

# Personality and Psychological Aspects of Cosmetic Surgery

Sanobar Golshani<sup>1</sup> · Arash Mani<sup>1</sup> · Shahin Toubaei<sup>1</sup> · Vahid Farnia<sup>2</sup> · Amir Ali Sepehry<sup>3</sup> · Mostafa Alikhani<sup>4</sup>



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## Abstract

**Background** In recent years, cosmetic surgery in Iran, which is provided almost entirely by the private sector, has gained popularity despite evidence of its potential risks. In most cases, cosmetic surgeries are done to increase self-satisfaction and self-esteem, thus seeking cosmetic surgery potentially shows an individual's psychological profile. Current evidence needs studies on the psychological profile of Asian cosmetic surgery patients. The present study investigates psychological profile and personality traits of people seeking cosmetic surgery in Iran.

**Methods** The present prospective observational study was conducted with a sample of 274 randomly selected persons seeking cosmetic surgery (rhinoplasty, blepharoplasty, face/jaw implant, mammoplasty, and liposuction). All participants completed the validated and reliable the Global Severity Index (GSI)—Symptom Checklist-90-Revised (SCL-90-R)—and the short Neuroticism-Extraversion-Openness Five-Factor Inventory (NEO-FFI).

**Results** The prevalence rate of psychiatric problems based on the GSI cut-off point (>63) of SCL-90-R was about 51 %, and interpersonal sensitivity and psychosis were the highest and lowest endorsed syndromes among the subjects, respectively. Openness had the lowest mean score; agreeableness and extroversion had the highest mean.

**Conclusion** The current study shows that understanding and psychological evaluation prior to surgery is necessary and screening can reduce the number of unnecessary surgeries and may enhance satisfaction with surgical results.

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**Keywords** Personality traits · Cosmetic surgery · Personality disorder · Body dimorphic disorder · Somatization

✉ Mostafa Alikhani  
m.alikhani18@yahoo.com

<sup>1</sup> Department of Psychiatry, Research Center for Psychiatry and Behavioral Sciences, Hafez Hospital, Shiraz University of Medical Sciences, Shiraz, Iran

<sup>2</sup> Department of Psychiatry, Substance Abuse Prevention Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>3</sup> College for Interdisciplinary Studies, Graduate Program in Neuroscience, University of British Columbia, Vancouver, BC, Canada

<sup>4</sup> Psychology Department Substance Abuse Prevention Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran

## Introduction

All human beings feel this inner desire for beauty. From as early as Alexandria and ancient Rome, people would perform surgeries to look beautiful. As the boundaries of the definition of “disease” grew larger among psychiatrists and intelligent people, they started to state that a person's physical imperfections would actually show their inner mental problems, and based on this, they concluded that if the way a person looks does not match certain criteria of beauty, he or she is, in fact, suffering from some kind of illness. This is where cosmetic surgeons played their role to

show the inner beauty of a person and thus treating these patients [1]. History of cosmetic surgery dates back to the early twentieth century. After World wars, it all started with reconstructive surgery of maxillofacial injuries [2]. Cosmetic surgery procedures are changing regularly and increasing rapidly, for instance, over 32,000 procedures were reported by just one cosmetic surgeon alone in 2007; this is three times more than in 2003 [3]. The majority of issues regarding the legality of these kinds of surgeries were put aside by the noble goal of showing the inner beauty of people and also some modern thoughts of a person's right to have a better look so nowadays cosmetic surgeries are completely legitimate [1].

The fascination with physical beauty is becoming ever more prevalent in today's society. Therefore, it is not surprising that year after year, millions of people elect to undergo cosmetic surgery [4]. Many people surgically alter their physical appearance with the intent of boosting their social and psychological well-being; however, the long-term effectiveness of aesthetic surgery on improving well-being is unconfirmed [5]. As the demand for elective cosmetic surgery continues to rise, it is important for health-care employees to recognize the motive behind seeking surgery [4].

There is a rather extensive literature regarding the psychological status of cosmetic surgery patients. However, meager evidence exists on the rate of psychopathology among this population. Investigations that have assessed cosmetic surgery patients by means of psychiatric interview have described 20–70 percent of patients as psychologically ill [6].

The psychological profile of people seeking cosmetic surgery is an informative landmark and is of high importance given that some studies find that more than 47 % of individuals seeking cosmetic surgery also have the likelihood of meeting diagnostic criteria for mental disorders [3]. It is speculated that because most cosmetic surgeries are done to increase self-satisfaction and self-esteem, seeking cosmetic surgery can show an individual's psychological profile [7]. In this vein, Zojaji designed a prospective study to assess the influence of a patient's personality on satisfaction with rhinoplasty. The personality aspects of 66 rhinoplasty candidates and 50 persons who served as controls were evaluated using the Minnesota Multiphasic Personality Inventory (MMPI) and another questionnaire based on a visual scale. They assessed the relationship between personality traits and rate of satisfaction. In this study, obsessiveness was the most frequently noted personality trait; being antisocial was the least mentioned; and the satisfaction rate of rhinoplasty was 55.1 %. Candidates with a "good faking" trait followed by those who were "depressed" had the highest satisfaction. They concluded that identification of patient's

personality can be a major factor influencing satisfaction with results after rhinoplasty [8].

Subsequently, a longitudinal comparison-controlled study examined a sample of 544 aesthetic surgery (surgery group) and 264 participants who showed interest in aesthetic surgery but did not undergo it (comparison group), for up to 12 months. Overall, the results were positive in terms of outcomes of receiving aesthetic surgery across areas, including anxiety, social phobia, depression, body dysmorphism, goal attainment, quality of life, life satisfaction, attractiveness, mental and physical health, well-being, self-efficacy, and self-esteem. Among those dissatisfied with a particular physical feature and considering aesthetic surgery, undergoing surgery appears to result in positive self-reported psychological changes [5]. Furthermore, following plastic surgeries of the face, symptoms of depression and self-esteem in females (but not in males) have improved [9]. In line with the global trend, the demand for cosmetic surgery is increasing in Asia. Despite this, very little research exists on the psychological profile of Asian cosmetic surgery candidates. This is problematic considering that the body image has a cultural and racial/ethnic context [10].

The Middle Eastern countries have a similar culture; thus, the results of the Iranian studies could be generalized to other countries of the region.

Because of the Islamic dress code for women in Iran, which dictates that only their faces can be exposed, rhinoplasty has seemingly become the most favorite plastic procedure in Iran. The increasing number of requests for rhinoplasty in the country leads to an elevated number of dissatisfied patients' post-surgery. Low socioeconomic status of the patients makes rhinoplasty a great financial and psychological burden [8].

Changes in the socio-cultural norms and expectations have resulted in a heightened interest in cosmetic surgery among men [11]. The most common surgical procedures requested by men include rhinoplasty and liposuction, with other popular procedures including reduction and reshaping of the male breast for gynecomastia, eyelid surgery or eyelifts (blepharoplasty), skin or fat reductions and "tummy tucks" (abdominoplasty), face lifts (rhytidectomy), Botox (Allergan, Inc., Irvine, CA), microdermabrasion, and hair replacements [13].

Because of the high prevalence of cosmetic surgery, specifically rhinoplasty, in Iran, studies to date have focused on evaluating personality disorders in the surgical candidates; thus, psychological profiling of these individuals has been missed. Current evidence shows a great need for studies on the psychological profile of Asian cosmetic surgery patients [14]. There is not a neat value on the number of people undergoing cosmetic surgery each year, but we think this should be around fourteen thousand

people. Comparing Iran to other countries such as the Far East and also some parts of Europe and the USA, we should say the number of people undergoing cosmetic surgery in Iran is relatively higher, considering the ratio between these people and the total population of Iran [15]. Salehahmadi designed one study to evaluate assorted factors that lead people to choose cosmetic surgery in Bushahr, a state in south of Iran. Results showed that the level of education, age, marital status, and gender were the major factors in making that decision, in the order they were mentioned. As for the socio-psychological factors, self-improvement, improving the chance of finding a better job, rivalry, media, health status, and depression, were the main factors. Cost risk was not shown to play a major role for them [16]. Another study realized how the accumulation of demographic, social, and psychological factors work together to lead a person to such surgeries. There was a significant difference between applicants and non-applicants of cosmetic surgery concerning the early maladaptive schemas ( $P = 0.02$ ,  $F = 3.34$ ). Results of a MANOVA test showed the difference between the two groups in terms of schemas disconnection/rejection ( $P = 0.002$ ,  $F = 12.19$ ), autonomy ( $P = 0.001$ ,  $F = 15.14$ ), impaired limits ( $P = 0.016$ ,  $F = 6.55$ ), and other-directedness ( $P = 0.003$ ,  $F = 10.79$ ), but there was no significant difference between the two groups of ear ringing. Also, there were significant differences between applicant and non-applicant groups in terms of public health ( $P = 0.04$ ,  $F = 5.05$ ). The two groups had significant difference in terms of physical status ( $P = 0.033$ ,  $F = 5.03$ ), depression ( $P = 0.001$ ,  $F = 14.92$ ), and anxiety ( $P = 0.009$ ,  $F = 8.01$ ), but the difference for social performance was not statistically significant. This study clearly showed early maladaptive schemas and general health problems of women applicants for cosmetic surgery; therefore, we recommend psychological care especially schema therapy before performing the surgery [17]. The majority of issues regarding the legality of these kinds of surgeries were put aside by the noble goal of showing the inner beauty of people, and also some modern thoughts of a person's right to look better so nowadays cosmetic surgeries are completely legitimate. Although in some very lawful systems and also Islamic countries, the duty of medicine is restricted to the method, in some special situations, the duty of medicine is to get to results. According to Iran's laws, the duty of medical procedures is to reach the perfect results which look quite rational. There has been a lot of research on the motivating factors for people to undergo cosmetic surgery, yet there are still many unanswered questions regarding the issue [1].

Therefore, the present study investigates the psychological profiles and personality traits of Iranian individuals seeking cosmetic surgery.

## Materials and Methods

A prospective study was conducted with a sample of 274 randomly selected individuals seeking cosmetic surgery (rhinoplasty, blepharoplasty, face/jaw implant, mammoplasty, and liposuction). The cohort was referred to multiple hospitals in Shiraz, Southern Iran, between March 2012 and August 2012. Among those referred to hospitals for cosmetic surgery, research volunteers were invited to complete the demographic questionnaire (e.g., age, gender, and history of cosmetic surgery) as well as psychological scales. The symptom Checklist-90-R (SCL-90-R) and Neuroticism-Extraversion-Openness-Five-Factor Personality Inventory (NEO-FFI) were used to gather information on the psychological profiles and personality traits of the research participants. Individuals were excluded when (A) age was lower than 18 years, (B) had acute mania, schizophrenia, or (C) history of cosmetic surgery to repair a true defect such as congenital malformations or corrective as the result of past surgery or suicidal ideation.

The SCL-90-R is a widely used and validated self-reported symptom inventory designed to capture psychological symptoms detected in psychiatric and medical patients. The primary form of this questionnaire has been designed by Derogatis, Lipman & Covi (1973). It has shown great test-retest reliability of 97 % and excellent validity, sensitivity, and specificity of 96, 94, and 98 % with the Iranian population, respectively, and it was indicated as a valid instrument for screening psychiatric disorders in epidemiological studies [18]. Each item of the questionnaire is rated by the patients on a five-point Likert scale from 0 (none) to 4 (extreme) for distress they have experienced during the previous week. The higher the score is suggestive of a greater distress level in the psychological problems. The questionnaire consists of nine psychological dimensions, i.e., anxiety, depression, hostility, interpersonal sensitivity, obsession compulsion, paranoia, phobic anxiety, psychoticism, and somatization. In our study, distress was categorized as somatization >11.5–20.6 equals sick and 20.6–48 equals extremely sick, depression >15.6–34.5 equals sick and 34.6–52 equals extremely sick, anxiety >10.6–24.5 equals sick and 25.6–40 equals extremely sick, interpersonal sensitivity >15.6–26.5 equals sick and 26.6–36 equals extremely sick, hostility >7.6–16.5 equals sick and 16.6–24 equals extremely sick, obsession/compulsion >12–26 equals sick and 27–40 equals extremely sick, phobia >13–20 equals sick and 21–28 equals extremely sick, paranoid >14–19 equals sick and 20–24 equals extremely sick, and psychosis >7–23 equals sick and 24–40 equals extremely sick [19].

The SCL-90-R also has three global indexes: the Global Severity Index (GSI) that assesses the extent or depth of the

individual psychiatric disturbance; the Positive Symptom Total (PST) that counts the number of questions rated above the cut-off point; and the Positive Symptom Distress Index (PSDI) that represents the intensity of symptoms. A GSI score equal to or above 63 is suggestive of psychological problems [20]. To investigate personality traits, the short form of NEO-FFI, designed by Kasta and Mackcera (1989) and including 60 questions, was used.

The NEO is a widely used psychological personality inventory that measures five personality traits: neuroticism, extraversion, openness, agreeableness, and conscientiousness. Each of the items is evaluated with 12 questions. The answering method to this questionnaire in this case is choosing an answer by subject in 5-grade multiple choices compatible scoring based on 0, 1, 2, 3, 4 and reversely. The minimum and maximum scores of each subscale are 0 and 48, with a Likert type scale. This questionnaire is appropriate for persons over 17 years old. Haghshenas and colleagues have validated the Iranian version of the NEO, where the coefficient alpha for the items of the scale ranges from 0.71 to 0.81, and the test–retest reliability coefficients were 0.53 and 0.73, respectively [21].

### Data Analysis

The patients' psychological dimensions were summarized by descriptive statistics (frequency and percentage). An independent sample *T* test was used to compare the mean differences between groups. All the statistical analyses were performed using the SPSS statistical software (v.20.0), and an alpha of 0.05 was considered statistically significant.

### Results

The present study was conducted on 274 persons (6 of the participants provided incomplete questionnaires, so they were omitted) admitted to plastic surgery wards and who were candidates for cosmetic surgeries with the mean age of 30 (SD = 8.39) and the range of 18–58 years. From the sample, 204 were females (74.5 %). The majority were single (60.2 %), and the remaining were either married (29.2 %), divorced (8.8 %), or widower (1.8 %). More than half of the sample was unemployed (55.8 %). The most prevalent level of education was high school diploma (46 %), and the less prevalent were masters and doctorate levels at 5.8 % and 5.1 %, respectively (Tables 1, 2, 3, 4, 5).

The most common surgery was rhinoplasty (62 %), and the less common was blepharoplasty (18 %). Some subjects (23.7 %) had a history of previous cosmetic operational surgery, but 76.3 % were seeking surgery for the first

**Table 1** Frequency of demographic factors

Variables	Prevalence (%)
Gender	
Male	25.5
Female	74.5
Marital status	
Single	60.2
Married	29.2
Divorced	8.8
Widow/widower	1.8
Employment	
Employed	43.8
Unemployed	55.8
Missing data	0.4
Educational status	
Primary education	10.2
College diploma	46.0
High school diploma	8.8
Bachelor's degree	24.1
Doctorate	5.8
M.A.	5.1
Residential status	
Urban	90.9
Rural	2.6
Missing data	6.6
Type of surgery	
Rhinoplasty	62.0
Blepharoplasty	6.6
Face implant	8.0
Mammoplasty	12.8
Liposuction	10.6
History of cosmetic surgery	
First time	76.3
Second time	17.5
Third time	5.5
Fourth time	0.7
History of psychiatry disease (MDD, BMD, OCD)	
Yes	9.9
No	90.1

*MDD* major depressive disorder, *BMD* bipolar mood disorder, *OCD* obsessive compulsive disorder

time. Nearly 90.1 % had no history of psychiatric disorders, and only 9.9 % of the patients had known psychiatric disorders (Depression, BMD, and OCD). The majority of the individuals were from an urban area (90.9 %), with only a small percentage coming from rural areas (2.6 %).

The most prevalent type of cosmetic surgery among men was rhinoplasty, face implant, and liposuction respectively, and there were no male candidates for mammoplasty or blepharoplasty. Based on the GSI cut-off score set a priori

**Table 2** Frequency of type of cosmetic surgery and gender difference in type of cosmetic surgery

Type of cosmetic surgery	Gender		Total
	Male	Female	
<b>Rhinoplasty</b>			
Count	64	106	170
Within type of surgery	37.6	62.4	100.0
Within gender (%)	91.4	52.0	62.0
<b>Blepharoplasty</b>			
Count	–	18	18
Within type of surgery	–	100.0	100.0
Within gender (%)	–	8.8	6.6
<b>Face implant</b>			
Count	3	19	22
Within type of surgery	13.6	84.4	100.0
Within gender (%)	4.3	9.3	8.0
<b>Mammoplasty</b>			
Count	–	35	35
Within type of surgery	–	100.0	100.0
Within gender (%)		17.2	12.8
<b>Liposuction</b>			
Count	3	26	29
Within type of surgery	10.3	89.7	100.0
Within gender (%)	4.3	12.7	10.6
<b>Total</b>			
Count	70	204	274
Within type of surgery	12.5	74.5	100.0
Within gender (%)	100.0	100.0	100.0

(GSI > 63), the prevalence rate of psychiatric problems was about 51 % among people who were candidates for cosmetic surgery. For the psychiatric symptoms' subscales, hostility (70 %), interpersonal sensitivity (40 %), and anxiety (50 %) were the most prevalent symptoms. Paranoia and psychosis had the lowest prevalence.

**Table 3** The mean and prevalence of psychological symptoms levels according to SCL-90-R

Psychological symptoms	Means	Severity of psychiatric problems <i>n</i> (%)			
		Normal	Borderline	Sick	Extremely sick
Somatization	4.66	170(62)	57(20.8)	43(15.7)	4(1.5)
Obsession/compulsion	4.66	176(64.2)	93(33.9)	4(1.5)	–
Interpersonal sensitivity	8.79	116(42.2)	109(39.8)	49(17.9)	–
Depression	7.83	159(58)	67(24.5)	48(17.5)	–
Anxiety	5/52	130(47.7)	132(48.2)	121(4.4)	–
Hostility	5.28	32(11.7)	201(73.4)	40(14.6)	1(0.4)
Phobia	4.94	169(61.7)	67(24.5)	38(13.9)	–
Paranoid	2.46	173(63.1)	100(36.5)	1(0.4)	–
Psychosis	3.87	137(50)	128(46.7)	8(2.9)	–

$P < 0/05$

Gender differences in subscales of SCL-90-R showed that just the mean of depression is different (Male;  $6.47 \pm 5.49$ , Female:  $8.30 \pm 6.33$ ;  $P$  value = 0.031), GSI (Male:  $55.58 \pm 27.06$ , Female:  $61.55 \pm 27.37$ ). Research findings show that subjects who were candidates for blepharoplasty and mammoplasty rather than other types of cosmetic surgery have significantly higher levels of psychiatric problems based on somatization, interpersonal sensitivity, depression, and anxiety.

In terms of history of cosmetic surgery, and undergoing surgery for the first time; subjects with a positive past history of cosmetic surgery had higher rates of psychiatric problems than those without.

Also, higher levels of somatization, depression, anxiety, and phobia were present for those who participated in cosmetic surgery for the first time. In terms of personality traits as assessed by NEO-FFI, the openness item had the lowest mean score in contrast to agreeableness and extroversion items (Nervousness  $19.97 \pm 4.94$ , Extroversion  $23.29 \pm 3.13$ , Openness  $6.80 \pm 4.07$ , Agreeableness  $23.86 \pm 3.29$ , and Conscientiousness  $19.17 \pm 3.88$ ). No significant difference was observed in NEO-FFI subscales based on the type of surgery.

Based on the history of psychiatric disorders, mean differences were significant in openness and extroversion among people who had a history of psychiatry illness. Furthermore, mean differences were significant in dimensions of nervousness and openness between the presence and absence of a history of cosmetic surgery.

## Discussion

In sum, the majority of participants were females, single, unemployed, with a high school degree, living in an urban area, who underwent cosmetic surgery for the first time and had no psychiatry diseases. In the present study, both

**Table 4** Comparing psychological symptom according to past history of cosmetic surgery and comparing psychological symptom according to type of cosmetic surgery

<i>F</i>	M(SD)	<i>N</i>	Type of surgery	Cohen's <i>D</i>	M(SD)	<i>N</i>	History	Symptoms
2.6	3.99(5.37)	170	Rhinoplasty	0.7	9.00(7.01)	65	Yes	Somatization
	4.44(5.41)	18	Blepharoplasty					
	6.36(7)	22	Face implant					
	7.02(6.89)	35	Mammoplasty					
	4.03(5.75)	29	Liposuction					
	4.60(5.83)	274	Total					
0.725	5.96(3.46)	170	Rhinoplasty	0.3	7.55(5.40)	65	Yes	Obsession/ Compulsion
	7.27(5.15)	18	Blepharoplasty					
	5.36(4.41)	22	Face implant					
	6.00(3.80)	35	Mammoplasty					
	6.31(3.79)	29	Liposuction					
	6.04(3.74)	274	Total					
3.72	7.88(5.47)	170	Rhinoplasty	0.7	12.92(6.03)	65	Yes	Interpersonal sensitivity
	10.00(5.91)	18	Blepharoplasty					
	9.22(6.9)	22	Face implant					
	11.88(6.42)	35	Mammoplasty					
	9.32(6.52)	29	Liposuction					
	8.79(5.98)	274	Total					
3.81	6.85(5.37)	170	Rhinoplasty	0.6	11.81(8.13)	65	Yes	Depression
	8.66(6.59)	18	Blepharoplasty					
	9.40(8.28)	22	Face implant					
	10.88(6.62)	35	Mammoplasty					
	8.20(6.77)	29	Liposuction					
	7.83(6.17)	274	Total					
2.3	5.14(2.94)	170	Rhinoplasty	0.7	8.11(4.34)	65	Yes	Anxiety
	5.77(3.33)	18	Blepharoplasty					
	6.13(4.94)	22	Face implant					
	6.80(2.76)	35	Mammoplasty					
	5.62(2.95)	29	Liposuction					
	5.52(3.18)	274	Total					
0.698	5.35(2.47)	170	Rhinoplasty	0.1	4.96(2.31)	65	Yes	Hostility
	5.38(2.47)	18	Blepharoplasty					
	4.50(2.28)	22	Face implant					
	5.20(2.04)	35	Mammoplasty					
	5.51(2.54)	29	Liposuction					
	5.28(2.41)	274	Total					
2.59	4.06(3.95)	170	Rhinoplasty	0.5	6.59(3.94)	65	Yes	Phobia
	4.38(3.85)	18	Blepharoplasty					
	5.18(4.97)	22	Face implant					
	6.24(4.67)	35	Mammoplasty					
	4.20(3.70)	29	Liposuction					
	4.49(4.15)	274	Total					
0.44	6.11(2.93)	170	Rhinoplasty	0.3	7.11(3.10)	65	Yes	Paranoid
	7.05(3.01)	18	Blepharoplasty					
	6.13(3.21)	22	Face implant					
	6.42(3.68)	35	Mammoplasty					
	6.41(3.34)	29	Liposuction					
	6.24(3.09)	274	Total					

**Table 4** continued

<i>F</i>	M(SD)	<i>N</i>	Type of surgery	Cohen's <i>D</i>	M(SD)	<i>N</i>	History	Symptoms
2.53	3.66(1.98)	170	Rhinoplasty	0.5	3.75(2.27)	65	Yes	Psychosis
	4.16(2.17)	18	Blepharoplasty					
	3.50(2.22)	22	Face implant					
	4.68(1.76)	35	Mammoplasty					
	4.27(1.94)	29	Liposuction					
3.87(2.00)	274	Total	0.8	73.07(27.57)	65	Yes	GSI	
					50.48(24.55)	209	No	

general psychological aspects and personality traits were examined in persons admitted at multiple hospitals and candidates for cosmetic surgery. Half of those seeking cosmetic surgery were at some degree of risk for psychiatric disorders. The prevalence rate of psychiatric problems based on the priori set cut-off score for GSI of SCL-90-R was about 51 %. In the psychiatric symptoms' subscales, hostility, interpersonal sensitivity, and anxiety were the most prevalent. Based on the last national survey (2013), the prevalence of psychiatric disorders in Iran is about 34 %, and the most common disorder is anxiety disorder with a 16 % prevalence rate [22].

An important main finding of our study was the low openness personality factor with high extraversion and agreeableness. The low openness, high extroversion, and agreeableness mean that these individuals tend to have friendly relationships and emotional activities. Low openness is associated with cautiousness.

Such a personality profile likely presents with narcissistic personality disorder, histrionic personality disorder, or obsessive/compulsive personality disorder. Consistent with our results, several studies showed that narcissistic personality disorder, histrionic personality disorder, and obsessive/compulsive personality disorders are the most common personality disorders in people seeking cosmetic surgery [23–25].

One study was to assess the mental health of patients admitted to internal medicine, surgery, and gynecology wards of the Hospital of Tehran in 2009, where the SCL-90-R questionnaire was administered to 93 patients. Using the validated GSI cut-off point of greater than 0.7, 58.1 percent of the patients showed different levels of psychiatric problems and symptoms; somatization had the highest prevalence (90.5 %) followed by depression (77.9 %) and anxiety (71.6 %) [19]. In the present study, interpersonal sensitivity and psychosis were the highest and lowest means among the subjects, respectively. These results were consistent with the previous study with patients admitted in internal medicine, surgery, and gynecology wards of the hospital of Tehran in 2009. Comparison between males and females in subscales of SCL-90-R

shows that just the mean of depression is different (Male:  $6.47 \pm 5.49$ , Female:  $8.30 \pm 6.33$ ); the depression score was higher in females than that in males ( $P = 0.031$ ). Consistent observation was made for GSI (Male:  $55.58 \pm 27.06$ , Female:  $61.55 \pm 27.37$ ), but no score difference reached statistical significance.

Evidence shows that among patients undergoing cosmetic surgery, the most prevalent psychiatric conditions are Body Dimorphic Disorder (BDD), narcissistic personality disorder, and histrionic personality disorder [25]. In these people, diagnoses of these disorders are difficult because they usually initially visit dermatologists or cosmetic surgeons rather than general practitioners, and thus, they are not readily referred to a psychiatrist or mental health workers [26]. In fact, one study showed that 46 % of the patients with BDD are referred to dermatologists and 38 % of them receive dermatologic treatment, rather than psychiatric or psychological intervention [27].

Actually, several studies have emphasized that cosmetic surgery is a treatment of disturbance with perception of the body image [28]. And there are emotional and psychosocial motivations beyond the request for cosmetic surgery.

Nowadays, the relationship between body image and the demand for cosmetic surgery has opened a new chapter in the area of psychological characteristics of people applying for cosmetic surgery. One study showed that the post-operative patient satisfaction was associated with significant distress related to body image in the pre-operative stage, in accordance with the degree of severity; cosmetic surgery had a positive effect on both the state of distress related to psychological well-being and that relating to body image, but, in the latter case, the betterment of distress depends on severity [29]. An accurate evaluation of body image and its disorders before surgery may identify the patients who may be dissatisfied by the outcome of the cosmetic surgery.

People with mental health problems often deny, or underestimate the side effects and risks associated of cosmetic surgery. In point of fact, several factors including disturbed body image, inferiority feeling, and social phobia can motivate the persons to proceed with cosmetic surgery. Hart and Hermes suggest that before surgery, these

**Table 5** Comparing NEO-FFI dimensions according to type of cosmetic surgery and comparing NEO-FFI dimensions according to past history of cosmetic surgery

	<i>N</i>	M(SD)	<i>F</i>	History	<i>N</i>	M(SD)	Cohen's <i>D</i>
<b>Nervousness</b>							
Rhinoplasty	170	20.19(4.93)	1.91	Yes	65	20.29(6.41)	0.06
Blepharoplasty	18	19.50(5.18)					
Face implant	22	21.20(5.82)					
Mammoplasty	35	18.57(4.42)		No	209	19.94(4.76)	
Liposuction	29	19.75(4.61)					
Total	274	19.97(4.94)					
<b>Extroversion</b>							
Rhinoplasty	170	23.31(3.008)	0.488	Yes	65	22.22(4.39)	0.32
Blepharoplasty	18	22.38(4.21)					
Face implant	22	23.31(3.66)					
Mammoplasty	35	23.41(2.53)		No	209	23.41(2.94)	
Liposuction	29	23.65(3.40)					
Total	274	23.29(3.13)					
<b>Openness</b>							
Rhinoplasty	170	6.13(3.59)	4.59	Yes	65	10.44(4.91)	0.92
Blepharoplasty	18	7.72(4.79)					
Face implant	22	7.68(4.91)					
Mammoplasty	35	9.08(4.33)		No	209	6.40(3.77)	
Liposuction	29	6.72(4.32)					
Total	274	6.72(4.32)					
<b>Agreeableness</b>							
Rhinoplasty	170	23.86(3.31)	1.49	Yes	65	22.98(3.64)	0.28
Blepharoplasty	18	23.72(2.76)					
Face implant	22	22.40(4.87)					
Mammoplasty	35	24.34(2.33)		No	209	23.95(3.24)	
Liposuction	29	24.43(2.88)					
Total	274	23.86(3.29)					
<b>Conscientiousness</b>							
Rhinoplasty	170	19.24(4.04)	0.522	Yes	65	17.45(3.54)	0.51
Blepharoplasty	18	19.05(3.84)					
Face implant	22	18.36(3.68)					
Mammoplasty	35	18.82(3.15)		No	209	19.35(3.88)	
Liposuction	29	19.81(4.06)					
Total	274	19.17(3.88)					

individuals should be screened for BDD because of the high prevalence and accompanied post-operative dissatisfaction, or personality disorders [30]. According to one study, 89.4 % of the cosmetic surgery candidates had family approval, while only 63.5 % had support from friends and partners [13]. Because of relational problems, they feel guilty.

Feeling guilty and unsuccessful relationships make them depressed. In the present study, interestingly, the prevalence of depression was about 42 %. Depressed people usually have faulty problem-solving approaches, for example, depressed persons handle difficult situations

emotionally, and their coping or problem-solving skills are not optimal. Emotional focus coping makes more problems and induces more depression, a vicious cycle. According to a study, it is arguable that physical complaints, body dimorphic problems, and ultimately cosmetic surgery can be caused by a depressed mood, and the way people react to the negative emotion is associated with depression [30].

Depressed persons present their own problems by their body. They seek attention by surgical procedures such as cosmetic surgery. Getting attention increases their self-esteem and self-confidence, but it does not last. On the other hand, because of feeling guilty (that arises from depressed



mood and low self-esteem), they unconsciously penalize themselves resulting in undergoing painful procedures such as multiple cosmetic surgeries. Depression presents as somatization and hostility. Therefore, to get more attention, immature behavior and irrational demands ensue. The presence of this behavior is maybe an acceptable justification for individuals with higher psychiatric problems seeking cosmetic surgery on several occasions. Nonetheless, one study expressed that there is a direct correlation between self-esteem and demand for cosmetic surgery, and that increased confidence will lead to reduced depression and improved coping skills. These seem to improve the self-concept and quality of life [25]. The current study confirms the findings by Swami and colleagues (2009) where a variety of psychological constructs such as self-esteem and self-assessment of attractiveness are evaluated by a five-personality factor inventory to predict the acceptance for cosmetic surgery [31].

Historically, male patients undergoing cosmetic surgery were considered to have more psychological difficulties and body dimorphic issues than their female counterparts. Plastic surgeons traditionally perceive males as more difficult than female patients, with more unrealistic expectations about surgical outcomes, greater levels of post-operative distress, and the absence of marked psychosocial improvement following surgery. For these reasons, plastic surgeons often minimize surgery on male patients [32]. And so this is why only 25 % of participants in our study were males and sought rhinoplasty, face implants, and liposuction.

## Limitations

This study provides new information on the psychological status of cosmetic surgery patients of Iran, but it has some limitations. An inherent limitation is the necessity of reliance on patient self-reporting. Many patients might be hesitant to disclose a mental health history or psychiatric medication use to a plastic surgeon out of embarrassment, cultural stigma, or fear that they will be denied treatment. Thus, it is possible that our sample consisted of those patients likely with psychiatric disorders other than depression (such as body dimorphic disorder, eating disorders, and substance abuse) that opted not to reveal this information because they were not directly questioned.

## Conclusion

Current evidence highlights the need for a better understanding and for psychological evaluation before surgery to reduce the number of unnecessary operational cosmetic

surgeries, which may enhance satisfaction with surgical results. However, a gap exists in the literature.

Future studies should include prospective replication of the present investigation, in which specific mental health histories, including duration of illness, medication dosage, and other treatments, are thoroughly assessed. The results also underscore the need for a study to determine the prevalence of psychopathology among patients presenting for cosmetic medical treatment. Also, they should compare the effects of surgery with the effects of a well-established psychotherapeutic approach to increase, for example, self-acceptance, meaning, spirituality, and connection for improving self-esteem, quality of life, and feelings of attractiveness. Such a study should use the SCID—an unbiased, structured clinical interview, in light of the newly updated DSM-V.

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## Compliance with Ethical Standards

**Conflict of interest** The authors have no conflicts of interest to disclose.

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