

Satisfaction Among Recipients of Cosmetic Facial Filling Procedures at Dermatology Clinics in Saudi Arabia: A National Study

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Purpose: Facial cosmetic procedures, known for their rising popularity, frequently yield high patient satisfaction. However, certain patient characteristics may influence this satisfaction. Additionally, patients' satisfaction can affect their attitudes and preferences toward these procedures and recommendations to others. Our study aimed to assess post-procedure satisfaction among individuals who have undergone cosmetic facial filling procedures at dermatology clinics.

Patients and Methods: This cross-sectional study targeted the Saudi population who had undergone cosmetic facial filling procedures, excluding individuals under 18, those with a history of mental health disorders, or invasive surgical procedures, as well as those unable or unwilling to provide informed consent. Data were collected using a comprehensive questionnaire covering demographics, procedure details, satisfaction, and future plans. A 5-point Likert scale was used to assess self-perception and satisfaction. The questionnaire was developed after expert consultation and a literature review, with overall satisfaction calculated as the mean of all items.

Results: In this study of 408 participants in Saudi Arabia, predominantly young, unmarried females, high satisfaction levels were observed following cosmetic facial filling procedures, with a mean score of 3.9 for procedure results and 3.8 for meeting expectations. Most participants were Saudi nationals (97.8%), aged below 25 (41.7%), and held Bachelor's degrees (80.6%), with a majority being females (87.7%). Notably, factors significantly affecting overall satisfaction included gender ($p = 0.001$), marital status ($p = 0.023$), income ($p = 0.031$), procedure duration ($p = 0.003$), and procedure type ($p = 0.046$). These findings offer crucial insights for enhancing patient experiences and outcomes in cosmetic facial filling procedures.

Conclusion: This study unveiled substantial self-satisfaction levels, particularly regarding appearance and social well-being, emphasizing the significance of informative pre-procedure guidance, while gender, marital status, income, procedure duration, and type significantly impacted satisfaction. Healthcare providers must heed these factors to enhance patient contentment and overall procedure success.

Keywords: cosmetic procedures, patient satisfaction, noninvasive procedures, Saudi Arabia, self-esteem

Introduction

Cosmetic procedures have witnessed a notable surge in popularity over recent years, with an increasing number of individuals seeking methods to enhance their physical appearance and bolster their self-esteem.^{1,2} These procedures encompass a diverse range of options, from injectables and laser treatments to chemical peels, enabling individuals to rejuvenate their skin and augment their attractiveness without resorting to invasive surgical interventions.^{3,4} Notably, elective cosmetic procedures span a spectrum, encompassing breast enhancement, facial and body contouring, skin rejuvenation, and facial rejuvenation, each targeting well-functioning areas.⁵

In the realm of noninvasive cosmetic procedures, some of the most sought-after options include laser hair removal, chemical peels, strong pulsed light therapy, hyaluronic acid (HA) ie soft tissue fillers (filler injections) and Botulinum toxin type A injections.⁶ With growing public awareness and usage, the dermal filler industry has experienced significant expansion, with over 50 companies worldwide offering approximately 160 products. Botulinum toxin type A temporarily improves the appearance of deep facial lines or wrinkles between the eyebrows (glabellar lines), forehead lines, and crow's feet lines around the eyes (lateral canthal lines) whilst laser hair removal, chemical peels usage results in a brighter, fresher and more radiant skin.^{7,8}

Given the intricate nature of facial treatments, achieving optimal results demands a meticulous understanding of facial anatomy and injection techniques. The emergence of novel filler materials and techniques has not only simplified application but has also contributed to decreased side effects and improved success rates, yielding longer-lasting outcomes.^{9,10} Crucially, the degree of patient satisfaction with cosmetic procedures serves as the ultimate determinant of their effectiveness. Patient decisions to undergo cosmetic interventions are profoundly influenced by their self-perception, and the outcomes are intricately linked to enhancements in self-worth that ultimately elevate patient contentment.^{11,12}

Despite the growing popularity of noninvasive cosmetic procedures, research examining their impact on patients' self-esteem, particularly within the context of Saudi Arabia, remains limited. This study aims to address this gap by evaluating patient satisfaction following cosmetic procedures at dermatology clinics in Saudi Arabia. Gaining insights into the effects of noninvasive cosmetic procedures on self-esteem is paramount in enhancing patient satisfaction and furnishing dermatologists with evidence-based recommendations for their practice.

Material and Methods

Patients and Exclusion Criteria

A community-based cross-sectional study was conducted in Saudi Arabia, specifically targeting the Saudi population who had undergone cosmetic facial filling procedures. Exclusions were made for individuals below 18 years of age, those who had undergone invasive surgical procedures, individuals with a history of mental health disorders or body dysmorphic disorder, and participants who were unable or unwilling to provide informed consent.

Ethical Clearance

The Research Ethics Committee at King Khalid University (HAPO-06-B-001) has reviewed and agreed on the project with approval number ECM#2023-2502. We took careful precautions to see that our study complies with the Declaration of Helsinki.

Data Collection

Data were collected using a comprehensive questionnaire that covered participants' demographics, socioeconomic status, educational level, type of facial filling procedures undergone, duration, associated complications, cost of the procedures, suggestions for improvement, and plans for future cosmetic procedures. Additionally, participants' self-perception and facial filling procedure satisfaction were assessed using a 5-point Likert scale, with a higher score indicating higher satisfaction. The study questionnaire was developed by the researchers after a comprehensive literature review and expert consultation.¹³ The acceptance score, representing overall satisfaction, was determined by calculating the mean of all questionnaire items. The survey was shared with the community through a Google Forms link to ensure wider accessibility, and data collection continued until no new responses were received from eligible participants.

Statistical Analysis

In terms of statistical analysis, the collected data were revised, coded, and analyzed using IBM SPSS version 22 (SPSS, Inc. Chicago, IL). Two-tailed tests were employed, with statistical significance set at a p-value less than 0.05. The cosmetic surgery satisfaction scale was analyzed by computing an overall score based on the sum of all discrete item scores, with negative sentence scores reversed. The resulting overall composite mean score ranged from 1 to 5, with values less than 3 indicating low satisfaction, 3 to 4 indicating moderate satisfaction, and scores of 4 to 5 indicating high satisfaction.

Descriptive analysis, including frequency and percent distribution, was performed for all variables including participants' socio-demographic data, region, and monthly income and education. Participants' self-confidence and external appearance satisfaction after facial filling procedures were presented as means with standard deviations. The relationship between participants' overall satisfaction scores and their personal data and cosmetic procedure data was assessed using the Pearson Chi-square test and Monte Carlo exact test for small frequency distributions.

Results

A total of 408 participants fulfilling the inclusion criteria were included.

Personal Characteristics of the Study Participants

Table 1 presents the personal characteristics of the study participants who underwent cosmetic facial filling procedures at a dermatology clinic in Saudi Arabia. The participants were chosen from various regions in order to minimize bias of a certain region only, with the majority coming from the Southern Region (38.7%), followed by the Western Region (27.2%). In terms

Table 1 Demographic Profile of Participants Undergoing Cosmetic Facial Filling Procedures at a Saudi Dermatology Clinic

Characteristics	N	%
Region		
Central Region	44	10.8%
Northern Region	36	8.8%
Eastern Region	59	14.5%
Western Region	111	27.2%
Southern Region	158	38.7%
Age in years		
< 25	170	41.7%
25–30	129	31.6%
31–40	64	15.7%
> 40	45	11.0%
Gender		
Male	50	12.3%
Female	358	87.7%
Nationality		
Saudi	399	97.8%
Non-Saudi	9	2.2%
Educational level		
Below secondary	2	5%
Secondary	31	7.6%
Bachelor	329	80.6%
Post-graduate	46	11.3%
Marital status		
Unmarried	248	60.8%
Married	160	39.2%
Monthly income		
< 3000 SR	147	36.0%
3000–7000 SR	77	18.9%
7000–10000 SR	80	19.6%
> 10000 SR	104	25.5%

of age, a significant proportion of participants were below the age of 25 (41.7%) and between 25–30 years old (31.6%). The gender distribution showed that the majority were female (87.7%), while a smaller percentage were male (12.3%). Most of the participants were of Saudi nationality (97.8%), with only a small number being non-Saudi (2.2%). Regarding educational level, the majority held a bachelor's degree (80.6%), followed by Post-graduate qualifications (11.3%). In terms of marital status, a higher number were unmarried (60.8%) compared to those who were married (39.2%). Lastly, the monthly income distribution revealed that a substantial portion of participants had a monthly income below 3000 SR (36.0%), while others fell into income brackets of 3000–7000 SR (18.9%), 7000–10000 SR (19.6%), and over 10000 SR (25.5%).

Various Aspects of Cosmetic Facial Filling Procedures and Associated Outcomes Among Study Participants

Table 2 depicts the various aspects of cosmetic facial filling procedures and associated outcomes among study participants. The majority of participants had undergone filler injections (86.0%), while a large proportion had received facial fat injections (16.7%). Botulinum toxin type A injections were less common (2.2%), and only a small percentage had opted for laser procedures (0.5%), with 3.2% undergoing other cosmetic procedures. Regarding the duration of cosmetic facial filling procedures, a diverse range of experiences was observed, with participants reporting durations of less than 3 months

Table 2 Cosmetic Facial Filling Procedures and Outcomes Among Participants in Saudi Arabia

Cosmetic Procedure	N	%
Cosmetic facial filling procedures		
Filler injection	351	86.0%
Facial fat injection	68	16.7%
Botulinum toxin type A	9	2.2%
Laser	2	5%
Others	13	3.2%
For what duration did you undergo the cosmetic facial filling procedures?		
< 3 months	85	20.8%
3–6 months	125	30.6%
6 months– 1 year	77	18.9%
More than 1 year	121	29.7%
Did you experience any adverse events or complications after the cosmetic facial filling procedures?		
Yes	21	5.1%
No	387	94.9%
Did you receive counseling or psychological support before or after cosmetic facial filling procedures?		
Yes	170	41.7%
No	238	58.3%
Do you have any suggestions to improve the cosmetic facial filling procedure and/or overall experience?		
Yes	19	4.7%
No	389	95.3%
If yes, what are your suggestions?		
Reduce the cost	7	36.8%
More adjustments to the filling procedure	6	31.6%
Improved pre-procedure assessment	6	31.6%
How did you find the clinic where you underwent the cosmetic facial filling procedures?		
Social media	146	35.8%
Friend/family member	187	45.8%
Internet search	70	17.2%
Others	5	1.2%

(Continued)

Table 2 (Continued).

Cosmetic Procedure	N	%
How much have you spent on cosmetic facial filling procedures?		
1000–3000 SR	238	58.3%
4000–6000 SR	108	26.5%
7000–10000 SR	34	8.3%
> 10000 SR	28	6.9%
Do you plan to undergo additional cosmetic procedures in the future?		
Yes	261	64.0%
No	147	36.0%

(20.8%), 3–6 months (30.6%), 6 months to 1 year (18.9%), and more than 1 year (29.7%). Interestingly, only a minority of participants reported experiencing adverse events or complications after the procedures (5.1%), and a larger proportion had received counseling or psychological support (41.7%). Additionally, participants were asked for suggestions to improve the procedure or overall experience, with some recommending cost reduction (36.8%), more adjustments to the filling procedure (31.6%), and improvement in pre-procedure assessment (31.6%). The study also explored how participants found the clinics where they underwent procedures, with social media (35.8%), friend or family recommendations (45.8%), and internet searches (17.2%) being common methods. Finally, participants' expenditure on cosmetic facial filling procedures varied, with the majority spending between 1000–3000 Saudi Riyals (58.3%), followed by 4000–6000 SR (26.5%), 7000–10000 SR (8.3%), and over 10000 SR (6.9%). Interestingly, a significant proportion of participants expressed their intention to undergo additional cosmetic procedures in the future (64.0%), which indicates that they were happy with the procedures done. These findings provide valuable insights into the prevalence and experiences of individuals undergoing cosmetic facial filling procedures in Saudi Arabia, shedding light on various factors influencing their choices and satisfaction.

Participants' Self-Perception and Facial Filling Procedure Satisfaction

Further, as shown in [Table 3](#), participants' self-perception and facial filling procedure satisfaction were assessed through a series of questions. On self-perception and appearance satisfaction, the majority of respondents expressed satisfaction

Table 3 Participant Self-Perception and Satisfaction with Facial Filling Procedures

Satisfaction	Mean	SD
Self-perception and appearance satisfaction		
<i>I feel satisfied with my external appearance</i>	4.1	1.3
<i>I think my self-worth is affected by my external appearance</i>	2.9	1.5
<i>I feel comfortable in social situations because of my external appearance</i>	3.9	1.2
<i>I compare my external appearance to others</i>	2.3	1.5
<i>I feel insecure about my external appearance</i>	2.2	1.5
Facial filling procedure satisfaction		
<i>I am satisfied with the results of the cosmetic facial filling procedures</i>	3.9	1.3
<i>My expectations were met after my cosmetic facial filling procedure</i>	3.8	1.2
<i>I will recommend others to visit the clinic</i>	3.8	1.3
<i>I am satisfied with the level of information I was provided with before the procedure</i>	3.8	1.3
<i>Facial cosmetic procedures have improved my overall satisfaction with my appearance</i>	3.8	1.3
<i>I think the cosmetic procedures have improved my facial features</i>	3.7	1.3
<i>I think the cosmetic procedures made me look younger</i>	3.5	1.4
<i>I think cosmetic procedures have made me more attractive</i>	3.8	1.2
<i>Cosmetic procedures have had a positive impact on my self-confidence</i>	3.7	1.3
<i>Cosmetic procedures have improved my quality of life</i>	3.5	1.4

with their external appearance, with a mean score of 4.1 out of 5. They reported feeling comfortable in social situations due to their external appearance (mean score of 3.9), although a relatively lower score of 2.9 indicated that self-worth was moderately affected by external appearance. Respondents also acknowledged some comparisons with others (mean score of 2.3) and a degree of insecurity (mean score of 2.2) regarding their external appearance. Regarding facial filling procedure satisfaction, participants generally reported satisfaction with the results (mean score of 3.9) and felt that their expectations were met (mean score of 3.8). They expressed a willingness to recommend the clinic to others (mean score of 3.8) and were content with the level of information provided before the procedure (mean score of 3.8). Overall, facial cosmetic procedures were perceived positively, with respondents indicating improvements in appearance, self-confidence, and quality of life, as well as a perceived reduction in age (mean scores ranging from 3.5 to 3.8). These findings highlight the generally positive impact of cosmetic facial filling procedures on both self-perception and satisfaction among participants in this national study.

Overall Satisfaction Level After Cosmetic Facial Filling Procedures at Saudi Dermatology Clinics

Figure 1 depicts the overall satisfaction level after cosmetic facial filling procedures at Saudi dermatology clinics. A total of 147 (36%) had an overall high level of satisfaction after the procedures, but only 81 (19.9%) had a low level of satisfaction, and 180 (44.1%) had a moderate level of satisfaction after the procedures.

Table 4 shows the factors contributing to overall participant satisfaction after the cosmetic procedures. The study assessed various factors, including region, age, gender, nationality, educational level, marital status, monthly income, the duration of cosmetic facial filling procedures, the experience of negative changes or complications, receipt of counseling or psychological support, expenditure on procedures, and plans for future cosmetic procedures. Notably, gender emerged as a significant determinant of overall satisfaction ($p = 0.001$), with a higher percentage of males (40.0%) reporting low satisfaction compared to females (17.0%). Additionally, marital status significantly affected satisfaction ($p = 0.023$), with unmarried individuals exhibiting lower overall satisfaction (20.2%) than their married counterparts (43.8%). Income levels also demonstrated a significant impact ($p = 0.031$), with participants earning less than 3000 Saudi Riyals (SR) per

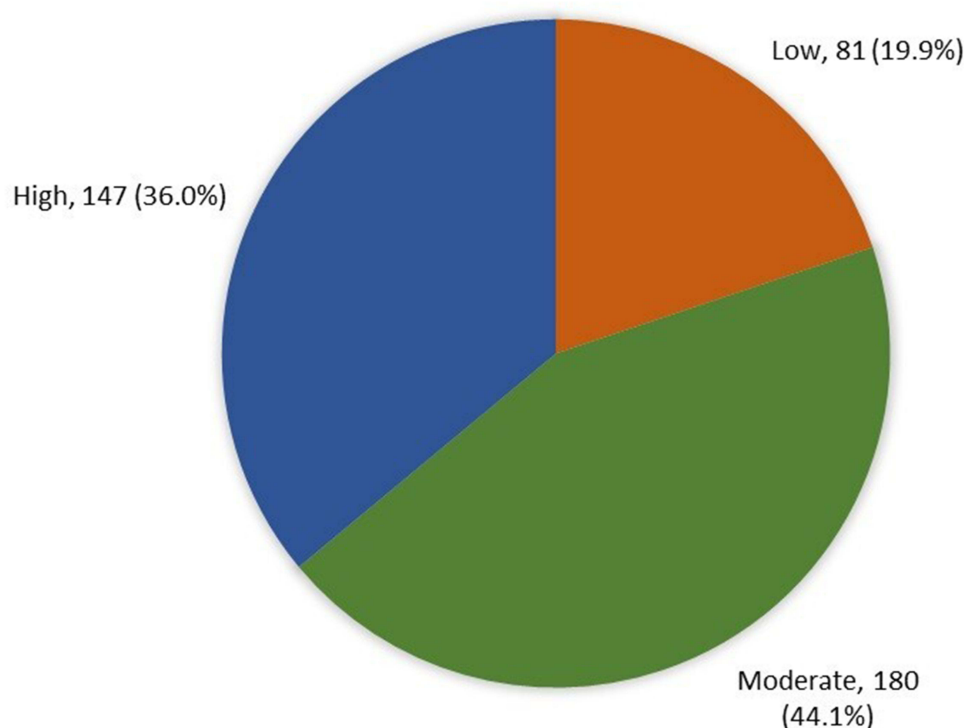


Figure 1 Patient Satisfaction Following Cosmetic Facial Filling Procedures at a Dermatology Clinic: A Visual Representation.

Table 4 Factors Influencing Satisfaction After Cosmetic Facial Filling Procedures

Factors		Overall Satisfaction Level						p-value
		Low		Moderate		High		
		No	%	No	%	No	%	
Region	Central Region	4	9.1%	22	50.0%	18	40.9%	377
	Northern Region	7	19.4%	14	38.9%	15	41.7%	
	Eastern Region	12	20.3%	24	40.7%	23	39.0%	
	Western Region	18	16.2%	55	49.5%	38	34.2%	
	Southern Region	40	25.3%	65	41.1%	53	33.5%	
Age in years	< 25	36	21.2%	83	48.8%	51	30.0%	257
	25–30	24	18.6%	51	39.5%	54	41.9%	
	31–40	12	18.8%	31	48.4%	21	32.8%	
	> 40	9	20.0%	15	33.3%	21	46.7%	
Gender	Male	20	40.0%	17	34.0%	13	26.0%	001*
	Female	61	17.0%	163	45.5%	134	37.4%	
Nationality	Saudi	77	19.3%	176	44.1%	146	36.6%	111^
	Non-Saudi	4	44.4%	4	44.4%	1	11.1%	
Educational level	Below secondary	0	0.0%	0	0.0%	0	0.0%	924^
	Secondary	6	18.2%	16	48.5%	11	33.3%	
	Bachelor	66	20.1%	146	44.4%	117	35.6%	
	Post-graduate	9	19.6%	18	39.1%	19	41.3%	
Marital status	Unmarried	50	20.2%	121	48.8%	77	31.0%	023*
	Married	31	19.4%	59	36.9%	70	43.8%	
Monthly income	< 3000 SR	37	25.2%	69	46.9%	41	27.9%	031*
	3000–7000 SR	18	23.4%	25	32.5%	34	44.2%	
	7000–10000 SR	9	11.3%	38	47.5%	33	41.3%	
	> 10000 SR	17	16.3%	48	46.2%	39	37.5%	
Duration of the cosmetic facial filling procedures	< 3 months	17	20.0%	30	35.3%	38	44.7%	003*
	3–6 months	14	11.2%	57	45.6%	54	43.2%	
	6 months- 1 year	17	22.1%	33	42.9%	27	35.1%	
	More than 1 year	33	27.3%	60	49.6%	28	23.1%	
Adverse events and complications after cosmetic facial filling procedures	Yes	5	23.8%	9	42.9%	7	33.3%	893
	No	76	19.6%	171	44.2%	140	36.2%	
Receipt of counseling or psychological support before or after cosmetic facial filling procedures	Yes	30	17.6%	61	35.9%	79	46.5%	001*
	No	51	21.4%	119	50.0%	68	28.6%	
Expenditure on cosmetic facial filling procedures	1000–3000 SR	47	19.7%	111	46.6%	80	33.6%	750
	4000–6000 SR	19	17.6%	47	43.5%	42	38.9%	
	7000–10000 SR	8	23.5%	13	38.2%	13	38.2%	
	> 10000 SR	7	25.0%	9	32.1%	12	42.9%	
Intention for future facial filling cosmetic procedures	Yes	34	13.0%	115	44.1%	112	42.9%	001*
	No	47	32.0%	65	44.2%	35	23.8%	
Type of cosmetic facial filling procedures	Filler injection	65	18.5%	158	45.0%	128	36.5%	046*^
	Facial fat injection	21	30.9%	25	36.8%	22	32.4%	
	Botulinum toxin type A injection	0	0.0%	5	55.6%	4	44.4%	
	Others	6	40.0%	6	40.0%	3	20.0%	

Notes: P: Pearson χ^2 test. ^Exact probability test. *P < 0.05 (significant).

Abbreviations: AUC, area under the curve; LS, least squares; NE, not estimable.

month reporting lower satisfaction (25.2%) than those in higher income brackets. Furthermore, the duration of cosmetic facial filling procedures displayed significance ($p = 0.003$), as individuals with procedure durations of more than one year showed lower overall satisfaction (23.1%) compared to those with shorter durations. Additionally, the type of cosmetic procedure, including filler injection, facial fat injection, and Botox injection, exhibited significant differences in overall satisfaction ($p = 0.046$). These findings shed light on the importance of these factors in influencing participants' satisfaction with the procedures.

Discussion

The current study aimed to evaluate the satisfaction levels of individuals who underwent cosmetic facial filling procedures in Saudi dermatology clinics. Patient satisfaction is a critical factor in assessing the effectiveness of aesthetic procedures, and healthcare providers strive to ensure patient contentment.¹⁴ Cosmetic treatments are often sought to enhance self-esteem and alleviate emotional distress associated with one's physical appearance.^{12,15} Studies have indicated that individuals who are content with their lives tend to have better physical health and are more engaged in social and professional activities.¹⁶

Our study findings revealed that the majority of participants who underwent cosmetic facial filling procedures were young, unmarried females, consistent with observations in existing literature. Studies by Maisel et al¹⁷ and Heyes and Jones¹⁸ noted a heightened interest in cosmetic treatments among individuals under the age of 45, including procedures like acne scar removal, laser hair removal, liposuction, and tattoo removal. Frederick et al¹⁹ reported that 48% of women and 23% of men expressed an interest in cosmetic surgery, with additional percentages indicating potential interest. Markey et al²⁰ found that women tend to express greater concerns about cosmetic surgery compared to men, a pattern also corroborated by Swami et al.²¹ This gender difference may be attributed to the societal pressure on women to conform to beauty ideals and attract attention, as noted by Brown et al.²² Similarly, Morait et al²³ observed gender-related differences in Saudi Arabia, where women exhibited a higher interest in cosmetic surgery compared to men.

Assessing participants' self-esteem and satisfaction with their external appearance, our study identified a notably high level of self-satisfaction, particularly in terms of external appearance and comfort in social situations due to appearance. A person's perception of their body image and physical appearance significantly influences their psychological well-being, especially among individuals with gender dysphoria. This aligns with findings from prior research.^{24–26}

Regarding patient satisfaction after cosmetic facial filling procedures, our study found that approximately one-third of participants reported high overall satisfaction, while only one-fifth expressed low satisfaction. The highest satisfaction ratings were associated with the results of the procedures, meeting expectations, the information provided before the procedure, enhanced overall satisfaction with appearance, and the cosmetic impact on attractiveness. This high satisfaction level translated into a willingness to undergo further procedures in the future and a readiness to recommend the clinic to others. Almutlq et al¹³ also reported high self-esteem among patients undergoing noninvasive cosmetic procedures. Bharti et al²⁷ found that the majority of patients who had undergone noninvasive facial rejuvenation procedures reported high satisfaction and indicated they would recommend dermal fillers to others. Molina et al¹⁶ reported that 96.5% of participants were satisfied with full-facial aesthetic outcomes after 3 weeks, with 92.9% maintaining satisfaction after 6 months. Moreover, more than 91% of participants believed that treatment outcomes either met or exceeded their expectations, with over 94% willing to recommend the treatment to others. Similarly, Faris²⁸ reported that over 90% of participants experienced improvement following filler treatment, ranging from slight to significant enhancement. Bertucci and Nikolis found that 89% of patients reported high satisfaction levels following facial enhancement procedures.²⁹ Eccleston and Murphy assessed satisfaction at two time points, one month and twelve months post-procedure, and reported high satisfaction rates of 96.9% and 80%, respectively.³⁰ Our study also indicated that higher satisfaction levels were associated with male patients, unmarried individuals, recent procedures, those who received counseling before the procedures, and individuals who underwent Botulinum toxin type A and filler injections.

Recommendations

To enhance overall outcomes and patient satisfaction, future studies should delve deeper into tailoring treatments to individual requirements, considering factors such as age, gender, and personal goals. Additionally, there is a crucial need

to explore and implement cost-effective measures within the field of cosmetic procedures. Evaluating strategies to reduce procedural costs while maintaining safety and quality standards can promote greater accessibility to these treatments. By addressing both patient-centric approaches and cost-effectiveness, healthcare providers and policymakers can contribute to improving the overall experience and outcomes of cosmetic facial filling procedures.

Limitations of the study: Although we have compared the level of satisfaction for Botulinum toxin type A versus fat versus HA, it is an approximate as all have different actions. The numbers are also too low to permit conclusions on this.

Conclusion

This study analyzed individuals who underwent cosmetic facial filling procedures in Saudi dermatology clinics. Most participants were young, unmarried females, consistent with existing trends. High levels of self-satisfaction were noted, especially regarding external appearance and social comfort. The study revealed that about one-third of participants reported high overall satisfaction with the procedures, highlighting the crucial role of clear and comprehensive pre-procedure information. Gender, marital status, income, procedure duration, and the type of cosmetic procedure significantly influenced satisfaction. Healthcare providers should take these factors into careful consideration to elevate the level of patient satisfaction with cosmetic procedures, ultimately ensuring a more fulfilling and successful patient experience.

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Disclosure

The author(s) report no conflicts of interest in this work.

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