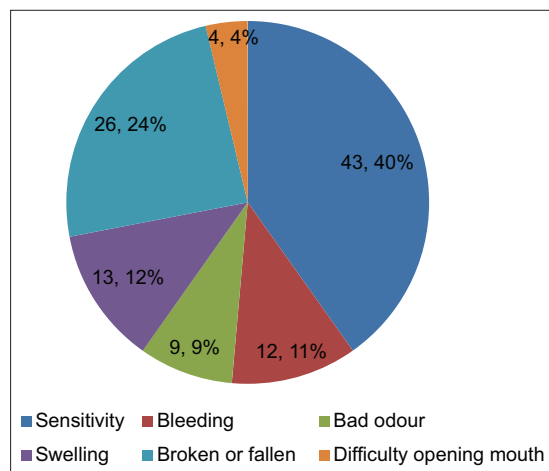
Tooth color became the major esthetic requirement. Most of the participants wanted whiter teeth (84.8%), and the most common specific problem reported was tooth staining. A Saudi survey also showed high demand for bleaching to achieve whitening, with 76% of the respondents desiring bleaching treatment.^[11] This is consistent with evidence that patients are often dissatisfied with tooth color and that this can have a powerful influence on overall satisfaction with dental appearance. In the clinic-based study involving Tin-Oo *et al.* ($n = 235$), dissatisfaction with tooth color was the most frequent complaint (56.2%), with "unhappiness with tooth color" being an independent determinant of dissatisfaction with the overall dental appearance in the multivariable analysis.^[9] Similarly, a survey of a subpopulation in Saudi Arabia showed that 76% of respondents wanted to have their teeth bleached to whiten them^[11] suggesting that color-related issues are and remain a consistent stimulus for esthetic need across settings.

The distribution of procedures in the present study, composite build-ups (55.5%) followed by bleaching (31.0%), veneers

Table 7: Relationship between participants' future intention for cosmetic dental treatment and sociodemographic characteristics ($n=290$)

Parameters	Would you consider further cosmetic dental treatments in the future?			Total ($n=290$)	P-value*
	Yes n (%)	No n (%)	Unsure n (%)		
Gender					
Female	134 (72.4)	23 (57.5)	44 (67.7)	201 (69.3)	0.169
Male	51 (27.6)	17 (42.5)	21 (32.3)	89 (30.7)	
Age group					
18–30 years	93 (50.3)	27 (67.5)	29 (44.6)	149 (51.4)	0.199
31–45 years	39 (21.1)	4 (10.0)	16 (24.6)	59 (20.3)	
46+years	53 (28.6)	9 (22.5)	20 (30.8)	82 (28.3)	
Education group					
High school or less	21 (11.4)	6 (15.0)	10 (15.4)	37 (12.8)	0.542
Diploma	17 (9.2)	5 (12.5)	6 (9.2)	28 (9.7)	
Bachelor's degree	132 (71.4)	26 (65.0)	39 (60.0)	197 (67.9)	
Postgraduate studies	15 (8.1)	3 (7.5)	10 (15.4)	28 (9.7)	
Marital status					
Single	82 (44.3)	22 (55.0)	24 (36.9)	128 (44.1)	0.360
Married	90 (48.6)	18 (45.0)	34 (52.3)	142 (49.0)	
Divorced	7 (3.8)	0 (0.0)	3 (4.6)	10 (3.4)	
Widowed	6 (3.2)	0 (0.0)	4 (6.2)	10 (3.4)	

*P-value was considered significant if ≤ 0.05

**Figure 2:** Distribution of cosmetic treatment complications ($n=107$)

(9.7%), and lumineers (3.8%), was close to the Saudi preference data of Al Otaibi *et al.*, in which composite build-ups were also the most prevalent esthetic procedure, followed by bleaching, veneers, and prepress veneers.^[8] This convergence implies that direct resin approaches are still a pragmatic first-line esthetic option in this population. Evidence from a systematic review has shown that direct anterior composite restorations may have an acceptable clinical performance, but the results have varied depending on

the setting and operator factors.^[12] The clinical performance of anterior composite restorations seems acceptable overall, although varied across studies, and dependent on the treatment environment and operator factors, with a focus on the importance of technique and follow-up in maintaining esthetic results over time.^[12]

Complications were reported by 36.9% of the participants, and the most frequent complaint was sensitivity (14.8%). The predominance of sensitivity is consistent with the evidence-based bleaching, where transient sensitivity of teeth is known to be the most common unfavorable event. A systematic review and meta-analysis comparing at-home versus in-office bleaching reported the occurrence of tooth sensitivity with both approaches and that this should be considered with whitening efficacy when deciding on the treatment.^[13] A meta-analysis of potassium-nitrate-based desensitizers found a small decrease in risk and intensity of sensitivity without affecting color change.^[14] Adjunctive measures can help to partly counteract this risk: A systematic review and meta-analysis study on potassium nitrate-based desensitizers showed a statistically significant reduction in sensitivity risk and intensity, and that the clinical magnitude of reduction may be subtle.^[14] These data have provided some context for our results and demonstrate that anticipatory counseling and evidence-based sensitivity management may have improved the overall patient experience.

Mechanical problems were also reported (9.0% had restorations that were broken or had fallen). While our questionnaire did not correlate complications to specific procedures, the veneer literature offers some good benchmarks when patients elect to have ceramics for longevity and esthetic stability. Systematic reviews of porcelain laminate veneers also reveal high overall survival but report largely recurring outcomes of technical complications such as chipping/fracture and debonding within clinical follow-up.^[15,16] Interpreting our results in light of this evidence underscores that high satisfaction and meaningful psychosocial benefit can accompany a non-trivial burden of complications, and emphasizes the importance of shared decision-making to balance the expected esthetic gain against maintenance needs and realistic longevity.

A major contribution of the current study is the extent of perceived psychosocial benefit following treatment. Most participants reported greater self-confidence (84.8%), lower anxiety about smiling (81.7%), comfort in social situations (86.6%), and improved comfort in photographs (85.9%). These outcomes are in line with the psychosocial framework that dental esthetics can influence self- and social functioning. The Psychosocial Impact of Dental Aesthetics Questionnaire has been designed to measure domains involving self-confidence in dentistry and social/psychological impact and offers a framework for validated interpretation of such changes.^[17]

Several number limitations should be recognized. The cross-sectional design prevents causal inference, and “before–after” perceptions were obtained retrospectively, which may create recall and social desirability biases. The achieved sample size ($n = 290$) was below the proposed minimum size described in the proposal, which may cause a reduction of statistical power for subgroup analyses. Convenience sampling and over-representation of women and university-educated study participants could limit the generalization to the general Saudi adult population. Finally, there was no assessment of outcomes at baseline and follow-up on a standardized, validated psychometric scale; future longitudinal studies that use validated psychometric instruments and follow-up procedure-specific could better quantify the durability of psychosocial benefit and the timing and predictors of complications.

CONCLUSION

In this Saudi adult sample, cosmetic dental treatments were associated with high patient-reported satisfaction and substantial perceived psychosocial benefit, particularly improved self-confidence, reduced smile-related anxiety, and greater comfort in social settings. Composite build-ups and bleaching were the most commonly reported modalities, reflecting a preference for accessible, appearance-enhancing interventions. Despite the overall favorable outcomes, over one-third of participants reported post-treatment complications, most often sensitivity, highlighting the

importance of pre-treatment counseling and evidence-based management of adverse effects. No clear differences in psychosocial improvement were detected across basic demographic groups or treatment types. Longitudinal studies using validated psychometric tools are recommended to confirm the durability of these benefits and clarify predictors of complications.

ACKNOWLEDGMENTS

We acknowledge all volunteers who provided samples for this research.

ETHICAL APPROVAL

The study was fully explained to all participants, and it was emphasized that participation was voluntary. Written informed consent was obtained from each participant before enrollment. All collected information was securely stored and used exclusively for research purposes.

INFORMED CONSENT

Written informed consent was obtained from all study participants.

DATA AND MATERIALS AVAILABILITY

All data generated or analyzed during this study are included in this published article.

REFERENCES

1. Touyz LZ, Raviv E, Harel-Raviv M. Cosmetic or esthetic dentistry? *Quintessence Int* 1999;30:227-33.
2. Peumans M, Van Meerbeek B, Lambrechts P, Vanherle G. Porcelain veneers: A review of the literature. *J Dent* 2000;28:163-77.
3. Nahsan FP, Mondelli RF, Franco EB, Naufel FS, Ueda JK, Schmitt VL, *et al.* Clinical strategies for esthetic excellence in anterior tooth restorations: Understanding color and composite resin selection. *J Appl Oral Sci* 2012;20:151-6.
4. Ludovichetti FS, Zerman N, Stellini E, Zambon G, Mazzoleni S, Zuccon A. Dental bleaching: Patient perception and satisfaction. *Minerva Dent Oral Sci* 2024;73:217-23.
5. Sajjad A, Bakar WZ, Mohamad D, Kannan TP. Porcelain laminate veneers: A conservative approach for pleasing esthetics-an overview. *J Appl Dent Med Sci* 2017;3:2454-88.

6. Mackenzie L, Parmar D, Shortall AC, Burke FJ. Direct anterior composites: A practical guide. *Dent Update* 2013;40:297-317.
7. Alqahtani MQ. Tooth-bleaching procedures and their controversial effects: A literature review. *Saudi Dent J* 2014;26:33-46.
8. Al Otaibi FL, Althumairy AF, Al Ahmadi BT, Alkhamis NM. Patients' preferences on different types of esthetic treatment in Saudi Arabia. *J Contemp Dent Pract* 2020;21:62-7.
9. 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;11:6.
10. Al-Ahmari JM, Al-Qarni KA, Ain TS, Alkahtani ZM, Togoo RA, Mir S. Factors affecting patient's satisfaction with the appearance of teeth, gums and treatments that improve aesthetics in Saudi Arabian sub-population. *J Evol Med Dent Sci* 2021;10:755-9.
11. Ain S, Al-Qarni M, Togoo RA, Mir AH, Alshahrani I. Factors affecting patient's satisfaction with the appearance of teeth, gums and treatments that improve aesthetics in Saudi Arabian sub-population. *J Evol Med Dent Sci* 2021;10:3385-91.
12. Dietschi D, Shahidi C, Krejci I. Clinical performance of direct anterior composite restorations: A systematic literature review and critical appraisal. *Int J Esthet Dent* 2019;14:252-70.
13. De Geus JL, Wambier LM, Kossatz S, Loguercio AD, Reis A. At-home vs in-office bleaching: A systematic review and meta-analysis. *Oper Dent* 2016;41:341-56.
14. Martini EC, Favoreto MW, Rezende M, De Geus JL, Loguercio AD, Reis A. Topical application of a desensitizing agent containing potassium nitrate before dental bleaching: A systematic review and meta-analysis. *Clin Oral Invest* 2021;25:4311-27.
15. Alenezi AH, Alswed M, Alsidrani S, Chrcanovic BR. Long-term survival and complication rates of porcelain laminate veneers in clinical studies: A systematic review. *J Clin Med* 2021;10:1074.
16. AlJazairy Y. Survival rates for porcelain laminate veneers: A systematic review. *Eur J Dent* 2021;15:360-8.
17. Klages U, Claus N, Wehrbein H, Zentner A. Development of a questionnaire for assessment of the psychosocial impact of dental aesthetics in young adults. *European J Orthod* 2006;28:103-11.

Source of Support: Nil. **Conflicts of Interest:** None declared.