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Evaluation of the psychosocial aspects of the patients applying to the university cosmetology unit

Gokturk Oraloglu[1] Ozlem Kuman Tuncel[2] Hayriye Elbi[2] Ahmet Afsin Sagduyu[3] Ilgen Ertam Sagduyu[4]

1 Istanbul Health and Technology University, Medical Faculty, Department of Dermatology, Istanbul, Turkey
2 Ege University, Medical Faculty, Department of Psychiatry, Izmir, Turkey
3 Baskent University, Medical Faculty, Department of Psychiatry, Izmir, Turkey
4 Ege University, Medical Faculty, Department of Dermatology, Izmir, Turkey

Abstract

Objective: It is important to evaluate cosmetic patients psychologically and thus minimize potential adverse psychological outcomes that may occur after the procedure. This study aimed to investigate the psychosocial parameters in cosmetic patients.

Materials and methods: Female patients (≥18 years old) who applied to the Ege University Dermatology and Venereal Diseases Department Cosmetology Unit were selected. "Hospital Anxiety and Depression Scale", "Body Image Coping Strategies Inventory", "Temperament and Character Inventory", "Dermatology Quality of Life Index" and "Life Events' Checklist-5 " forms were applied to the patients. The obtained data were analyzed statistically.

Results: There were 36 people in the case group and 34 participants in the control group. A statistically significant difference was not found regarding life quality, anxiety, body image disturbance, and personally experienced life events between the two groups. Reward dependence, empathy, and purposefulness were significantly higher in the cosmetic group.

Conclusion: The life quality was not negatively affected, the incidence of anxiety and depression was low, traumatic events were rare, and positive rational acceptance was mostly chosen as the main method of coping with body image negativities in cosmetic patients. Compared with controls, cosmetic patients demonstrated higher reward dependence, empathy, and purposefulness scores, without evidence of increased psychopathology.

Keywords: Psychosocial aspects, Life quality, Body image, Anxiety, Depression.

Correspondence:
Gokturk Oraloglu, Istanbul Health and Technology University, Medical Faculty, Department of Dermatology, 34275 Istanbul, Turkey. E-mail: gokturkoraloglu@gmail.com

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ORCID ID of the author(s):
GO: 0000-0002-9155-621X
OKT: 0000-0002-9632-6173
HE: 0000-0003-3651-4292
AAS: 0000-0002-0904-2413
IES: 0000-0003-2341-3935

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Introduction

The popularity of minimally invasive cosmetic procedures (MICP) has increased steadily in recent years. The statistics of the American Society of Aesthetic Plastic Surgery revealed that more than 1 billion dollars had been spent on MICP in 2018 (1). With the increase in cosmetic procedures worldwide, the importance of the relationship between cosmetic procedures and psychosocial status draws attention. Recognizing the psychosocial status of patients applying for MICP informs the physician about which patients may be dissatisfied with the procedure and which patients are not suitable for a cosmetic procedure. The dramatic increase in the demand for MICP has placed dermatologists in a more critical position to be sensible of psychiatric disorders that may be observed in these individuals and refer them to psychiatry (2).

This study aimed to comprehensively evaluate and compare the psychosocial characteristics of women applying for MICP with a control group who had never sought cosmetic interventions. Specifically, we assessed health-related quality of life, anxiety and depression levels, body image coping strategies, exposure to traumatic life events, and temperament and character traits.

We hypothesized that individuals seeking MICP would demonstrate distinct personality traits and body image coping patterns compared to controls, while not necessarily exhibiting higher levels of anxiety, depression, or impaired quality of life.

Materials and methods

This study was designed as a cross-sectional case–control study conducted at the Ege University Dermatology and Venereal Diseases Department Cosmetology Unit. Women aged 18 years and older who applied to the cosmetology unit for minimally invasive cosmetic procedures between November 2019 and June 2020 were included in the case group. Individuals with intellectual disability were not eligible for minimally invasive cosmetic procedures and were therefore excluded from the study. Only female volunteers were selected to ensure that the groups are homogeneous since females are more frequently applying for these procedures than males. Healthy female volunteers aged 18 years and older who had never undergone cosmetic procedures and had no intention of seeking cosmetic interventions were selected as the control group. All participants applying for MICP were at least high school graduates. Therefore, an inclusion criterion for the control group was education higher than high school. A structured form collecting demographic data including age, marital status, education level, previous cosmetic procedures, and requested procedures was completed by participants. Besides, "Dermatology Quality of Life Index (DLQI)", "Hospital Anxiety and Depression Scale (HADS)", ''Body Image Coping Strategies Inventory (BICSI)'', ''Temperament and Character Inventory (TCI)'' and ''Life Events Checklist-5 (LEC-5)'' were applied to all participants. These questionnaires have Turkish validity and reliability studies (3-6). Written informed consent was obtained from all participants. All participants applying for MICP completed the questionnaires before the procedure was performed.

Dermatology quality of life index (DLQI)

This test contains 10 questions investigating the effects of the patient's skin on the health-related quality of life (HRQoL), in the last week. A total score of 0-1 indicates that the HRQoL is not affected, 2-5 indicates a slightly affected HRQoL, 6-10 indicates moderately affected HRQoL, 11-20 indicates very largely affected HRQoL, and a score of 21-30 indicates that HRQoL is extremely largely affected (7).

Hospital anxiety and depression scale (HADS)

There are 14 questions in this test (8). According to the Turkish validity and reliability study of this test, a score of 8 and above is considered depression, and a score of 11 and above is considered anxiety in the Turkish population (4).

Body image coping strategies inventory (BICSI)

BICSI includes three subscales: "appearance fixing", "positive rational acceptance", and "avoidance". ‘’Appearance fixing’’ is directed at correction, covering or camouflaging of a physical defect. ‘’Positive rational acceptance’’ incudes positive and logical acceptance of the one’s appearance. ‘’Avoidance’’ entails the attempts to runs away from body image negativities (9).

Temperament and character inventory (TCI)

It is a 240-question test evaluating personality traits based on the psychobiological model developed by Cloninger (10).

Life events checklist-5 (LEC-5)

It assesses exposure to 16 events that potentially lead to post-traumatic stress disorder or stress and includes an additional item assessing an extraordinarily stressful event that is not included in the first 16 items. This test only identifies the events experienced by people and provides information about the traumatic experiences they have been exposed to. There is no scoring system (11).

Statistical analysis

Statistical analyses were performed using the IBM SPSS Statistics 25.0 (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) package program. The level of significance was determined as 0.05 in all analyses. In the study, numerical data were summarized with mean, standard deviation, median, minimum, and maximum values, and categorical data were summarized using frequency and percentage values. Normality was checked with the Shapiro-Wilk test, and in parallel with the results, the study groups were compared with the independent samples T-test or the Mann Whitney-U test. The relationship between qualitative variables was examined using Chi-Square test or Fisher's exact test.

Results

A total of 70 participants were included in the study: 36 women in the MICP group and 34 in the control group. Five (13.9%) patients requested a MICP for the first time. Among the patients applying for minimally invasive cosmetic procedures, 28 (77.8%) requested only botulinum toxin injection, 4 (11.1%) requested both botulinum toxin injection and dermal filler, 1 (2.8%) requested botulinum toxin injection combined with laser treatment, 1 (2.8%) requested only dermal filler, and 2 (5.6%) requested only platelet-rich plasma injection. Botulinum toxin injection (64.1%) was the most common preferred procedure in patients who had previously had MICP. The mean age was significantly higher in the MICP group compared to controls (47.72±11.54 vs 40.59±8.98, p=0.005). Demographic Features of the participants are given in Table 1.

Normality of continuous variables was assessed using the Shapiro–Wilk test. According to distribution characteristics, independent samples t-test or Mann–Whitney U test was applied.

Table 1*:* Demographic features of the participants

Demographic features	**Case**	**Control**	**p value**
Age, mean±SD	47.72±11.545	40.59±8.982	0.005*
Education level, n (%)			1.000
University graduates	32 (88.9%)	31 (91.2%)	
High school graduates	4 (11.1%)	3 (8.8%)	
Marital status, n (%)			0.564
Married	21 (58.3%)	24 (70.6%)	
Divorced/widowed	6 (16.7%)	4 (11.8%)	
Single	9 (25%)	6 (17.6%)	

Values are presented as mean ± standard deviation (SD) or number (%). The independent samples t-test or Mann–Whitney U test was used for continuous variables according to normality distribution. Categorical variables were compared using the Chi-square test or Fisher's exact test. *$p < 0.05$ was considered statistically significant.

The mean DLQI score was 1.14±1.51 in the MICP group and 2.50±3.84 in the control group, with no statistically significant difference between the groups (p=0.471) (Table 2). According to HADS cut-off points, depressive symptom levels above the threshold were observed in two (5.6%) participants in the MICP group and 11 (32.4%) participants in the control group; anxiety scores above the cut-off were observed in two (5.6%) participants in the MICP group and eight (23.5%) participants in the control group. A statistically significant difference was found between the groups in the depression subscale (p=0.030). Although anxiety scores were higher in the control group, the difference between the groups was not statistically significant (p=0.261) (Table 2). No statistically significant differences were observed between groups in any BICSI subscale (appearance fixing p=0.179; positive rational acceptance p=0.162; avoidance p=0.925) (Table 2). TCI revealed that reward dependence (p=0.039), empathy (p=0.003), and purposefulness (p=0.041) were statistically significantly higher in the case group (Table 2).

Table 2: Dermatology quality of life index (DLQI), Hospital anxiety and depression (HADS), Body image coping strategies inventory (BICSI) and Temperament and character inventory (TCI) results

Tests	**Cases** Mean±SD (min-max)	**Control** Mean±SD (min-max)	**p-value**
DLQI	1.14±1.515 (0-5)	2.50±3.847 (0-15)	0.471
HADS-Depression	3.44±2.26 (0-9)	5.53±3.847 (1-13)	0.030*
HADS-Anxiety	6.03±2.50 (1-11)	7.56±4.069 (1-17)	0.261
BICSI-Appearance Fixing	13.69±5.104 (0-20)	12.21±6.104 (0-24)	0.179
BICSI-Positive Rational Acceptance	19.33±3.189 (11-25)	17.76±4.533 (3-23)	0.162
BICSI-Avoidance	6.92±3.228 (1-13)	7.21±4.241 (1-18)	0.925
TCI-Novelty Seeking (NS)	18.08±4.410 (11-31)	17.32±4.07 (8-29)	0.505
TCI-Exploratory excitability (NS1)	6.56±1.611 (4-10)	5.85±1.909 (1-9)	0.139
TCI-Impulsiveness (NS2)	3.44±1.904 (0-8)	3.50±1.376 (1-6)	0.867
TCI-Extravagance (NS3)	4.53±1.320 (2-8)	4.74±1.814 (2-9)	0.745
TCI-Disorderliness (NS4)	3.56±1.796 (0-10)	3.24±1.615 (1-8)	0.301
TCI-Harm Avoidance (HA)	14.03±5.034 (3-27)	15.97±5.802 (4-31)	0.276
TCI-Anticipatory worry (HA1)	5.00±2.042 (1-10)	5.18±2.249 (1-10)	0.845
TCI-Fear of uncertainty (HA2)	3.56±1.748 (0-7)	3.88±1.838 (1-7)	0.567
TCI-Shyness (HA3)	2.33±1.789 (0-5)	3.18±2.110 (0-8)	0.114
TCI-Fatigability (HA4)	3.14±2.031 (0-8)	3.74±2.260 (0-8)	0.253
TCI-Reward Dependence (RD)	15.03±3.501 (9-21)	13.15±3.276 (6-19)	0.039*
TCI-Sentimentality (RD1)	7.03±2.104 (2-10)	6.5±2.192 (3-10)	0.300
TCI-Attachment (RD3)	4.89±1.635(1-8)	3.97±1.946(0-7)	0.067
TCI-Dependence (RD4)	3.11±1.410(0-5)	2.68±1.249 (0-5)	0.215
TCI-Persistence (P)	5.91±1.666 (1-8)	5.74±1.657 (1-8)	0.214
TCI-Self-Directedness (S)	32.58±6.189 (19-43)	30.32±6.95 (14-40)	0.195
TCI-Responsibility (S1)	5.81±1.880 (2-8)	5.29±1.818 (2-8)	0.196
TCI-Purposefulness (S2)	6.81±1.369 (3-8)	5.97±1.883 (1-8)	0.041*
TCI-Resourcefulness (S3)	3.86±1.018(1-5)	3.71±1.088 (1-5)	0.567
TCI-Self-acceptance (S4)	5.97±2.833 (1-11)	5.32±2.495 (0-11)	0.489
TCI-Enlightened second nature (S5)	10.14±1.659(6-12)	10.03±2.007 (6-12)	0.866
TCI-Cooperativeness	31.33±5.712(21-40)	30.26±5.201(20-40)	0.416
TCI-Social acceptance (C1)	6.44±1.520 (2-8)	6.35±1.574 (3-8)	0.851
TCI-Empathy (C2)	5.11±1.282 (1-7)	4.24±1.232 (1-7)	0.003*
TCI-Helpfulness (C3)	5.33±1.287 (3-8)	4.79±1.250 (2-7)	0.121
TCI-Compassion (C4)	7.22±2.257 (3-10)	7.56±1.894 (3-10)	0.601

TCI-Pure-hearted conscience (C5)	7.22±1.436 (3-9)	7.32±1.408 (3-9)	0.661
TCI-Self-Transcendence (ST)	20.06±6.183 (4-29)	18.24±5.995 (5-28)	0.179
TCI-Self-forgetful (ST1)	6.17±2.299 (1-10)	5.50±2.093 (2-11)	0.150
TCI-Transpersonal identification (ST2)	5.89±2.175 (1-9)	5.29±2.182 (1-9)	0.236
TCI-Spiritual acceptance (ST3)	8.00±2.986 (0-13)	7.44±3.057 (0-13)	0.271

Values are presented as mean ± standard deviation (SD) with minimum–maximum values in parentheses. The independent samples t-test or Mann–Whitney U test was used according to data distribution. *$p < 0.05$ was considered statistically significant. DLQI: Dermatology quality of life index, HADS: Hospital anxiety and depression, BICSI: Body image coping strategies inventory and TCI: Temperament and character inventory

According to the LEC-5, no statistically significant difference was found regarding the traumatic events the individuals were exposed to in both groups. The most common event was a natural disaster with a high rate of 50% in the MICP group and 55.9% in the control group. The second most frequent event was a transportation accident (38.9%), and any other very stressful event or experience (27.8%) was the third most frequent in the MICP group. In the control group, the second most frequent event was a transportation accident (38.9%), and any other very stressful event or experience (27.8%) was the third most frequent.

Discussion

The outcome of a successful cosmetic procedure is patient satisfaction. However, beauty is a relative concept, and the technical success of a cosmetic procedure may not necessarily result in patient satisfaction. Therefore, it is crucial to evaluate the patient's perspective to detect any significant changes in their satisfaction (12,13).
It is possible to quantitatively evaluate the psychological effects of the cosmetic procedure by measuring the HRQoL (12,13). It has been reported that MICP affects HRQoL positively (14-18). Previous studies evaluating quality of life after minimally invasive cosmetic procedures have mostly used a pre–post design. For example, Dayan et al. assessed quality of life and self-esteem before and after botulinum toxin injection and reported significant improvements following treatment (14). Similarly, de Aquino et al. evaluated patients using the DLQI and demonstrated improved quality of life after botulinum toxin and dermal filler injections (15). In contrast, Sobanko et al. in a prospective cohort study assessing patients before and six weeks after treatment, observed an increase in quality-of-life scores that did not reach statistical significance (17). In our study, we did not find a difference in HRQoL between the MICP and control group.
The interaction between dermatological conditions and psychosocial well-being has been increasingly emphasized in recent literature. For instance, alterations in sleep quality and associated mood parameters have been reported in patients with acne vulgaris receiving systemic isotretinoin therapy, highlighting the complex relationship between dermatological interventions and psychological outcomes. Such findings further support the importance of evaluating psychosocial parameters in individuals seeking cosmetic or dermatological treatments (19).

There are few studies examining the relationship between MICP and anxiety and depression reporting different outcomes (20-22). Waldman et al. reported that the majority of MICP patients stated that their physical appearance could affect them emotionally, causing anxiety and depression, and therefore, having cosmetic procedures makes them feel better mentally (23). In addition, glabellar botulinum toxin injection has been shown to reduce depressive symptoms and even some authors suggested that it may be used in the treatment of major depression (24). In our study, anxiety was found at a rate of 5.6% and depression at a rate of 5.6% in the case group.

There are few studies investigating body image disorders in MICP patients. Yazdandoost et al. reported that body image dissatisfaction was significantly higher in the invasive group than in the MICP group, and body image dissatisfaction was higher in both the invasive and MICP groups than the control group (20). The authors considered that individuals with more severe body image disorders tended to apply more invasive procedures to overcome their disturbance. Contrary to this study, Scharschmidt et al. found no body image disturbance in the cosmetic group consisting of botulinum toxin and dermal filler patients (18). In another study by Yazdandoost et al. body image coping strategies were compared between plastic surgery patients, MICP patients, and control groups (25). The avoidance subscale scores were highest in the invasive group, followed by the MICP group and the control group, respectively. Avoidance was the strongest predictive strategy in the invasive group, while positive rational acceptance was the strongest strategy in the MICP group and the normal population. However, we found no statistical difference between MICP and the control group for BICSI subscale scores. Therefore, we can say that our MICP group was not different from the general population regarding to body image coping strategies. As in the previous study, it was noteworthy that the positive rational acceptance score was the highest in both groups. Individuals using positive rational acceptance have higher self-esteem, less frequent body image disturbances, and better life quality outcomes regarding body image (26). The fact that positive rational acceptance was the main coping method in the cosmetic group in our study, and the fact that the life quality was not negatively affected in this group and that the rates of anxiety and depression were low, support this data in the literature.

We investigated traumatic life events in this study to determine if unusual traumatic experiences might motivate individuals to pursue cosmetic procedures. However, no statistically significant difference was found regarding the traumatic events the individuals were exposed to between the groups. The most common event was natural disasters in the MICP group. It is considered that these rates are predictably high since our country is located in an earthquake zone. The fact that other traumatic events are also seen in a small number of people shows that participants in our study generally encountered less traumatic events in their lives. On the other hand, it may be considered that a more comprehensive interview including open-ended questions that cover events other than the traumatic events specified in this test may be more appropriate to elucidate the motivations for the MICP. Further studies are needed regarding this issue.

There are few studies on the character traits of MICP patients. Scharschmidt et al. evaluated the personality traits of the MICP patients with the Big Five-Factor Personality Inventory Test which measures five dimensions of personality (openness to experience, conscientiousness, extraversion, emotional instability, and agreeableness) and found that these individuals were more extroverted, more adaptable, more open to experiences and more neurotic than the control group (18). The authors considered these people socially desirable, more positive, and protective because of their high adaptability, openness to experiences, and extraversion values. In the same study, no body image disturbance was found in the cosmetic patient group. The authors speculated that the absence of body image disturbance and high-value conformity implied stronger health awareness rather than competition for a better appearance as the primary motivation for undergoing MICP. In parallel, a recent review from the plastic surgery literature emphasized that facial aesthetic interventions—including minimally invasive procedures—can improve third-party social trait judgments, with patients being perceived as more attractive and socially adept (eg, more friendly, successful, healthy, and approachable), suggesting that aesthetic interventions may influence social feedback and interpersonal evaluations beyond patient-reported outcomes (27). In our study, reward dependence, empathy, and purposefulness scores were statistically significantly higher in the MICP group. These personality traits are generally associated with socially oriented behavior, sensitivity to interpersonal feedback, and goal-directed actions (28,29). According to a study investigating the connection between the dimensions of the character and temperament inventory and the character dimensions of the five-factor personality test, reward dependence was primarily associated with extraversion and to a lesser extent with openness (30). In this context, it was considered that the high reward dependence in cosmetic patients in our study may be in line with the results of Scharschmidt et al (18). In addition, the high rate of reward dependence in our case group, which had undergone cosmetic procedures before, could explain the repetition of cosmetic procedures by these individuals, which positively affects the external appearance of the individual and therefore may cause secondary gains in the individual's life. Overall, these findings may suggest that individuals undergoing minimally invasive cosmetic procedures tend to have socially adaptive personality traits and goal-oriented behaviors rather than increased psychopathology.

Limitations

One of the limitations of our study is the small number of individuals included. Since the COVID-19 pandemic emerged and our cosmetology unit was closed during this period, patient recruitment was stopped. In addition, our study was single-centered and carried out in an academic center in a metropolitan city; therefore, patients who applied to private clinics and cosmetic patients from different socioeconomic levels could not be included. Also, the MICP group was significantly older than the control group. Another limitation is the inability to reveal the psychological aspects of male patients requesting cosmetic procedures since only female patients were included in the study.

Conclusions

Our findings suggest that MICP cases did not have higher psychopathology and poorer HRQoL than the control group. However, there are some differences regarding the personality traits between the groups. Compared with controls, individuals in the MICP group demonstrated higher reward dependence, empathy, and purposefulness scores, which may indicate more socially oriented and goal-directed personality characteristics. These findings contribute to a more comprehensive understanding of the psychosocial profile of individuals seeking cosmetic procedures.

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Contributions:
Research concept and design: GO, OKT, HE, AAS, IES
Data analysis and interpretation: GO, OKT, HE, AAS, IES
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References

1. Cosmetic Surgery National Data Bank Statistics. Aesthet Surg J. 2018;38(Suppl 3):1-24.
2. Phillips KA, Dufresne RG. Body dysmorphic disorder: a guide for dermatologists and cosmetic surgeons. Am J Clin Dermatol. 2000;1:235-43.
3. Oztürkcan S, Ermertcan AT, Eser E, Sahin MT. Cross-validation of the Turkish version of Dermatology Life Quality Index. Int J Dermatol. 2006;45:1300-7.
4. Aydemir Ö, Güvenir T, Küey L, Kültür S. Hastane Anksiyete ve Depresyon Ölçeği Türkçe Formunun geçerlilik ve güvenilirliği. Turk Psikiyatri Derg. 1977;8:280-7.
5. Doğan T, Sapmaz F, Totan T. Beden İmgesi Baş Etme Stratejileri Ölçeğinin Türkçe uyarlaması. Anadolu Psikiyatri Derg. 2010;12:121-9.

6. Köse S, Sayar K, Ak I, Aydın N, Kalelioğlu Ü, Kırpınar I, et al. Mizaç ve Karakter Envanteri (Türkçe TCI): geçerlik, güvenirliği ve faktör yapısı. Klin Psikofarmakol Bul. 2004;14:107-31.
7. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI): a simple practical measure for routine clinical use. Clin Exp Dermatol. 1994;19:210-6.
8. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand. 1983;67:361-70.
9. Cash TF, Santos MT, Williams EF. Coping with body-image threats and challenges: validation of the Body Image Coping Strategies Inventory. J Psychosom Res. 2005;58:190-9.
10. Cloninger CR, Przybeck TR, Svrakic DM, Wetzel RD. The Temperament and Character Inventory (TCI): a guide to its development and use. St. Louis (MO): Center for Psychobiology of Personality, Department of Psychiatry, Washington University School of Medicine; 1994.
11. Weathers FW, Blake DD, Schnurr PP, Kaloupek DG, Marx BP, Keane TM. The Life Events Checklist for DSM-5 (LEC-5), 2013, Available from: www.ptsd.va.gov.
12. Sadick NS. The impact of cosmetic interventions on quality of life. Dermatol Online J. 2008;14:2.
13. Hibler BP, Schwitzer J, Rossi AM. Assessing improvement of facial appearance and quality of life after minimally invasive cosmetic dermatology procedures using the FACE-Q scales. J Drugs Dermatol. 2016;15:62-7.
14. Dayan SH, Arkins JP, Patel AB, Gal TJ. A double-blind, randomized, placebo-controlled health-outcomes survey of the effect of botulinum toxin type A injections on quality of life and self-esteem. Dermatol Surg. 2010;36(Suppl 4):2088-97.
15. de Aquino MS, Haddad A, Ferreira LM. Assessment of quality of life in patients who underwent minimally invasive cosmetic procedures. Aesthetic Plast Surg. 2013;37:497-503.
16. Ribeiro F, Steiner D. Quality of life before and after cosmetic procedures on the face: a cross-sectional study in a public service. J Cosmet Dermatol. 2018;17:688-92.
17. Sobanko JF, Dai J, Gelfand JM, Sarwer DB, Percec I. Prospective cohort study investigating changes in body image, quality of life, and self-esteem following minimally invasive cosmetic procedures. Dermatol Surg. 2018;44:1121-8.
18. Scharschmidt D, Mirastschijski U, Preiss S, Brähler E, Fischer T, Borkenhagen A. Body image, personality traits, and quality of life in botulinum toxin A and dermal filler patients. Aesthetic Plast Surg. 2018;42:1119-25.
19. Celik MS, Celik C, Cepik N. Effect of isotretinoin treatment on sleep quality in acne vulgaris patients. Arch Dermatol Res. 2025;317(1):416.
20. Yazdandoost RY, Hayatbini N, Asgharnejad Farid AA, Gharaee B, Latifi NA. The body image dissatisfaction and psychological symptoms among invasive and minimally invasive aesthetic surgery patients. World J Plast Surg. 2016;5:148-53.
21. Özkur E, Kıvanç Altunay İ, Aydın Ç. Psychopathology among individuals seeking minimally invasive cosmetic procedures. J Cosmet Dermatol. 2020;19:939-45.
22. Loron AM, Ghaffari A, Poursafargholi N. Personality disorders among individuals seeking cosmetic botulinum toxin type A (BoNTA) injection: a cross-sectional study. Eurasian J Med. 2018;50:164-7.
23. Waldman A, Maisel A, Weil A, Iyengar S, Sacotte K, Lazaroff JM, et al. Patients believe that cosmetic procedures affect their quality of life: An interview study of patient-reported motivations. J Am Acad Dermatol. 2019;80(6):1671-81.

24. Finzi E. Update: botulinum toxin for depression: more than skin deep. Dermatol Surg. 2018;44:1363-5.
25. Yazdandoost RY, Hayatbini N, Fatemi MJ. Body image coping strategies among aesthetic surgery patients in Iran. World J Plast Surg. 2017;6:159-63.
26. Cash TF, Santos MT, Williams EF. Coping with body-image threats and challenges: validation of the Body Image Coping Strategies Inventory. J Psychosom Res. 2005;58:190-9.
27. Atiyeh B, Emsieh S, Chrabieh E, El Hachem T, Greige G, Chalhoub R, et al. Character and Personality Perception and Social Trait Judgment After Facial Surgical and Medical Aesthetic Interventions. Plast Reconstr Surg Glob Open. 2025;13(6):e6831.
28. Cloninger CR. A systematic method for clinical description and classification of personality variants: a proposal. Arch Gen Psychiatry. 1987;44:573-88.
29. Cloninger CR, Svrakic DM, Przybeck TR. A psychobiological model of temperament and character. Arch Gen Psychiatry. 1993;50:975-90.
30. De Fruyt F, Van De Wiele L, Van Heeringen C. Cloninger's psychobiological model of temperament and character and the five-factor model of personality. Pers Individ Dif. 2000;29:441-52.