Psychopathology and Psychiatric Co-morbidities in Patients Seeking Rhinoplasty for Cosmetic Reasons

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ABSTRACT

Aim: *The purpose of the study was to examine psychopathological traits and psychiatric co-morbidities in seekers of cosmetic rhinoplasty.*

Subjects and Method: *Fifty persons seeking cosmetic rhinoplasty and 50 control subjects were admitted to the study. Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI) and Symptom Checklist – 90 [Revised] (SCL-90-R) were administered to people who requested cosmetic rhinoplasty and control subjects. All participants were also screened by the Structured Clinical Interview for DSM-IV-(SCID-I/CV, SCID-II).*

Results: *Thirteen cosmetic rhinoplasty seekers [CRS] (26%) and three control subjects (6%) had at least one psychiatric diagnosis. There was a significant difference between the two groups (*$p = 0.006$*). Beck depression inventory (*$p = 0.002$*) and BAI (*$p = 0.046$*) levels above the cut-off point were significantly higher in the CRS group than in the normal control. Somatoform disorders were statistically higher in the CRS than control group (*$p = 0.007$*). Nine CRS (18%) and two control subjects (4%) had at least one personality disorder. There were differences between the two groups (*$p = 0.025$*). The average of SCL-90-R was significantly higher in the CRS than in the control subjects (*$p < 0.001$*). The most prevalent somatoform disorders of the CRS were six with body dysmorphic disorder [BDD] (12%). The most prevalent personality disorders of the CRS were three with avoidant (6%) and three with narcissistic (6%) personality.*

Conclusion: *Assessment of detailed psychopathological aspects and psychiatric co-morbidities could help to define the clinical profile of people requesting cosmetic rhinoplasty in cosmetic surgery settings. Research into these factors may be important as it is essential to detect crucial problems such as personality disorders and BDD before surgery.*

Keywords: Body dysmorphic disorder, cosmetic rhinoplasty, personality disorder, psychiatric co-morbidities, psychopathological traits

Psicopatología y Comorbilidad Psiquiátrica en Pacientes que Buscan Rinoplastia por Razones Cosméticas

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RESUMEN

Objetivo: *El propósito del estudio fue examinar los rasgos psicopatológicos y las comorbilidades psiquiátricas en los solicitantes de rinoplastia cosmética.*

Sujetos y método: *Cincuenta personas que buscaban rinoplastia cosmética, y 50 sujetos de control fueron registrados en el estudio. El Inventario de Depresión de Beck (BDI), el Inventario de Ansiedad de Beck (BAI), y el Listado de Síntomas 90 (Revisado) (SCL 90), fueron aplicados a las personas que solicitaron rinoplastia cosmética y a los sujetos del control. Todos los participantes fueron también sometidos a tamizaje mediante la Entrevista Clínica Estructurada para DSM - IV-(SCID-/ CV, SCID-II).*

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Resultados: *Trece solicitantes de rinoplastia cosmética solicitantes (SRC) (26%) y tres sujetos de control (6%) tuvieron al menos un diagnóstico psiquiátrico. Hubo una diferencia significativa entre los dos grupos (*p = *0.006). Los niveles de BDI (p = 0,002) y BAI (*p = *0.046) por encima del valor límite, fueron significativamente más altos en el grupo de SRC que en el grupo control normal. Los trastornos somatoformes fueron estadísticamente más altos en el grupo SRC que en el grupo control (*p = *0.007). Nueve SRC (18%) y dos sujetos de control (4%) tenían al menos un trastorno de personalidad. Hubo diferencias entre los dos grupos (p = 0. 025). El promedio de SCL-90-R fue significativamente más alto en el grupo de SRC que en los sujetos del grupo control (*p < *0.001). Los trastornos somatoformes más prevalentes de SRC fueron seis con trastorno dismórfico corporal (TDC) (12%). Los trastornos de personalidad más prevalentes de SRC fueron: tres con trastorno de la personalidad por evitación (6%) y tres con personalidad narcisista (6%).*

Conclusión: *La evaluación de los aspectos psicopatológicos detallados y las comorbilidades psiquiátricas podrían ayudar a definir el perfil clínico de las personas que solicitan rinoplastia cosmética en los escenarios de cirugía cosmética. La investigación en estos factores puede ser importante, ya que es esencial para detectar problemas cruciales tales como los trastornos de personalidad y TDC antes de la cirugía.*

Palabras claves: Trastorno dismórfico corporal, rinoplastia cosmética, trastorno de la personalidad, comorbilidad psiquiátrica, rasgos psicopatológicos, comorbilidades psiquiátricas

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INTRODUCTON

Cosmetic surgery has become increasingly popular. In 2009, 12.5 million procedures were carried out in the United States of America (USA). This number includes both classical surgical methods (such as liposuction and rhinoplasty) making up about 1.5 million procedures, as well as new, non-surgical cosmetic procedures, good for nearly 11 million procedures (1).

Most people requested cosmetic surgical procedures to feel better psychologically. Although some long-term studies showed that such procedures indeed provided satisfaction, other studies showed that serious problems occurred for both the patient and the surgeon (2, 3). However, Morselli reported that many patients requesting rhinoplasty were affected by dysmorphopathy in the preoperative period, and found that 75% of patients presented with a psychiatric diagnosis according to the Statistical Manual of Mental Disorders, fourth edition [DSM-IV] (4).

It was reported that body dysmorphic disorder (BDD) and other psychiatric disorders were more common among individuals who desired rhinoplasty. These patients were unhappy with their prior rhinoplasty experience, and that the perception of a suboptimal result was both legitimate and real, even if the surgeon was not in agreement. It was also reported that all patients undergoing rhinoplasty had a personality trait abnormality; the satisfaction rate of rhinoplasty was 55.1% (5).

The purpose of this study was to examine psychopathological traits and psychiatric co-morbidities in seekers of cosmetic rhinoplasty.

SUBJECTS AND METHODS

Fifty individuals who requested cosmetic rhinoplastic surgery for the first time at the otorhinolaryngology outpatient unit of the Bagcilar Education and Research Hospital in Istanbul, Turkey were admitted to the study. Fifty control subjects matched for age and gender were randomly selected from persons who did not request cosmetic face surgery. Inclusion criteria were request for cosmetic rhinoplasty and consent for participation in the study. Exclusion criteria were presence of congenital diseases such as cleft palate or lip, history of facial trauma leading to deformities, presence of deformities in limbs and presence of prominent physical disease. None of the cases or controls had previous rhinoplasty.

The people who agreed to participate provided written informed consent after the study procedures had been fully explained. An experienced psychiatrist assessed the mental state of the people who requested cosmetic rhinoplasty and the control subjects. Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI) and Symptom Checklist–90 [Revised] (SCL-90-R) were administered to people who requested cosmetic rhinoplasty and control subjects. All participants were also screened by the Structured Clinical Interview for DSM-IV (SCID-I/CV, SCID-II).

Instruments

Beck Depression Inventory (BDI): This is a 21-item screening questionnaire comprising 13 cognitive and eight somatic questions used to screen for depression. The BDI has been well validated in diverse patient populations (6, 7).

Beck Anxiety Inventory (BAI): This is a 21-item screening questionnaire comprising 13 subjective and eight somatic questions used to screen for anxiety (8).

Symptom Checklist–90 [Revised] (SCL-90-R): Psychological aspects of the participants were evaluated by the SCL-90-R. It is a 90-item self-report symptom inventory designed to

reflect the psychological symptom patterns of community, medical and psychiatric respondents. The SCL-90-R assesses the following: anxiety, hostility, somatization, obsessive-compulsive, depression, paranoid ideation, interpersonal sensitivity, psychoticism and phobic anxiety as well as a supplement subscale. The SCL-90-R was used to evaluate the answers and the global severity index [GSI; a combined index for nine different psychometric measures built into the test] (9).

The Structured Clinical Interview for DSM-IV Axis I Disorders, *Clinical Version (SCID/CV):* This is a semi-structured interview developed by First and colleagues (10). This widely used interview serves as a diagnostic instrument for DSM-IV axis I psychiatric disorders.

The Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). This is a semi-structured interview also developed by First and colleagues (11), and serves as a diagnostic instrument for DSM-IV axis II personality disorders.

Statistical analysis

Parameters were reported as mean and standard deviation (SD); statistical testing of differences between groups was made by independent sample *t*-tests or Mann Whitney U test for quantitative data and by means of cross-table analysis (Pearson's χ^2 tests with Yate's correction or Fisher's exact test when appropriate) for dichotomous variables. Statistical tests were considered significant when the *p* value was less than 0.05 and nonsignificant (NS) when the value was higher than 0.05. Analysis was carried out using SPSS 11.0.

RESULTS

There were no age and sex differences between people requesting cosmetic rhinoplasty and control groups. The average age of the cosmetic rhinoplasty seekers (CRS) was 23.72 (SD = 4.75) years and control subjects was 23.80 years [SD = 4.80] ($p < 0.933$). There were 30 women and 20 men in the study group, and 30 women and 20 men in the control group. The most common educational level for both groups was high school (Table 1).

Thirteen of CRS group (26%) and three control subjects (6%) had at least one psychiatric diagnosis. There was a significant difference between the two groups ($p = 0.006$). The BDI ($p = 0.002$) and BAI ($p = 0.046$) levels were above the cut-off point and were significantly higher in the CRS group than in the normal controls. Somatoform disorders were statistically higher in the CRS group than in the control group ($p = 0.007$). Anxiety and mood disorders were not significantly different between the CRS and control groups. Nine of CRS (18%) and two of control subjects (4%) had at least one personality disorder. There was a difference between the two groups ($p = 0.025$) [Table 2].

Table 1: Sociodemographic characteristics of participants

	Patient		Control	
	n	%	n	%
Gender:				
Male	20	60	20	60
Female	30	40	30	40
Age groups:				
18–30 years	46	92	43	86
31–45 years	4	8	7	14
Martial status:				
Married	14	28	18	36
Unmarried	34	68	31	62
Separated	2	4	1	2
Education:				
Primary school	4	8	2	4
Middle school	7	14	8	16
High school	32	62	29	58
University	7	14	11	22
Occupation:				
Housewife	7	14	15	30
Civil servant	6	12	14	28
Tradesman	8	16	11	22
Student	15	30	7	14
Worker	2	4	0	0
Unemployed	12	24	3	6
Place of residence:				
Living in a city	40	80	42	84
Living in a countryside	10	20	8	16

Table 2: Assessment of psychiatric diagnosis and place of residence in with patients and control group

	Patient		Control		
	n	%	n	%	*p*
Place of residence					
Living in a city	40	80	42	84	0.603
Living in a countryside	10	20	8	16	$\chi^2 = 0.27$
BDI points					
Lower cut-off point	37	74	48	96	**0.002**
Upper cut-off point	13	26	2	4	$\chi^2 = 9.49$
BAI points					
Lower cut-off point	36	72	44	88	**0.046**
Upper cut-off point	14	28	6	12	$\chi^2 = 4$
Psychiatric diagnosis					
with	13	26	3	6	**0.006**
without	37	74	47	94	$\chi^2 = 7.44$
Anxiety disorders					
with	8	16	3	6	0.11
without	42	82	47	94	$\chi^2 = 2.55$
Mood disorders					
with	3	6	1	2	0.617
without	47	94	49	98	
Somatoform disorders					
with	9	18	1	2	**0.007**
without	41	82	49	98	$\chi^2 = 7.11$
Personality disorders					
with	9	18	2	4	**0.025**
without	41	82	48	96	$\chi^2 = 5.00$

BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory

Global severity index total scores were significantly higher in CRS than in control subjects ($p < 0.001$). Somatization ($p < 0.001$), obsessive-compulsive symptoms ($p < 0.01$), interpersonal sensitivity ($p < 0.01$), depression ($p < 0.01$), anxiety ($p < 0.01$), hostility ($p < 0.01$), paranoid ideation ($p < 0.01$) and psychoticism ($p < 0.01$) were common in the CRS group as well (Table 3).

Table 3: Assessment of SCL-90-R subscales and other variables in groups

SCL-90-R subscales and other variables	Patient	Control	*p*
GSI	0.74 ± 0.4	0.36 ± 0.25	
< 0.001			
Somatization	0.83 ± 0.56	0.35 ± 0.34	< 0.001
Obsessive-compulsive symptoms	0.83 ± 0.47	0.32 ± 0.29	< 0.001
Interpersonal sensitivity	1.07 ± 0.55	0.4 ± 0.31	< 0.001
Depression	0.74 ± 0.414	0.43 ± 0.24	< 0.001
Anxiety	0.84 ± 0.51	0.57 ± 0.48	< 0.001
Hostility	0.72 ± 0.57	0.38 ± 0.2	< 0.001
Phobic anxiety	0.6 ± 0.55	0.43 ± 0.35	> 0.05
Paranoid ideation	0.92 ± 0.54	0.16 ± 0.18	< 0.001
Psychoticism	0.42 ± 0.33	0.06 ± 0.09	< 0.001
Supplement subscale	0.52 ± 0.49	0.37 ± 0.36	> 0.05

GSI = global severity index; SCL-90-R = symptom checklist–90 (Revised)

Among the axis I disorders, somatoform disorders were higher in the CRS group than in the control subjects. The most prevalent somatoform disorders of the CRS were six with BDD (12%). The most prevalent personality disorders of the CRS were three with avoidant (6%) and three with narcissistic (6%) personality [Table 4].

DISCUSSSION

The present study explored the psychopathological conditions and the presence of psychiatric co-morbidities in people who requested cosmetic rhinoplasty. In some ways, the results of this study in a Turkish cohort were not consistent with previous research in Western societies which found that BDD and psychopathological traits were more prevalent in people who requested cosmetic rhinoplasty. Many studies focused in particular on BDD. It was reported that BDD was more common among individuals who desired rhinoplasty (2, 12–16). We made diagnoses according to DSM-IV criteria and DSM-IV-derived diagnostic tools. We found that 26% of patients requesting cosmetic rhinoplasty had at least one psychiatric diagnosis on screening using SCID-I/CV and SCID-II. Morselli reported that many patients requesting rhinoplasty were affected by psychiatric disorders in the preoperative period, and found that 75% of patients presented with a psychiatric diagnosis according to the DSM-IV (4). Some researchers reported that depression, anxiety and psychosomatic symptoms were not elevated in patients seeking rhinoplasty (17, 18). However, it was also reported that patients who requested rhinoplasty were found to have abnormal scores under the Minnesota Multiphasic Personality Inventory (MMPI) test, in particular high obsessiveness scores (19**)**. Some short-term follow-up studies determined significant improvement in psychiatric symptoms such as anxiety and neuroticism after rhinoplasty operations (20, 21).

When we compared both groups with SCL-90-R test, almost all psychopathological symptoms of the people requesting cosmetic rhinoplasty were higher than the control

Table 4: Axis I and axis II psychiatric diagnosis

	Psychiatric disorders		Rhinoplasty seekers (n = 50)	Control group (n = 50)
		Generalized anxiety disorder	2 (4%)	1 (2%)
		Social phobia	2 (4%)	1 (2%)
	Anxiety	Specific phobia	4 (8%)	1 (2%)
	disorders	Panic disorder	1 (2%)	1 (2%)
		Obsessive compulsive disorder	1 (2%)	0
Axis-I	Mood	Major depressive disorder	1 (2%)	0
	disorders	Dysthymic disorder	2 (4%)	1 (2%)
		Undifferentiated somatoform disorder	2 (4%)	1 (2%)
	Somatoform	Somatization disorder	1 (2%)	0
	disorders	Pain disorder	1 (2%)	0
		Body dysmorphic disorder	6 (12%)	0
		Avoidant personality disorder	3 (6%)	1 (2%)
Axis-II	Personality	Narcissistic personality	3 (6%)	0
	disorders	Obsessive-compulsive personality	2 (4%)	1 (2%)
		Dependent personality	1 (2%)	0
		Borderline Personality	2 (4%)	0
		Histrionic personality	1 (2%)	0

groups. The GSI level, which was designed to measure overall psychological distress, was also significantly higher. Using the BAI and BDI, depression and anxiety levels of people requesting cosmetic rhinoplasty were significantly higher than the control group. However, there was no statistical significance between the anxiety and mood disorders of people requesting cosmetic rhinoplasty and the control group, when we used SCID-I/CV. The most common conditions diagnosed with SCID-I/CV in patients requesting cosmetic rhinoplasty were somatoform disorders in our study. We also found BDD as a somatoform disorder in six (12%) people requesting cosmetic rhinoplasty. In a study, Veale *et al* (13) used a screening questionnaire for BDD and found that 20.7% of patients requesting rhinoplasty had a possible diagnosis of BDD. Picavet *et al* (22) also reported that 33% of patients showed at least moderate symptoms of BDD. However, researchers did not make diagnoses according to DSM-IV criteria and they did not use DSM-IV-derived diagnostic tools such as SCID in these studies.

Body dysmorphic disorder is observed along with serious clinical, occupational and social impairments (23). These patients obsessively develop ideas on their self-perception for hours, throughout the day. In addition to having an ugly body image, these beliefs can reach delusional levels (24). These patients frequently request cosmetic operations (25). Phillips *et al* (12) found that cosmetic treatments rarely improved BDD symptoms. Body dysmorphic disorder can be treated with psychotherapy, medication, or both. Cognitive behavioural therapy (CBT) and selective serotonin reuptake inhibitors (SSRIs) are effective in treating body dysmorphic disorder, and their combination is more effective than either alone (5).

We also found that 18% of patients requesting cosmetic rhinoplasty had at least one personality disorder diagnosis on screening SCID-II. The most prevalent personality disorders of the people requesting cosmetic rhinoplasty were avoidant and narcissistic personality. There is limited research about the personality characteristics of the patients requesting cosmetic rhinoplasty in the literature. In one study, authors investigated whether those subjects with BDD traits requesting cosmetic rhinoplasty differ from those without BDD traits in self-esteem, personality and quality of life (26). Fifty-four patients who requested cosmetic rhinoplasty were included in this study. Different subgroups of patients were identified. The first group included pessimistic, shy, insecure subjects, people with fragile and immature personality and poor self-esteem, individuals concerned about the way they look and those who spend more time thinking about it. The second group included more confident subjects with stronger personality and greater self-esteem. A third, less differentiated group, included more impulsive subjects who spend an intermediate amount of time thinking about the way they look. Rosenberg self-esteem scale, body dysmorphic disorder questionnaire (BDDQ) and temperament and character inventory (TCI) were used in that study (26). Patients should be carefully screened and assessed before cosmetic surgery interventions for pathological personality organizations and personality disorders to avoid frustration to both clinicians and patients.

These findings suggested that except for the mood and anxiety disorders, almost all psychopathological symptoms and psychiatric co-morbidities in people requesting cosmetic rhinoplasty were higher than in the control group. Preoperative assessment of detailed psychopathological aspects and psychiatric co-morbidities could help to define the clinical profile of people requesting cosmetic rhinoplasty in cosmetic surgery settings. Research into these factors may be important as it is essential to detect crucial problems such as personality disorders and BDD before surgery.

Limitations of this study were the relatively small sample size and cross-sectional nature. New studies involving larger number are required. This study was based on a preoperative evaluation. Postoperative follow-up studies are also required. Moreover, groups were not matched according to the size and shape of nose.

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