

The evaluation of patients applied for septorhinoplasty in terms of body perception, disability, depression and social phobia

© Beyza Gülmez¹, © Mehmet İhsan Gülmez², © Şemsettin Okuyucu², © Mustafa Arı³

¹ Hatay Training and Research Hospital Psychiatry Department, Hatay, Türkiye

² Hatay Mustafa Kemal University Faculty of Medicine Otorhinolaryngology Department, Hatay, Türkiye

³ Hatay Mustafa Kemal University Psychiatry Department, Hatay, Türkiye

Abstract

Objective: Psychiatric suitability is an important parameter that is evaluated together with anatomical suitability when deciding on rhinoplasty surgery. There is no matter how successful the treatment or surgery is, the results are not satisfactory for individuals with psychiatric symptoms. To make a broader assessment of psychiatric suitability, we aimed to evaluate body perception, disability, depression and social phobia in individuals who underwent for rhinoplasty surgery.

Method: In this study, patients who applied to the Mustafa Kemal University Hospital Otorhinolaryngology outpatient clinic between 1/1/2019 and 1/1/2020 were included. Among the patients, 50 volunteers who applied for complaints of dissatisfaction with the aesthetic appearance of the nose were included in the case group. In the control group, 50 patients who applied to the Otorhinolaryngology outpatient clinic, had any complaints other than nasal deformity and were not planning for any other aesthetic operation were included.

Results: There were no statistically significant differences in terms of body image, disability, depression and social phobia.

Conclusion: It has been confirmed that depression and body image do not show significant changes in patients who will undergo septorhinoplasty, and the information that disability and social phobia are not effective has been brought to the literature. Further studies with larger samples are needed on preoperative psychiatric evaluation.

Keywords: Septorhinoplasty, Body dysmorphic disorder, Depression, Body perception

INTRODUCTION

Aesthetic operations are surgical procedures that have become popular especially in recent years. The variety and number of applications of these procedures, which can be performed in every part of the body with different shapes and purposes, are increasing. According to the data of the American Society of Aesthetic Plastic Surgery, the number of patients who applied for aesthetic anxiety in 2018 and who underwent invasive procedures 1,5 million, noninvasive procedures 3,5 million, total were approximately 4.8 million (1). Among these operations, facial aesthetic surgeries, especially septorhinoplasty, are important. In 2018, septorhinoplasty was one of the most common surgical procedures applied to the head and neck region, with an increase of 6.6% compared to that in the previous year (1).

Physical attractiveness has been a highly valued human characteristic across cultures from the past to the present (2). Although it is accepted that the perception of beauty is subjective, studies show that physical attractiveness has common cultural value (3). Considering the importance of being attractive in society, it is not surprising that a person is unhappy about his or her appearance. However, if this dissatisfaction affects a person's psychological and social well-being, it can be considered pathological.

In addition to its respiratory function, the nose is also an important organ in terms of aesthetics since it is located in the midline of the face. It has an important place in the formation of personality perception. Every component of the face is important for overall facial harmony. Nevertheless, the nose, located in the middle of the face, greatly impacts the

Cite this article: Gülmez B, Gülmez Mİ, Okuyucu Ş, Arı M. The evaluation of patients applied for septorhinoplasty in terms of body perception, disability, depression and social phobia. Interdiscip Med J. 2024;15(51):20-26. <https://doi.org/10.17944/interdiscip.1306819>

Corresponding Author: Asst. Prof. Dr. Mehmet İhsan Gülmez, Hatay Mustafa Kemal University Faculty of Medicine Otorhinolaryngology Department, Hatay, Türkiye

Email: ihsangulmez@yahoo.com

ORCID id: 0000-0003-0462-6353

Received: May 30, 2023

Accepted: Feb 10, 2024

person's overall appearance through its position, shape, and size. Because physical appearance plays a major role in social life and interpersonal communication, it is better understood how important the shape and structure of the nose are (4).

While deciding on the feasibility of septorhinoplasty, another parameter that should be considered together with anatomical suitability is psychiatric suitability(5). With the increase in studies in this area, researchers have observed an increase in the number of people who apply for septorhinoplasty, as these procedures are not sufficient in terms of psychiatric suitability (6).

Body dysmorphic disorder, depression, psychosis and many other psychiatric clinical conditions may cause such a presentation and an unsatisfactory surgical outcome. When the surgical procedure is considered irreversible, the best approach is to detect and prevent such a negativity beforehand. There are many studies in the literature in which preoperative psychiatric evaluation is performed. While body image, depression and several other parameters were evaluated in most of these studies, disability and social phobia were not adequately evaluated. In this study, we aimed to evaluate body image, disability, depression and social phobia in people who underwent septorhinoplasty to perform a broader evaluation to determine psychiatric suitability.

METHOD

Patients who underwent surgery at the Mustafa Kemal University Hospital Otorhinolaryngology Department between 2019 and 2020, one year after the date of ethics committee approval, were included in this study in the preoperative period. By evaluating previous studies in the literature and taking into account the physical capacity of the otorhinolaryngology department, 58 patients were determined for the study. When the exclusion criteria were evaluated, 8 patients were excluded from the study. Among the patients, 33 men 17 women for a total of 50 volunteers, who applied for complaints of dissatisfaction with the aesthetic appearance of the nose included in the case group. In the control group, 33 men and 17 women, for a total of 50 patients, who presented at the Otorhinolaryngology outpatient clinic, had any complaints other than nasal deformity and were not scheduled for any other aesthetic operation were included. By choosing patients who were far from the idea of aesthetic surgery on the nose or any other part of the body in the control group, we aimed to reach the group that was as far away from the pathologies that may be rooted in aesthetic concerns, such as body perception, social phobia, depression, and disability, among the parameters we evaluated. Apart from these patients, being between the ages of 18 and 45 years, volunteering to participate in the study, signing the voluntary consent form, and being able to answer the applied tests were determined as inclusion criteria. The

presence of any psychiatric disease diagnosed, age younger than 18 and 45 years or older, mental retardation, metabolic or endocrine disorders that affect cognitive functions were excluded from the study. By including patients over the age of 18 within the inclusion criteria, we aimed to include patients who made their decisions with their free will to participate in the study. Patients older than forty-five years were included among the exclusion criteria to ensure group homogeneity due to anatomical differences from patients aged 18-45 years, where demand is common, and therefore different surgical results and expectations. Since the study included self-evaluation questionnaires, the exclusion criteria included having any psychiatric disorder that could affect this evaluation, mental retardation, or any metabolic or endocrine disease affecting cognitive functions. A total of 58 patients were included in the study group, and 8 patients who met the exclusion criteria were excluded from the study. The patients were asked to complete the study form, which consisted of a sociodemographic data form, the Beck Depression Scale,(7) the Body Image Scale (8), the Functioning Assessment Short Test (9), and the Liebowitz Social Phobia Symptoms Scale (10). Beck Depression Scale was developed by Beck et al. in 1961 and is used to evaluate the emotional, cognitive, somatic, and motivational symptoms observed in patients with depression(7). On this scale, the patient evaluates himself or herself. The purpose of the scale is to objectively determine the degree of depression symptoms in patients. It contains 21 items, and there are 4 options for each item. By summing the scores of the selected options, a depression score between 0 and 63 was obtained. The Beck Depression Scale is not used to diagnose depression but rather to objectively evaluate the degree of depression symptoms. Low scores on the scale indicate fewer depressive symptoms, and higher scores indicate more depressive symptoms. The body perception scale was developed by Secord and Jourard in 1953(8). It aims to measure how satisfied or dissatisfied people are with various parts of their bodies and various functions in their bodies. The scale consists of 40 items that question body parts or functions. Higher scores indicate higher satisfaction levels. The scale consists of 40 items, each related to an organ or part or function of the body. A score of 1 indicates the most negative situation, while maximum score of 5 indicates the most positive situation. A total of 40 questions were scored between 40 and 200. An increase in the total score obtained from the scale indicates that the satisfaction of the person with the body parts or function increases, and a decrease in the score indicates that the satisfaction decreases. The Functioning Assessment Short Test was developed by Rosa et al. to provide a rapid assessment of functionality (9). This scale is a 24-item scale and provides a four-point Likert-type evaluation. It consists of six dimensions: autonomy, occupational functioning, cognitive functioning, financial

matters, interpersonal relationships, and leisure activities. A high score indicates poor functionality. The Liebowitz Social Phobia Symptoms Scale is a Likert-type self-assessment scale developed to evaluate social relationships and performance situations in which individuals with social anxiety disorder exhibit fear or avoidance behavior. The severity of anxiety and avoidance that occurs in various social situations are also questioned. It contains two subscales, the first of which is aimed at measuring the level of anxiety experienced in social environments, and the second is aimed at measuring the severity of avoidance behavior. The self-administered scale consists of a total of 24 items, 11 of which are related to social relations and 13 of which are related to performance. An increase in the score indicates that social anxiety and avoidance are becoming more severe. The scale was developed by Liebowitz in 1987 (10). The study was approved by the Ethics Committee of Mustafa Kemal University Medical Faculty.

Statistical Analysis

The data of the study were evaluated through the SPSS “Statistical Package for Social Sciences (SPSS 23.0)” program. The data were calculated as the mean +/- standard deviation or percent (%). For the statistical analysis, the distributions of the groups were tested by Kolmogorov-Smirnov analysis. Nonparametric tests were used because the variables were not normally distributed ($p < 0.05$). The Mann-Whitney U test was used to evaluate differences between two independent nonnormally distributed groups from similar populations. Correlation analysis was performed to determine the direction and degree of relationships between variables, and the Spearman test was used since groups with nonnormal distribution were evaluated. At the 95% confidence interval for statistical significance, $p < 0.05$ was accepted.

RESULTS

Sociodemographic data

Of the 50 patients in the case group included in the study, 33 (66%) were male and 17 (34%) were female. The mean age of the patients, whose ages ranged from 18-45 years, was 28 ± 5.707 years. Of the 50 patients in the control group included in the study, 33 (66%) were male and 17 (34%) were female. The mean age of the patients, whose ages ranged from 18-45 years, was 27.54 ± 6.345 years. There is no statistically significant difference was observed between the two groups in terms of age and gender ($p = 0.362$). The sociodemographic data of the patients in the case and control groups are given in Table 1.

Applied scales

The Beck Depression Scale, Body Image Scale, Functioning Assessment Short Test and Liebowitz Social Phobia Symptoms Scale data applied to the case and control groups are given in

Table 2, Table 3, Table 4 and Table 5, respectively. Correlation analysis was performed by applying the Spearman test to evaluate the relationship between the scales used. Accordingly, moderate negative correlation was observed between the Beck Depression Scale score and the Body Image Scale ($p = 0.001$, $r = -0.452$). There was a positive moderate correlation between the Beck Depression Scale score and the Liebowitz Social Phobia Symptoms Scale ($p = 0.001$, $r = 0.457$) and between the Beck Depression Scale score and the Brief Functioning Assessment Scale ($p < 0.001^*$, $r = 0.544$). The detailed content evaluating the correlation between the applied scales is given in Table 6.

Table 1. Sociodemographic data of the case and control groups

	Gender				Mean Age
	Male		Female		
	n	%	n	%	
Case	33	66	17	34	28 ± 5.707
Control	33	66	17	34	27.54 ± 6.345
$p = 0.362$					

Table 2. Beck Depression Scale data

BDS	n	Mean	Median	Min-Max
Case	50	6.7 ± 5.560	6	0-23
Control	50	8.16 ± 4.278	9.50	0-15
$p = 0.065$				

Table 3. Body image scale data

BIS	n	Mean	Median	Min-Max
Case	50	158.72 ± 21.711	156.50	104-196
Control	50	153.30 ± 20.549	151.00	111-200
$p = 0.153$				

DISCUSSION

According to the data of the American Society of Aesthetic Plastic Surgery (ASAPS), the number of patients who applied for invasive or noninvasive procedures among patients who applied aesthetic expectations in 2018 was approximately 4.8 million (1). A comparison of this figure with the total number of applications in 1997 revealed that the number of cases increased by 2.5 times (11). These values numerically reflect the significant increase in the number of patients who applied aesthetic expectations.

Physical attractiveness has been a highly valued human characteristic across cultures from the past to the present (2). Although it is accepted that the perception of beauty is subjective, studies show that physical attractiveness has common cultural value (3). However, with increasing

Table 4. Functioning Assessment Short Test data

FAST		n	Mean	Median	Min-Max	p
Case	Autonomy		1.66±2.163	0.50	0-9	0.183
	Occupational Functioning		1.32±2.706	0	0-14	0.322
	Cognitive Functioning		2.44±2.296	2	0-9	0.707
	Financial Issues		1.06±1.766	0	0-6	0.481
	Interpersonal Relationship		1.50±2.501	0	0-8	0.137
	Leisure time		0.98±1.348	0	0-5	0.058
	Total	50	8.96±8.889	7.5	0-45	0.167
Control	Autonomy		0.94±1.300	0	0-5	0.183
	Occupational Functioning		1.96±2.185	1.5	0-7	0.322
	Cognitive Functioning		2.22±2.033	2	0-7	0.707
	Financial Issues		0.98±1.186	0	0-5	0.481
	Interpersonal Relationship		2.48±2.288	2	0-7	0.137
	Leisure time		1.36±1.191	2	0-4	0.058
	Total	50	9.94±6.594	11	0-22	0.167

globalization, common norms in physical attractiveness are emerging worldwide. The noticeable physical features of a popular person in a country can become the general beauty criterion of humanity through digital media, especially social media. In our study, the Beck Depression Scale was used to evaluate depression scores in patients who underwent septorhinoplasty. As indicated in Table 2, no statistically significant relationship was found between the values of the case and control groups according to the Beck Depression Scale data ($P=0.065$). Taziki et al. investigated 250 aesthetic rhinoplasty patients in terms of body dysmorphic disorder, self-esteem, and depression score and they evaluated depression score with the Beck Depression Scale. When he determined 13 as the cutoff point for the depression score, he found a high value at a rate of 42.2% (12). Bender et al. evaluated 201 rhinoplasty patients in terms of preoperative depression score and body dysmorphic disorder. The author, using the Beck Depression Scale, determined the rate of depression to be 1.7% and found that there was no statistically significant difference (13). Naraghi et al. evaluated the depression scores of patients who were scheduled for aesthetic and functional rhinoplasty surgery preoperatively (14). In the literature, many studies have shown statistically significant and nonsignificant relationships between the depression tendency and patients who requested septorhinoplasty. In our study, we also did not find a statistically significant relationship between the case and control groups regarding depression scores. This may have been caused by our sample size not being large enough. In addition, considering that the Beck Depression Scale is an assessment tool in which the patient evaluates himself, our case group may not have had the competence to analyze and report their situation. The significant and nonsignificant relationship results found between depression and beauty

perception found in other studies in the literature reveal the need for studies with larger samples and measurement tools that will define it in more detail.

Table 5. Liebowitz Social Phobia Symptoms Scale data

LSPSS		n	Mean	Median	Min-Max	p
Case	Fear		42.34±12.775	40.00	24-91	0.364
	Avoidance		39.42±8.896	39.00	24-59	0.926
	Total	50	81.76±19.220	82.50	48-121	0.555
Control	Fear		40.30±10.916	38.50	24-75	0.364
	Avoidance		40.54±10.708	38.00	24-72	0.926
	Total	50	80.84±21.013	77.50	48-147	0.555

Table 6. Correlations between the applied scales

		BDS	BIS	FAST	LSPSS
BDS	r	1.000	-0.452	0.544	0.457
	p		0.001*	<0.001*	0.001*
	n	50	50	50	50
BIS	r	-0.452	1.000	-0.412	-0.177
	p	0.001*		0.003*	0.219
	n	50	50	50	50
FAST	r	0.544	-0.412	1.000	0.179
	p	<0.001*	0.003		0.214
	n	50	50	50	50
LSPSS	r	0.457	-0.177	0.179	1.000
	p	0.001*	0.219	0.214	
	n	50	50	50	50

In her study, Ayaz reported that the body image of patients who underwent aesthetic surgery was significantly lower than that of patients who underwent reconstructive surgery (15). In their study, Amirhosein et al. compared patients who would undergo aesthetic rhinoplasty with patients who would undergo reconstructive surgery. Accordingly, patients who undergo aesthetic rhinoplasty have lower body perceptions and those diagnosed with body dysmorphic disorder are more common in this population (16). In their study, Samadzadeh et al. examined the relationship between mental health and body image in 100 female patients who underwent aesthetic rhinoplasty, both before and after the operation (17). When the patients' body image and mental health were compared before and after the operation, a statistically significant relationship was observed. In our study, no significant relationship was found between the body image of the patients who underwent septorhinoplasty and that of the control group.

Body perception is a complex entity that varies from person to person and is difficult to evaluate. Patients with impaired body perception generally tend not to report their complaints. In particular, young and male patients do not see their complaints as a psychological problem and do not want to report them, considering the possibility of feeling embarrassed and being humiliated by their close circle (18). This complex condition may not have been adequately evaluated with the body image assessment scale alone, or patients may have refrained from expressing their condition. We think that such a result may have emerged when all these situations were combined with our small sample size.

There are studies in the literature evaluating the depression score and body image of patients who will undergo aesthetic surgery. However, studies examining the disability and social phobia status of these patients are insufficient. In our study, when the patients who underwent septorhinoplasty were evaluated for disability and social phobia, no significant relationship was found between them and the control group.

Social phobia and disability can occur simultaneously with many psychiatric diseases. Severe disability can occur, especially in diseases such as body dysmorphic disorder (19). Again, social phobia is among the most common comorbidities in patients with body dysmorphic disorder, along with depression and obsessive-compulsive disorder (20,21). There are not enough studies in the literature to compare the results we found in our study on social phobia and disability. Moreover, evaluating these complex parameters with only the scales we use may not be sufficient. Considering the short follow-up period of the patients, we think that the results we obtained are valuable, but we believe that comprehensive and further studies are necessary.

Correlation analysis was performed by applying the Spearman test to evaluate the relationship between the scales used in our study. The results of evaluating the correlation between the scales applied are given in Table 6. There was a significant relationship between Beck Depression Scale scores and other scale scores, which is consistent with the literature. Liao et al. evaluated body dysmorphic disorder, social anxiety, and depressive symptoms in Chinese medical students. It was determined that social anxiety and depressive symptom levels were greater in participants with impaired body image (22). Aderka et al. studied body image in patients with social anxiety disorder, obsessive compulsive disorder and panic disorder. It was observed that the social anxiety levels of patients positively affect their perception of body image disorders and negatively affect their level of appearance evaluation (23). Ramseyer et al. reported that when women's body likes increase, their depression score decreases (24).

The fact that depressive symptoms are observed more frequently in individuals with impaired body image is consistent with the literature. Body dysmorphic disorder is a disease that can lead to severe disability (19). The negative correlation between the body image scale score and the Functioning Assessment Short Test score is consistent with this finding. As seen in the literature, a significant correlation was observed between depression tendency and body image, disability and social phobia in our study. As seen in our study and in the literature, the fact that the scales used have significant positive and negative correlations with each other can guide the evaluation of possible pathologies. A possible preoperative evaluation predicts that a patient with a distorted body image may also have depressive symptoms, and taking precautions in this regard and performing surgery after appropriate management can ensure that the patient obtains good results from the procedure.

The limited number of patients, the preference for the scales completed by the patients, and the limited postoperative follow-up period can be considered limiting factors of our study. Although there are many studies in the literature with a much smaller sample size than the number of patients in our study, statistically stronger values can be achieved with a larger sample size. More detailed and physician-centered scale evaluations of psychiatric examinations may enable us to reach more accurate results. Additionally, since none of the scales used are diagnostic, comprehensive studies in which patients are examined psychiatrically in more detail may provide clearer results.

CONCLUSION

In our study, when the patients who requested septorhinoplasty were compared with the control group, no statistically significant differences were found in terms of body image, disability, depression or social phobia. It

has been confirmed that depression score and body image do not significantly change in patients who will undergo septorhinoplasty, and the information that disability and social phobia are not effective has been provided in the literature. With these findings, patients who are candidates for aesthetic procedures such as septorhinoplasty can be evaluated in detail preoperatively and provided with satisfactory results. This initiative for the effective use of patient, physician, and shared resources will benefit everyone. However, further studies with larger samples are needed for preoperative psychiatric evaluation.

ACKNOWLEDGEMENT

Peer-Review

Both externally and internally peer reviewed.

Conflict of Interest

The authors declare that they have no conflict of interests regarding content of this article.

Financial Support

The Authors report no financial support regarding content of this article.

Ethical Declaration

Ethical permission was obtained from the Hatay Mustafa Kemal University, Medical Faculty Clinical / Human Research Ethics Committee for this study with date 30/11/2018 and number 2018/174, and Helsinki Declaration rules were followed to conduct this study.

Authorship Contributions

Concept: BG MA, Design: BG MiG, Supervising: BG MiG, Financing and equipment: BG MiG Data collection and entry: BG MiG, Analysis and interpretation: BG MiG ŞO, Literature search: BG MiG, Writing: BG MiG, Critical review: BG MiG ŞO MA.

Thesis

This study was prepared by rearrangement of the doctoral thesis by Dr. Beyza Gülmez, entitled as “Septorinoplasti talebiyle başvuran hastaların vücut algisi, yeti yitimi, depresyon ve sosyal fobi açısından değerlendirilmesi”.

REFERENCES

- American Society for Aesthetic Plastic Surgery. Cosmetic Surgery National Data Bank–2018 Statistics. 2018.
- Jones D. Physical Attractiveness and the Theory of Sexual Selection: Results From Five Populations. Museum of Anthropology Publications. 1996;90. <https://doi.org/10.3998/mpub.11394732>
- J S, KA K. Physical attractiveness: interpersonal and intrapersonal variability of assessments. Soc Biol. 1992;39:170-6. <https://doi.org/10.1080/19485565.1992.9988813>
- Hern J, Hamann J, Tostevin P, Rowe-Jones J, Hinton A. Assessing psychological morbidity in patients with nasal deformity using the CORE questionnaire. Clin Otolaryngol Allied Sci. 2002;27:359-64. <https://doi.org/10.1046/j.1365-2273.2002.00595.x>
- Mr F et al. Body dysmorphic disorder in aesthetic rhinoplasty candidates. Pak J Med Sci. 2013;29(1):197-200. <https://doi.org/10.12669/pjms.291.2733>
- Kopacheva-Barsova G, Nikolovski N, Arsova S KD. Psychological patient reactions after septorhinoplasty - our personal review. Open Access Maced J Med Sci. 2015;15(3(4)):635-9. <https://doi.org/10.3889/oamjms.2015.100>
- Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. Arch Gen Psych. 1961;4:53-63. <https://doi.org/10.1001/archpsyc.1961.01710120031004>
- Secord PE, Jourard S. The appraisal of body - cathexis: Body cathexis and the self. Journal of Consultive Psychology. 1953;17:343-7. <https://doi.org/10.1037/h0060689>
- Rosa AR, Sanchez-Moreno J, Martinez-Aran A. Validity and reliability of the Functioning Assessment Short Test (FAST) in bipolar disorder. Clinical Practice and Epidemiology in Mental Health. 2007;3:5. <https://doi.org/10.1186/1745-0179-3-5>
- Liebowitz MR. Social Phobia. Mod Probl Pharmacopsychiatry. 1987;22:141-73. <https://doi.org/10.1159/000414022>
- American Society for Aesthetic Plastic Surgery. Cosmetic Surgery National Data Bank-1997 Statistics. 1997.
- Taziki S, Saghafi S, Fathi ZN, Alishahi V, Roshandel G. Body Dysmorphic Disorder, Self-esteem and Depression in Cosmetic Rhinoplasty. European Psychiatry. 2015;30(1):466. [https://doi.org/10.1016/S0924-9338\(15\)30369-2](https://doi.org/10.1016/S0924-9338(15)30369-2)
- Bender M, Rustige L, Lindemann. Prevalence of depression and body dysmorphic disorder in patients before functional rhinosurgery. Laryngorhinootologie. 2014;93(11):764-7. <https://doi.org/10.1055/s-0034-1390476>
- Naraghi M, Atari M. A comparison of depression scores between aesthetic and functional rhinoplasty patients. Asian J Psychiatr. 2015;14:28-30. <https://doi.org/10.1016/j.ajp.2015.01.009>
- Ayaz S. Estetik ve Rekonstrüktif Cerrahi Hastalarında Beden Algısı. Turkish Medikal Journal. 2008;2:24–9.
- Hashemi SAG, Edalatnoor B, Edalatnoor B, Niksun O. A Comparison of Body Image Concern in Candidates for Rhinoplasty and Therapeutic Surgery. Electron Physician. 2017;9(9):5363-8. <https://doi.org/10.19082/5363>
- Samadzadeh M, Abbasib M, Shahbazzadegan B. Survey of Relationship between body image and mental health among applicants for rhinoplasty before and after surgery. Procedia Soc Behav Sci. 2011;30:2253-8. <https://doi.org/10.1016/j.sbspro.2011.10.440>
- Aşkın R. Vücut dismorfik bozukluğu. In: Köroğlu E, Güleç C, editors. Psikiyatri Temel Kitabı. 2nd ed. Ankara: Hekimler Yayın Birliği; 2007. p. 390–2.

19. Perihan, Ç R, Mehmet , E D, Lut T. Beden Dismorfik Bozukluğu. *Psikiyatride Güncel Yaklaşımlar-Current Approaches in Psychiatry*. 2012;4(4):547–65.
20. Nierenberg AA, Phillips KA, Petersen TJ, Kelly KE, Alpert JE, Worthington JJ. Body dysmorphic disorder in outpatients with major depression. *J Affect Disord*. 2002;69(1-3):141-8. [https://doi.org/10.1016/S0165-0327\(01\)00304-4](https://doi.org/10.1016/S0165-0327(01)00304-4)
21. Gunstad J, Phillips KA. Axis I comorbidity in body dysmorphic disorder. *Compr Psychiatry*. 2003;44(4):270-6. [https://doi.org/10.1016/S0010-440X\(03\)00088-9](https://doi.org/10.1016/S0010-440X(03)00088-9)
22. Liao Y, Knoesen NP, Deng Y, Tang J, Castle DJ, Bookun R, et al. Body dysmorphic disorder, social anxiety and depressive symptoms in Chinese medical students. *Soc Psychiatry Psychiatr Epidemiol*. 2009;45:963-71. <https://doi.org/10.1007/s00127-009-0139-9>
23. Aderka IM, Gutner CA, Lazarov A, Hermesh H, Hofmann SG, Marom S. Body image in social anxiety disorder, obsessive-compulsive disorder, and panic disorder. *Body Image*. 2014;11(1):51-6. <https://doi.org/10.1016/j.bodyim.2013.09.002>
24. Ramseyer V, M. GM, Cahill L, Jones A, Ward M. Body appreciation, anxiety, and depression among a racially diverse sample of women. *J Health Psychol*. 2019;24(11):1517-25. <https://doi.org/10.1177/1359105317728575>