Investigation of social appearance anxiety and self-esteem in individuals planned for aesthetic rhinoplasty

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Abstract. – **OBJECTIVE:** Recently, aesthetic rhinoplasty surgeries performed to change the external appearance have become increasingly common, especially among young people. This study examined the frequency of social appearance anxiety, self-esteem, and social media use in people with rhinoplasty surgeries for aesthetic concerns.

SUBJECTS AND METHODS: A total of 76 people, including 27 healthy controls and 49 aesthetic rhinoplasty planned cases, were included in the study. All participants were administered the sociodemographic data form, Social Appearance Anxiety Scale (SAAS), Rosenberg Self-Esteem Scale (RSE), and Bergen Social Media Addiction Scale (BMSAS).

RESULTS: The RSE score of the case group was significantly lower than the control group ($p<0.001$), and the SAAS ($p=0.004$) and BSMAS ($p=0.005$) scores were significantly higher. A significant negative correlation was observed between the RSE scale score, SAAS, and BMSAS. There was a significant positive relationship between SAAS and BSMAS. Cut-off values were determined using the ROC analysis. When the value of 1.41 was taken as the cut-off for RSE, 81.6% sensitivity and 74.1% specificity were found and were good predictors. When the value of 21 was taken as the cut-off for SAAS, 83.7% sensitivity and 51.9% specificity were found, and it was found to be a good predictor. When the value of 19 was taken as the cut-off for BSMAS, 42.9% sensitivity, and 88.9% specificity were found, and it was found to be a good predictor.

CONCLUSIONS: People who undergo aesthetic rhinoplasty have high social appearance anxiety and self-esteem and frequent use of social media. More extensive sample studies are needed to examine the effects of this situation on rhinoplasty.

Key Words:
  Rhinoplasty, Aesthetic rhinoplasty, Social appearance anxiety, Self-esteem.

Introduction

The rhinoplasty is one of the most performed surgeries all over the world. Rhinoplasty operations aim to correct anatomical deformities and regulate nasal functions by preserving cartilage and mucosal structures as much as possible. Aesthetic rhinoplasty, performed to change the external appearance even if there is no functional problem, is committed to giving the outward appearance of the nose the desired shape[1,2].

It is known that patients experience social appearance anxiety during nose surgeries performed for aesthetic purposes[3,4]. Colonial appearance anxiety is the anxiety people feel about other people's evaluation of their physical appearance, including features such as height, weight, muscle structure, skin color, and face shape[5] (nose, distance of the eyes, smile, etc.). Social appearance anxiety can also affect self-esteem[6]. Rosenberg defined the individual's positive and negative attitudes towards himself as self-esteem[7]. Self-esteem expresses the views and values attributed to the self, including personal feelings towards oneself[8]. Individuals with high self-esteem have positive thoughts about themselves and have a high capacity to cope with stress[9]. These people are successful in managing interpersonal relationships[10]. People with low self-esteem may prefer interacting in the virtual world rather than communicating in real life[11].

Individuals can exhibit authentic self-expression in the online realm, encountering a distinctive environment where positive reinforcement for their contributions may surpass that experienced in their offline interactions. This heightened online affirmation has the potential to elevate their self-esteem[12]. This situation may increase social media use and addiction[13,14].

Apart from research indicating a connection between taking selfies and opting for rhinoplasty[15],

there are also studies proposing that no substantiated evidence supports the notion that individuals desiring rhinoplasty are addicted to social media. This perception is considered a form of stigma[16].

We conducted a study to understand better the psychological state of individuals considering rhinoplasty, a popular cosmetic surgery option. Shauly et al[17] stated that most individuals interested in aesthetic rhinoplasty experience psychological problems, especially those suffering from depressive disorder, generalized anxiety disorder, or body dysmorphic disorder. They may seek aesthetic rhinoplasty to solve their perceived psychosocial issues[17]. Knowing why people prefer aesthetic rhinoplasty can also affect patient satisfaction after the operation. For this purpose, we examined whether people who like rhinoplasty due to aesthetic appearance have social appearance anxiety and the relationship between self-esteem and frequency of social media use.

Subjects and Methods

This study, initiated after receiving approval from the Firat University Ethics Committee (02.10.2023/18609), was conducted per the ethical standards specified in the Declaration of Helsinki. While calculating the study sample, the G*Power 3.1.9.2 program (Dusseldorf, Germany) was used, and the study by Shahidi et al[18] was taken as a reference. Accordingly, it was determined that at least 54 patients, with at least 27 rhinoplasties planned and 27 healthy controls, should be reached with a 95% confidence interval and 95% power. The case group included 56 people who applied to the ear, throat, and nose clinic of Elazig Fethi Sekin City Hospital and were diagnosed with rhinoplasty surgery that met the study criteria. The healthy control group comprised 32 healthy people who came to Elazig Fethi Sekin City Hospital for regular annual check-ups and had no medical problems. The participants were evaluated by an ear, nose, and throat doctor, and then structured interviews according to DSM-5 were conducted by a psychiatrist, lasting approximately 30 minutes. After the signed written consent of all participants was obtained, the Sociodemographic and Clinical Data Form, Social Appearance Anxiety Scale, Bergen Social Media Addiction Scale, and Rosenberg Self-Esteem Scale were filled in. Illiterate participants who had a hearing or speech impairment, or had a history of alcohol or substance use in the last six months, were under 18 years of age, had a scar visible at a direct glance in the head and neck area, had a facial anomaly, or had a saddle nose deformity were not included to the study. Patients with nasal axis deviation, prominent ear deformity, body mass index not within normal limits, diagnosed psychiatric disease, and patients using psychiatric medication were excluded. Seven patients were excluded from the rhinoplasty study due to incomplete scale questions, and five healthy patients withdrew.

Scales Used in the Study

Sociodemographic and Ctlinical Data Form: This is a semi-structured form prepared by the researchers. It contains sociodemographic information about the participants, such as age, gender, place of residence, economic status, and clinical data, such as disease duration and other accompanying diseases.

Social Appearance Anxiety Scale (SAAS)

It is a 16-item, 5-point Likert-type self-report scale developed to measure the emotional, cognitive, and behavioral concerns experienced by the individual regarding their appearance[5]. High scores on the scale indicate high social appearance anxiety. In this study, the Cronbach alpha reliability coefficient of the scale was calculated as 0.90 for the entire scale.

Rosenberg Self-Esteem Scale (RSE)

It has 12 subscales of 63 items developed by Morris Rosenberg in 1965[7].

Subscales can be used separately in research if desired. The self-esteem subscale is a 4-point Likert-type scale comprising ten questions; five were reverse coded. An increase in the score obtained from the scale indicates a decrease in self-esteem. In this study, the Cronbach alpha reliability coefficient of the scale was calculated as 0.68 for the entire scale.

Statistical Analysis

Analyzes were evaluated in SPSS 22 package programs (Statistical Package for Social Sciences; IBM Corp., Armonk, NY, USA). The study shows descriptive data as n and % values in categorical data and mean±standard deviation (Mean±SD) values in continuous data. Chi-square analysis (Pearson Chi-square) was applied to compare categorical variables between groups. The suitability of constant variables for normal distribution was evaluated with the Kolmogorov-Smirnov test. In comparing binary groups, the student t-test was used for variables with normal distribution, and

the Mann-Whitney U test was used for variables that did not show normal distribution. In examining the relationship between continuous variables, the Pearson correlation test was used for those with normal distribution, and the Spearman correlation test was used for those with non-normal distribution. Receiver operating characteristic (ROC) curves were drawn to measure the value of the scale scores in rhinoplasty. The statistical significance level was accepted as $p<0.05$.

Results

There was no significant difference between the groups ($p=0.786$). The average age of those in the case group was 34.4±11.2 years, and those in the control group were 31.5±8.2 years, and no significant difference was detected between them ($p=0.421$). The RSE score of the case group was significantly lower than the control group ($p<0.001$), and the SAAS ($p=0.004$) and BSMAS ($p=0.005$) scores were significantly higher (Table I).

A significant negative correlation was observed between the Rosenberg self-esteem scale score and social appearance anxiety and the Bergen social media addiction scale. There is an essential positive relationship between SAAS and BSMAS (Table II).

The ability of various values to predict the decision to undergo rhinoplasty surgery was investigated by ROC analysis, and cut-off values were determined. When the value of 1.41 was taken as the cut-off for RSE, 81.6% sensitivity and 74.1% specificity were found and were good predictors. When the value of 21 was taken as the cut-off for SAAS, 83.7% sensitivity and 51.9% specificity were found, and it was found to be a good predictor. When the value of 19 was taken as the cut-off for BSMAS, 42.9% sensitivity and 88.9% specificity were found, and it was a good predictor (Table III, Figure 1).

Discussion

In this study, we observed that people who undergo aesthetic rhinoplasty have higher social ap-

Table I. Comparison of all features by groups.

		Study Group		Control		
		N	%	N	%	P*
Sex	Female	33	67.3	19	70.4	0.786
	Male	16	32.7	8	29.6	
Age, Mean±SD		34.4±11.2		31.5±8.2		0.421**
Marital status	Single	21	42.9	12	44.4	0.894
	Married	28	57.1	15	55.6	
Educational background	Primary education	11	22.4	3	11.1	0.461
	High school	21	42.9	14	51.9	
	University	17	34.7	10	37.0	
Residential area	Rural	6	12.2	3	11.1	0.884
	City	43	87.8	24	88.9	
Economic situation	Middle	35	71.4	18	66.7	0.665
	High	14	28.6	9	33.3	
Working status	Working	28	57.1	20	74.1	0.143
	Not working	21	42.9	7	25.9	
Alcohol	Yes	19	38.8	11	40.7	0.867
	No	30	61.2	16	59.3	
Cigarette	Yes	21	42.9	15	55.6	0.289
	No	28	57.1	12	44.4	
Family history of psychiatric treatment	Yes	3	6.1	2	7.4	0.829
	No	46	93.9	25	92.6	
RSE, Mean±SD		1.0±0.7		2.0±0.9		**<0.001****
SAAS, Mean±SD		37.5±16.6		28.1±15.4		**0.004****
BSMAS, Mean±SD		17.3±6.7		13.0±5.4		**0.005*** **

*Chi-Square Test, **Mann-Whitney U test, ***Student's *t*-test- RSE: Rosenberg Self-Esteem Scale; SAAS: Social Appearance Anxiety Scale; BSMAS: Bergen Social Media Addiction Scale.

Table II. ROC analysis result of scale scores according to rhinoplasty surgery status.

	RSE	SAAS	BSMAS
Break point	≤1.41	>21	>19
Sensitivity	81.6%	83.7%	42.9%
Specificity	74.1%	51.9%	88.9%
Positive predictive value	85.1%	75.9%	87.5%
Negative predictive value	69%	63.6%	46.2%
AUC (area under the curve)	0.805	0.702	0.689
AUC 95% confidence interval	0.698-0.887	0.586-0.802	0.572-0.790
AUC *p*-value	<0.001	0.002	0.002

ROC: Receiver operating characteristic; RSE: Rosenberg Self-Esteem Scale; SAAS: Social Appearance Anxiety Scale; BSMAS: Bergen Social Media Addiction Scale.

pearance anxiety and self-esteem, and social media use is more frequent than the control group.

Our observations revealed a positive correlation between increased levels of self-esteem and heightened concerns about colonial appearance, along with greater engagement in social media usage.

Beyond the physical state and self-perception, an individual's appearance encompasses various facets. The remarks made by others can influence a person's communication, productivity, and social acceptance. In the context of rhinoplasty, aesthetic considerations hold significance, emphasizing the patient's perception of their own body and their level of self-assurance[19-21]. In 121 cases of nose surgery for aesthetic purposes, it was shown that these people had social appearance anxiety[22]. Studies[23] indicate that although

Table III. Correlation of scale scores in the patient group.

		RSE	SAAS
SAAS	r	-.363	
	p	.001	
BSMAS	r	-.470	.319
	p	.000	.005

RSE: Rosenberg Self-Esteem Scale; SAAS: Social Appearance Anxiety Scale; BSMAS: Bergen Social Media Addiction Scale.

nasal deformity causes social anxiety, it does not decrease self-confidence. Self-esteem is affected not only by appearance but also by various psychological factors. Cingi et al[24] evaluated patients who underwent aesthetic rhinoplasty in the preoperative and postoperative periods and
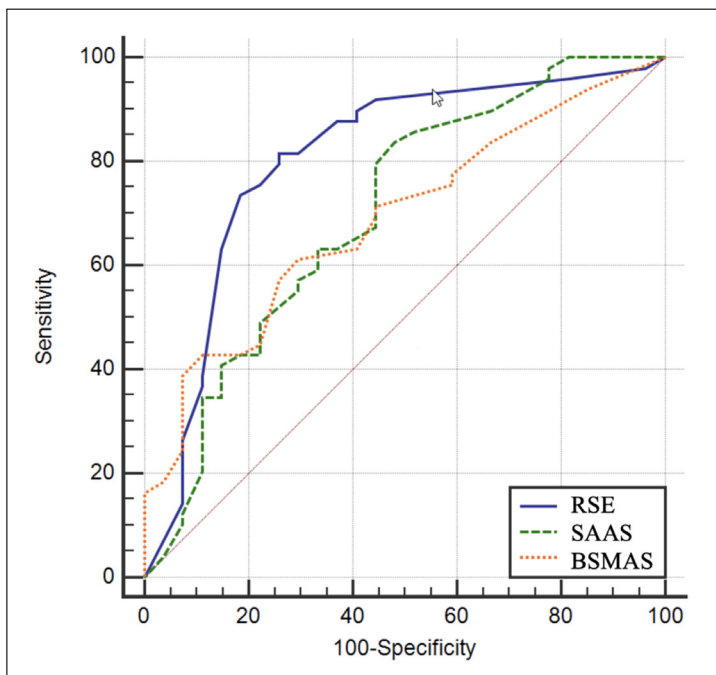

Figure 1. ROC Curve of scale scores for aesthetic rhinoplasty.

showed that nose surgeries positively affected the person's mental state and self-esteem[24]. Some studies[25] have shown that rhinoplasty improves mental, emotional, and functional health by enhancing a person's appearance. Kam et al[26] concluded that plastic surgery improves body image, but disagreement continues regarding its effects on self-esteem, anxiety, and depression[26]. In another study[27], the self-esteem of patients who underwent rhinoplasty was not different from that of the healthy control group.

We found that those planning aesthetic rhinoplasty were self-conscious about their looks in social situations but had higher self-esteem than the healthy control group. This means that people's self-confidence may be unaffected by their aesthetic worries regarding their nose, regardless of how much they worry about their appearance. It is estimated that it would be appropriate to evaluate rhinoplasty surgeries in the postoperative period to examine whether they positively affect self-esteem.

Research[28] has shown that frequent use of social media can lead to unrealistic body image ideals and significant concern about appearance[15]. People who have undergone plastic surgery are more prone to social media addiction[29].

As social appearance anxiety increases, self-esteem decreases[30]. Gurok et al[31] found a positive correlation between body image and self-esteem in patients who underwent aesthetic rhinoplasty. We observed a significant negative correlation between the Rosenberg self-esteem scale score and social appearance anxiety. This suggests that this may be due to the increased self-confidence of having decided and planned nose surgery. According to the ROC analysis, RSE, SAAS, and BSMAS scales can be used to recognize the mental states of aesthetic rhinoplasty patients.

We can count the cross-sectional evaluation of the cases as a limitation of our study. People with poor self-esteem are planning cosmetic rhinoplasty because they are anxious about how they seem in social situations. Social media plays a role in these individuals' preference for plastic surgery, or at least in their search for surgeons and hospitals that offer this procedure. An excellent psychological understanding of the person undergoing rhinoplasty also likely affects their satisfaction with recovery. Evaluating people undergoing aesthetic rhinoplasty by psychiatrists and ear, nose, and throat physicians regarding factors such as body perception, self-esteem, and social media addiction will increase the patient's quality of life.

Conclusions

People who undergo aesthetic rhinoplasty have high social appearance anxiety and self-esteem and frequent use of social media. More extensive sample studies are needed to examine the effects of this situation on rhinoplasty.

Subjects planning aesthetic rhinoplasty were self-conscious about their looks in social situations but had higher self-esteem than the healthy control group. This means that people's self-confidence may be unaffected by their aesthetic worries regarding their noses, regardless of how much they worry about their appearance.

Authors' Contributions
Y. S. S. Yildirim and S. Yildiz: planning, designing, literature survey, data collection, active intellectual support.

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Availability of Data and Materials
All data for this study is presented in this paper.

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