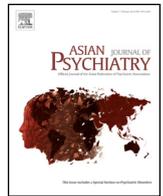




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## A comparison of depression scores between aesthetic and functional rhinoplasty patients

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### ABSTRACT

Depression is a mood state of sadness, gloom, and pessimistic ideation with loss of interest or pleasure in normal activities. This mood disorder has been reported to occur more frequently among cosmetic surgery patients. The purpose of the current study was to compare the score of depression among aesthetic rhinoplasty candidates and functional rhinoplasty patients as control group. The Beck Depression Inventory (BDI) and Depression (DE) subscale of Symptom Check List-90-Revised (SCL-90-R) were administered on a sample of aesthetic rhinoplasty patients ( $n = 21$ ) as well as a sample of functional rhinoplasty patients ( $n = 21$ ). Those with both cosmetic and functional purposes were categorized regarding their primary objective. Questionnaires were given to patients preoperatively. Cohen's  $d$  was also calculated as a measure of Effect Size (ES). BDI and SCL-90-R-DE scores were analyzed using  $t$ -test for independent groups. Statistical analyses suggested that the mean BDI and SCL-90-R-DE scores of aesthetic surgery patients were significantly higher than those of functional surgery patients ( $P < 0.05$ ). The results showed that age, sex, and Socio-Economic Status (SES) were not significantly different between the two groups as they can be capable of influencing the depression score. Effect size was above the moderate level:  $d = 0.51$ ,  $d = 0.72$  for BDI and SCL-90-R-DE, respectively. Using two different depression instruments, the findings of this study showed that aesthetic rhinoplasty patients were more depressed in comparison with functional rhinoplasty patients. The measures of ES also supported the hypothesis that aesthetic rhinoplasty candidates had higher scores in depression.

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### 1. Introduction

Aesthetic rhinoplasty refers to a type of plastic surgery, which is performed on the nose for aesthetic purposes. On the other hand, functional rhinoplasty is a surgical procedure in order for reconstruction or overcoming a functional nasal disorder. Aesthetic rhinoplasty is one of the most common cosmetic operations worldwide. Moreover, it has gained momentum in the past 2 decades considering the advances in this medical field and the increase in ideal images projected in the media (Haiken, 1997).

Ideal images from mainstream media, increased popularity of cosmetic procedures, the emphasis on bodily appearance, and psychological motivations have had a role in the current increase in aesthetic rhinoplasty (Barahmand et al., 2010). It has been suggested that psychological aspects of aesthetic surgeries have a central role clinically (Wildgoose et al., 2013).

Remarkably little is known about either the psychological status of persons who seek cosmetic surgery or potential psychological changes that may occur after surgery. Most people seeking cosmetic surgery procedures appear to be psychologically healthy; however some are not and for these individuals cosmetic procedures may have a negative outcome, creating problems for both patient and surgeon (Sarwer, 1997).

Preoperative psychological distress in the form of anxiety and depression tends to be more common than physical complications in aesthetic surgery patients and more common in those with preoperative psychological symptoms (Borah et al., 1999). Some

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psychopathological characteristics have been studied within cosmetic surgery seekers. Body Dysmorphic Disorder (BDD) is recognized to be one of the most prevalent disorders within this population (Veale et al., 1996). Some studies have found evidence that preoccupation with the nose is the most common complaint in BDD, making cosmetic rhinoplasty the most common surgical correction sought by patients with BDD (Andretto Amodeo, 2007; Crerand et al., 2005).

Meyer et al. (1960) found that 16 out of 30 patients who sought rhinoplasty had psychological problems. In a more recent study (Piomchai et al., 2011), rhinoplasty candidates had higher scores of anxiety, insomnia, social dysfunction, depression, and somatic symptoms. Various studies indicate that body image of aesthetic rhinoplasty candidates are significantly lower than those of control group (Mowlawi et al., 2000; Khajeddin and Izadi Mazidi, 2013).

In this respect, recognition of patients with psychological problems, which may result in an unfavourable post-operative outcome, is essential (Honigman et al., 2004). Problems encountered by patients can lead to requests for repeated procedures, depression, adjustment problems, social isolation, familial dysfunction, self-destructive behaviours, and anger towards the surgeon (Goin and Rees, 1991).

The purpose of the present study was to compare the depression scores between aesthetic rhinoplasty candidates and functional rhinoplasty patients using two distinct instruments. It was hypothesized that aesthetic rhinoplasty patients had higher scores of depression in comparison with functional rhinoplasty patients as the control group.

## 2. Methods

### 2.1. Participants

A total of 42 patients (28 females and 14 males) were recruited for this study using convenience sampling method. Approval from the ethics committee of Rhinology Research Society and informed consents were obtained. All participants had been scheduled for surgery in winter of 2012. Twenty-one patients who required functional nasal surgery were recruited as the control group while 21 cases of aesthetic rhinoplasty were included into the study. Those with functional and aesthetic purposes ( $n = 7$ ) were categorized regarding their primary objective.

### 2.2. Measures

#### 2.2.1. Demographics

A questionnaire including information about patient's age, sex, marital status, educational background, and subjective Socio-Economic Status (SES) was developed as demographic questionnaire.

#### 2.2.2. BDI

This 21-item self-report scale assesses the severity of affective, cognitive, motivational, vegetative, and psychomotor components of depression. The BDI has stable psychometric properties, and there is strong evidence that scores on the measure are reliable and valid (Beck et al., 1988). Thus, the BDI is widely used in clinical research (Beck et al., 1996). The aesthetic and functional groups completed the BDI in the present study. Its Cronbach's alpha in the present study was 0.91.

#### 2.2.3. SCL-90-R

This is a well-known self-report instrument to assess the psychological symptoms. It consists of 90 items defined in nine symptom dimensions (Derogatis, 1983). Its depression subscale (hereby named SCL-90-R-DE) was utilized in this study. The items

in the questionnaire are scored on a five-point Likert scale, indicating the rate of occurrence of the symptom during the time reference. In this study, Cronbach's alpha of depression subscale was 0.87.

### 2.3. Procedure

All participants from both groups completed the questionnaires preoperatively. Informed consent letters were also collected before administration of tests.

### 2.4. Statistical analysis

Data entry and analysis were performed in a blinded fashion by personnel who were not involved in the process of data collection. All tests were 1-tailed due to the hypothesis and  $P < 0.05$  was considered significant. Additionally, Levene's test was performed for assessment of equality of variances. Moreover, Cohen's  $d$  was calculated as a measure of effect size in order to overcome the problems concerning sample size and statistical significance. Statistical analyses was performed using SPSS<sup>®</sup> 21 software.

## 3. Results

Twenty-one patients seeking aesthetic rhinoplasty and 21 patients seeking functional rhinoplasty participated in this study. Mean age in functional rhinoplasty group was 27.48 (SD = 10.40) and that of aesthetic rhinoplasty group was 25.57 (SD = 7.06). No significant difference was observed between means ( $P > 0.05$ ). Demographic information of patients is summarized in Table 1.

Using  $t$ -test for independent groups, the analysis of the data demonstrated that the mean BDI and SCL-90-R scores in aesthetic surgery group were significantly higher than that of the functional surgery group ( $P < 0.05$ ). Age, sex, Socio-Economic Status (SES), and educational backgrounds were analyzed and no significant relationship was found between the two groups ( $P > 0.05$ ). Moreover, the Levene's test for equality of variances was not significant ( $P > 0.05$ ). Independent  $t$ -test details for two utilized instruments are presented in Table 2.

## 4. Discussion

The primary objective of the present study was to evaluate depressive symptoms between aesthetic rhinoplasty seekers and

**Table 1**  
Demographics.

	Aesthetic rhinoplasty patients	Functional rhinoplasty patients
N (%)	21 (50%)	21 (50%)
Mean age	25.57	27.48
Gender		
Male	5	9
Female	16	12
Marital status		
Single	11	14
Married	9	6
Separated	1	1
Educational level		
Low	9	8
Medium	11	12
High	1	1
Socio-economic status		
Low	2	3
Medium	15	15
High	4	3

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