

# Effect of rhinoplasty on changing body images in candidates for surgery

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## ABSTRACT

**Background:** According to statistics, the number of rhinoplasty applicants is increasing. Rhinoplasty is performed to improve the nose shape fit into the face. **Objective:** The main objective of this study was to determine the effect of rhinoplasty on changing body images in rhinoplasty candidates. **Methods:** The statistical population of the present prospective study, including those referring to the Otorhinolaryngology Clinic of Rafsanjan University of Medical Sciences (Iran) with complaints of dissatisfaction with the appearance of the nose and demand for rhinoplasty, completed Body Image Concern (BIC) Inventory and Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) before and 6 months after surgery at the clinic. Data were analysed using SPSS software version 16 using Mann-Whitney U and Wilcoxon tests at a significance level of 0.05. **Results:** In total, 95 subjects were examined, of which 85 (89.5%) were women and 57 (60%) were single. There was no difference in the mean scores of BIC and Y-BOCS between women and men as well as between single and married subjects ( $p < 0.05$ ). The Wilcoxon test results showed that the mean score of post-operative Y-BOCS was significantly increased in the rhinoplasty subjects ( $p < 0.001$ ). Moreover, the mean score of post-operative BIC was significantly decreased in the rhinoplasty subjects ( $p < 0.001$ ). **Conclusions:** The results of this study demonstrated that the rhinoplasty could improve the body image status and increase the obsessive thoughts and actions in an individual. Therefore, psychological primary care for avoiding pointless surgical plan and pre-operative psychological counselling, is suggested to examine the individual's psychological status and to assess the individual's expectations of surgery along with the necessary explanations.

**Keywords:** Body image, obsession, rhinoplasty

## Introduction

### Background

Rhinoplasty is the most common cosmetic surgery around the world. This is also true about Iran, and many people are turning to this cosmetic surgery. The goal of rhinoplasty is to achieve the desired and satisfactory image of the nose, face, and body.<sup>[1]</sup> Reducing or increasing the size of the nose, re-shaping the bridge and tip of the nose, narrowing the nostrils, and changing the

angle of the nose are some of the major goals of rhinoplasty.<sup>[2,3]</sup> In general, the goal of rhinoplasty is to correct and re-construct the nose.<sup>[3,4]</sup> Making nicer beautiful, achieving a more attractive face, improving the appearance, getting marital life successfully, gaining more self confidence in social encounters, and getting satisfaction with the family and friends are some of the major causes that lead people to this surgery.<sup>[5]</sup>

The interaction and coherence of psychological and physical factors, especially in the field of cosmetic surgeries, has further considered by researchers in recent years.<sup>[6,7]</sup> Rankin and Lee have shown that the use of cosmetic surgery increases with decreasing self-confidence and aging and that the cosmetic surgery improves the quality of life.<sup>[8,9]</sup> Baykal revealed that

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candidates for rhinoplasty had higher levels of body deformity.<sup>[10]</sup> In this regard, both patients and surgeons expect an increase in self-confidence with an improvement in appearance and a decrease in social anxiety. In general, the quality of life is also expected to be improved with changes in appearance and beauty.<sup>[11]</sup> Satisfaction with rhinoplasty is significantly related to self-esteem, body images, and life satisfaction. If people have optimistic insight about surgery, they will see the nose more beautiful after surgery. Here, it is worth mentioning that individual satisfaction is not a result of surgery but a feedback from the psychological assessment. Psychological evaluations in people who undergo rhinoplasty do not relate to objective deformity. Patients' satisfaction after rhinoplasty is related to their expectation of beauty more than that related to their cosmetic surgery.<sup>[12]</sup> Some scholars have shown that psychological causes play a major role in the tendency toward cosmetic surgery.<sup>[13,14]</sup> In this regard, Bauman says, "a significant number of rhinoplasty applicants are dissatisfied with rhinoplasty".<sup>[15]</sup> Sarwer concluded that young women with cosmetic surgery were more sad compared to middle-aged women and had more mental involvement with their body.<sup>[16]</sup>

The body image is one of the most important psychological structures that may be effective in rhinoplasty. The body image refers to the perception of one's mind about his/her body. The body image has two dimensions of perception and attitude. The body image perception involves how to see the size, shape, weight, face, movement, and actions, whereas the body image attitude relates to how a person feels about these features and how these feelings guide behaviour.<sup>[17]</sup> The body image can be affected by factors such as physical growth and individual interactions with the social environment, accidents, and physical injuries and creates a body image concern of the person.<sup>[18]</sup> The results of a study by Baumann indicated that improvement in the body image was observed 6 months after cosmetic surgery.<sup>[15]</sup> Frederick examined the issues of cosmetic surgery, body images, and attitudes of American men and women over their lifetime and concluded that those interested in cosmetic surgery had a weaker body image than those who were not interested in this surgery.<sup>[19]</sup>

Psychology primary care is the psychological information and moral codes to common physical and mental health problems.<sup>[20]</sup> The body image when the patient has a high level of stress is a psychological disorder.<sup>[21]</sup> The body image can be important in deciding whether to perform cosmetic surgery. Therefore, the present study was conducted to investigate the effect of rhinoplasty on the body image in candidates for rhinoplasty. The results of this study can help physicians to approve psychological health in primary care.

## Methods

The statistical population of the present prospective study included those referring to the Otorhinolaryngology Clinic of Rafsanjan University of Medical Sciences (Iran) with complaints of dissatisfaction with the appearance of the nose and demand

for rhinoplasty. All rhinoplasty applicants (n = 95) referred to a specialized clinic entered the study with the census method. Inclusion criteria were at least an educational level of a secondary school, an age range of 18–50 years, and no history of mental illness. Exclusion criteria were a history of facial burns or injuries and non-voluntary cosmetic surgery.<sup>[22]</sup> All participants signed an informed consent and obtained the study information. They were requested to complete the checklist including demographic characteristics, such as age, sex, and marital status, and study questionnaires within half an hour. The questionnaires included Body Image Concern (BIC) Inventory and the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS).

Scoring is based on the 5-point Likert scale from never = 1 to always = 5. Therefore, the scores of the questionnaire will be between 19 and 95.<sup>[23]</sup>

Moreover, the study benefited from the Y-BOCS, including 39 items about obsessive-compulsive thoughts and 25 items about obsessive-compulsive behaviours. The scale has 10 articles, including five articles for the evaluation of obsessive-compulsive thoughts and five articles for the evaluation of obsessive-compulsive behaviours, and each article is scored with a 5-point Likert scale from 0 (no symptom) to 4 (very severe).<sup>[24]</sup>

The questionnaires were distributed and completed in the clinic or hospital before surgery. It should be noted that the same surgeon performed the surgical procedures for all these people. Subsequently, the subjects re-completed the questionnaire 6 months after surgery following the elimination of swelling, ecchymosis, respiratory problems, and other surgical problems.

To analyse the data, the hypotheses of inferential statistics were considered for the body image and obsessive-compulsive disorder. Distribution of scores was not normal. Therefore, non-parametric Mann-Whitney U and Wilcoxon tests were performed using SPSS software version 16 at a significance level of 0.05.

## Results

In total, 95 patients were examined, of which 85 (89.5%) were women and 10 (10.5%) were men. Also, 38 (40%) were married and 57 (60%) were single. The mean age was  $31.60 \pm 5.97$  years for males and  $27.86 \pm 4.92$  years for females. The difference in age between men and women was not significant ( $p = 0.059$ ). The mean age of married people was  $32.68 \pm 3.70$  years, significantly higher than the mean age of single individuals ( $25.30 \pm 3.61$  years) ( $p = 0.001$ ). The Mann-Whitney U test showed that the mean BIC score was  $59.5 \pm 13.89$  for men and  $57.56 \pm 12.56$  for women, and this difference was not significant ( $p = 0.731$ ). In addition, there was no significant difference in the mean BIC score between married and single subjects ( $p = 0.933$ ) [Table 1].

The mean Y-BOCS score was  $25.40 \pm 5.21$  for men and  $27.96 \pm 4.84$  for women; this difference was not significant ( $p = 0.087$ ). In addition, there was no significant difference in the mean Y-BOCS score between married and single individuals ( $p = 0.117$ ) [Table 2].

The Wilcoxon test results showed that the mean score of post-operative BIC was significantly decreased in the rhinoplasty subjects ( $p < 0.001$ ). Moreover, the mean score of post-operative Y-BOCS was significantly increased in the rhinoplasty subjects ( $p < 0.001$ ) [Table 3].

## Discussion

The mean age of subjects under rhinoplasty was 28.25 years. This was in line with the findings of a number of researchers who stated that young people are more likely to be candidates for cosmetic surgery, especially rhinoplasty. In fact, the age of onset of sensitivity and concern about having a beautiful appearance usually begins in late adolescence and early adulthood.<sup>[25]</sup> The results of our study showed that 89.5% of rhinoplasty subjects were female. Kazemy *et al.* and Ishigooka *et al.*<sup>[26,27]</sup> confirmed the results of the study. Because making deep changes in appearance in women is more acceptable than in men and is a feminine characteristic culturally, this attribute justifies the wider population of female candidates for rhinoplasty. The motivation of women to focus on cosmetic surgeries can be classified into

two broad categories of personal motivation and extra-personal motivation. The personal motivations are classified into micro-level analysis, and the extra-personal motivations are classified into intermediate- and macro-level analysis according to the status and circumstances of individuals. Family and family conditions in the intermediate-level analysis and social conditions in the macro-level analysis are effectively the source of motivation for performing cosmetic surgery, which are different in terms of the situation. In the personal motivation, which somehow goes back to the individual, the interviewees mentioned several reasons. Some people have recognized beauty as the most important motivation for surgery. Earning self-confidence, change and diversity, and excellence are some other personal motivations for cosmetic surgery. Some believed that cosmetic surgery has led to high self-confidence, courage and ability to speak, and a great influence on social communication and relationships with the opposite sex.<sup>[27]</sup>

In the present study, 60% of rhinoplasty candidates were single. This finding was consistent with reports by researchers such as Hossein Zadeh and *et al.*<sup>[22]</sup> Hossein Zadeh stated that because the nose has a great influence on the beauty of the face, this issue could be very important in choosing a spouse from the perspective of the participants in their study. The girls participating in their study believed that rhinoplasty and resulting beauty not only increased beauty but also increased the number of suitors than before the surgery.

**Table 1: Body image scores in subjects under rhinoplasty based on sex and marital status**

Sex and marital status	Body image	Z	P
Men (n=10)	59.13±5.89	-0.34	0.731
Women (n=85)	57.12±56.56		
Married (n=38)	58.12±18.78	-0.084	0.933
Single (n=57)	58.12±02.68		

The Mann-Whitney U test was used to data analysis. Data presented by Mean±SD.  $P \leq 0.05$  were considered statistically significant

**Table 2: Y-BOCS in subjects under rhinoplasty based on sex and marital status**

Group	Y-BOCS	Z	P
Men (n=10)	25.5±40.21	-1.714	0.087
Women (n=85)	27.4±96.84		
Married (n=38)	27.4±08.83	-1.57	0.117
Single (n=57)	28.4±10.96		

The Mann-Whitney U test was used for data analysis. Data presented by mean±SD.  $P \leq 0.05$  were considered statistically significant. Note: Y-BOCS

**Table 3: Comparison of scores of the body image and obsessive-compulsive disorder in the rhinoplasty patients before and after surgery**

	Before surgery	After surgery	Wilcoxon test	
			P	Z
Body image	58.08±12.64	54.08±12.64	<0.001	-9.75
OCD	27.69±4.91	28.75±5.05	<0.001	-4.58

The Wilcoxon test was used for data analysis. Data presented by mean±SD.  $P \leq 0.05$  were considered statistically significant. Note: Obsessive-compulsive disorder (OCD)

The findings of this study indicated that rhinoplasty had a positive effect on the body image of the individuals and their body image had changed positively. Rhinoplasty, in other words, improved their body image. Rhinoplasty has played an important role in improving the person's body image and has resulted in individuals obtaining a more favourable and satisfying image of their nose and body. The results of this study are consistent with other studies in this field where improvement of appearance after surgery is associated with increasing self-confidence and reducing social anxiety, hostility, and suspicion.<sup>[28]</sup>

The results of this study showed that the mean Y-BOCS score of subjects undergoing rhinoplasty showed a significant increase after surgery. Body image disorder occurs at the level of obsessive-compulsive disorder and related disorders, including excessive attention to minor damage in appearance, resulting in excessive agitation.<sup>[29]</sup> Various studies have found an almost high (approximately 30%) co-morbidity between obsessive-compulsive and body image disorders so that two disorders are thought to be similar in terms of demographic characteristics and duration of illness.<sup>[30]</sup> Research has shown that both disorders are related to family and genetic components.<sup>[31]</sup> In addition, both disorders are consistent in terms of cognitive patterns, continuous and disturbed automatic thoughts, and behavioural patterns such as compulsive checking and the fact that symptoms of body image impairment are prevalent among patients with obsessive-compulsive disorder.<sup>[32]</sup> In this study, the mean Y-BOCS score increased after surgery, although the obsessive-compulsive disorder criteria were

evaluated clinically, neither before nor after surgery. This study showed that although the body image was improved after surgery, the surgery can increase obsessive actions or thoughts, which indicates anxiety caused by individual expectations and what was ideal for itself. A few studies have shown that obsessive actions or thoughts were higher in rhinoplasty candidates who had inadequate satisfaction with their appearance.<sup>[33,34]</sup>

## Conclusions

The results of this study demonstrated that rhinoplasty could improve the body image status and increase the obsessive thoughts and actions in an individual. Therefore, psychological primary care is important and pre-operative psychological counselling is suggested to examine the individual's psychological status and to assess the individual's expectations of surgery along with the necessary explanations.

## Limitations and Suggestions

In this study, the psychological status of an individual was not investigated for important constructs such as anxiety, depression, level of expectations, and self-esteem. It is suggested to evaluate the self-esteem as one of the most important factors affecting the body image along with the anxiety of rhinoplasty candidates in future studies.

## Summary of Key Points

There were more women volunteering for rhinoplasty than men.

Single cases were higher than married cases.

The body image was lower after rhinoplasty.

Obsessive-compulsive disorder was higher after rhinoplasty.

Psychological consult is an important method for rhinoplasty candidates.

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## Ethical approval

Rafsanjan University of Medical Sciences ethical committee has approved this article by following code: IR.RUMS.REC.1395.73.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and

due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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