

## Satisfied After Nose Job? A Peep into Rhinoplasty Clients' Psychology and Possibility of Underlying Body Dysmorphic Disorder

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Received: November 22, 2017; Published: February 12, 2018

### Abstract

Compared to other cosmetic procedures, rhinoplasty has a relatively crucial patient satisfaction rate due to the difficulty of the procedure and potentially unrealistic patient expectations. Moreover, role of underlying psychological predicaments like Body Dysmorphic Disorder in patients that remain unsatisfied is worth citing and needs to be explored.

### Objectives

1. To determine frequency of satisfaction level of patients undergoing rhinoplasty.
2. To determine prevalence of Body Dysmorphic Disorder among these patients.
3. To find correlation between level of satisfaction and underlying Body Dysmorphic Disorder.

**Methodology:** Descriptive cross sectional study carried out at Department of Plastic Surgery, Combined Military Hospital Rawalpindi. All patients underwent rhinoplasty by consultant or senior trainee via standard method. Rhinoplasty Outcome Evaluation questionnaire was applied 3 months post-op to measure patient satisfaction. Percent level of satisfaction was calculated and patients with score > 50 were labeled as satisfied. Patients were screened for underlying Body Dysmorphic Disorder using DSM-V criteria simultaneously. The data was analyzed through statistical package for social sciences (SPSS 15).

**Results:** The mean age was  $29.49 \pm 5.75$  with age range of 22 years (18 - 40 years). There were 28 (25.93%) male and 80 (74.07%) females that underwent procedure. The mean ROE score was  $16.36 \pm 4.55$  with minimum and maximum score of 7 and 23. The mean total satisfaction score was  $68.17 \pm 18.99$  with minimum and maximum score as 29.17 and 95.83. According to operational definition, 25 (23.15%) were not satisfied and 83 (76.85%) cases were satisfied. On further distribution we found 25 (23.15%) cases had fair satisfaction, 41 (37.96%) had good satisfaction and 42 (38.89%) had excellent satisfaction.

Prevalence of Body Dysmorphic Disorder in sample was found to be 11.11% (12 patients). Out of these, 11 (91.66%) were unsatisfied post-op. Out of total dissatisfied patients, 44% (11) had underlying Body Dysmorphic Disorder. We found statistically significant association between level of satisfaction and Body Dysmorphic Disorder with a p value  $\leq 0.01$ .

**Conclusion:** We found higher satisfaction score post rhinoplasty and though prevalence of Body Dysmorphic Disorder was not high in the sample, we found a statistically significant correlation between underlying disorder and post rhinoplasty level of satisfaction.

**Keywords:** Body Dysmorphic Disorder; Cosmetics; Nasal Deviation; Patient Satisfaction; Rhinoplasty; Nose Job

## Abbreviations

BDD: Body Dysmorphic Disorder; ROE: Rhinoplasty Outcome Evaluation; DSM-5: Diagnostic and Statistical Manual-5; WHO: World Health Organization

## Introduction

The nose is one of the most visible organs on the face and its appearance contributes enormously to facial aesthetics. Rhinoplasty is one of the most frequently performed plastic surgery operations for nose. Most of the times, it is undertaken in order to gain social appraisal and being a central and integral feature on the face, its exquisiteness is considered as a hallmark of attractiveness in all societies [1].

There have been many anthropometric studies on normal nasal parameters and it is widely accepted that the shape and dimension of nose vary according to different racial and ethnic profiles. Usually, however, patients opting for rhinoplasty, prefer to have a higher nasal dorsum, increased nasal tip projection, and less flaring of the alar bases [2,3]. Other than cosmetic reasons, being the most prominent projection in facial geometry makes it more vulnerable to traumatic injuries in day to day life [4]. Therefore rhinoplasty is performed for both esthetic and functional needs and serves the clients with a diverse range of requests and requirements [5].

Though plastic surgery has achieved enormous progress in technique of rhinoplasty, yet it has a relatively low patient satisfaction rate as compared to other cosmetic procedures. One large study found the overall satisfaction rate of 83.6%. Factors responsible for dissatisfaction included but were not limited to the difficulty of the procedure as well as potentially unrealistic patient expectations as well as underlying personality and self-esteem issues. Therefore, Understanding the reasons behind patient dissatisfaction is an indispensable step towards improving outcomes. This also explains why patient satisfaction after rhinoplasty has to be considered a key indicator for success of the procedure along with other technical aspects [6,7].

While digging deeper in the causes responsible for dissatisfaction of rhinoplasty patients, a major bulk of research pointed towards possible association with underlying psychiatric morbidity or psychopathology. Predominantly, personality disorders and Body dysmorphic disorder (BDD) were found to be common among rhinoplasty candidates [8]. BDD is a psychiatric disorder defined as presence of obsessive ideas about distorted physical appearance leading to social, professional and personal dysfunction and among cosmetic procedures, rhinoplasty was found to be the most commonly asked for aesthetic surgery by patients suffering from BDD [9]. BDD is found in 1 - 2% of the general population [9] whereas its prevalence shoots up to 3.2% - 16.6% among candidates of rhinoplasty [10].

## Objective of the Study

The objective of the study was to find out patient satisfaction that is a reflection of the procedure outcome. Secondary objective was to find out prevalence of BDD and its association with patient satisfaction in this population. This is an under researched area in our country and the results may have imperative implications which may prove to be instrumental in improving patient satisfaction post rhinoplasty.

## Materials and Methods

It was a descriptive cross sectional study that took place at Department of Plastic Surgery, Combined Military Hospital Rawalpindi. Duration of study was 8 months. Sample Size was 108, calculated by using WHO sample size calculator, taking confidence interval as 95%. A total of 108 patients that underwent rhinoplasty were included in the study using non Probability Consecutive Sampling technique.

All patients booked for rhinoplasty at surgery department 16 to 50 years of age and both genders were included in the study.

There was no contraindication to inclusion other than general contraindications to surgery itself like drug allergy.

Approval of the study was taken from hospital ethical committee before starting the study. All the patients visiting to the surgery department for rhinoplasty were selected by consecutive sampling method. Informed written consent was taken from each patient by researcher himself. All the patients included in the study underwent rhinoplasty by a consultant or senior trainee by standard method.

The main tool used for assessment of patient's satisfaction at three months post rhinoplasty was Rhinoplasty outcomes evaluation (ROE) questionnaire [6]. All the demographic information including name, age, gender, economic status, educational status etc. ROE score was recorded on a predesigned Performa. ROE questionnaire comprised of six questions, each question's answer had a score within a scale between zero and four (zero being the most negative answer and four being the most positive one). For final result all the responses from each question were added and divided by 24 and then multiplied by 100. This gave a value about percent level of satisfaction (where zero represented minimum satisfaction and 100 the maximum). The final result was divided in four levels or classes as follows:

- Poor score (0 - 25)
- Fair score (25 - 50)
- Good score (50 - 75)
- Excellent score (> 75)

All patients obtaining score > 50 were labeled as satisfied and those obtained less than this were labelled as dissatisfied.

All candidates were screened for Body Dysmorphic Disorder by a psychiatrist using DSM-V clinical criteria as well. A liaison was made with psychiatric services for the clients who had BDD, after providing psychoeducation to the clients, for complete management and follow up.

The data was entered and analyzed through statistical package for social sciences (SPSS v 15). Mean and standard deviation was computed for quantitative variable like age and ROE score at 3 months post rhinoplasty. Frequency with percentage was presented for qualitative variables like gender, education, occupation, socioeconomic status and satisfaction after 3 months. Effect modifiers like age, gender, education, occupation and socioeconomic status were controlled by stratification method. Post stratification chi-square test was applied to compare patient's final outcome. P-value < 0.05 was considered significant.

**Results**

The mean age of cases was 29.49 ± 5.75 with age range of 22 years (18 - 40 years). A total of 50 (46.30) cases were 18 - 29 years old and 58 (53.70%) cases were 30 - 45 years old.

There were 28 (25.93%) male and 80 (74.07%) females in these cases, with high female ratio.

According to education status, there were 9 (8.33%) illiterate, 21 (19.44%) were matriculate, 44 (40.74%) were intermediate, 27 (22%) were graduate and 7 (6.48%) had post-graduation. According to occupation, 18 (16.67%) cases had their private business, 44 (40.74%) had Govt. Job, 34 (31.48%) had private job and 12 (11.11%) cases were jobless/house wives. There were 13 (12.04%) whose income in PKR was < 15000, 46 (42.59%) had between 15000 - 30000 and 49 (45.37%) had income o > Rs.30000.

The mean ROE score was 16.36 ± 4.558 with minimum and maximum score of 7 and 23. The mean total satisfaction score was 68.17 ± 18.99 with minimum and maximum scores of 29.17 and 95.83 (Table 1). According to operational definition, 25 (23.15%) were not satisfied and 83 (76.85%) cases were satisfied. On further distribution, we found 25 (23.15%) had fair satisfaction, 41 (37.96%) had good satisfaction and 42 (38.89%) had excellent satisfaction.

|                | Total satisfaction score | ROE Score |
|----------------|--------------------------|-----------|
| Mean           | 68.17                    | 16.36     |
| Std. Deviation | 18.99                    | 4.55      |
| Range          | 66.67                    | 16.00     |
| Minimum        | 29.17                    | 7.00      |
| Maximum        | 95.83                    | 23.00     |

**Table 1:** Total mean satisfaction and roe scores.

When data was stratified for age, gender, education status, occupation and socioeconomic status, we found significantly higher satisfaction levels in females (p-value < 0.05) and no association was found in other effect modifiers (p-value ≥ 0.05) (Table 2).

|         |        | Level of Satisfaction |                |                      | Total  |
|---------|--------|-----------------------|----------------|----------------------|--------|
|         |        | Fair (25 - 50)        | Good (50 - 75) | Excellent (75 - 100) |        |
| Gender  | Male   | 11                    | 10             | 7                    | 28     |
|         |        | 44.00%                | 24.41%         | 16.72%               | 25.90% |
|         | Female | 14                    | 31             | 35                   | 80     |
|         |        | 56.00%                | 75.60%         | 83.30%               | 74.10% |
| Total   |        | 25                    | 41             | 42                   | 108    |
| 100.00% |        | 100.00%               | 100.00%        | 100.00%              |        |

Table 2: Level of satisfaction in male and female participants.

The prevalence of Body Dysmorphic Disorder was found to be 11.11% (12 patients) in the whole sample that underwent surgery. There was a statistically significant relation between level of satisfaction and diagnosis of BDD (p < 0.001).

Out of 12 patients with BDD, 11 fell in the category of unsatisfied patients post rhinoplasty (91.66%) however of all the dissatisfied patients, 44% (11/25) had BDD. The 8.33% patients with BDD who were satisfied fell in the good satisfaction range (50 - 70 score) and none of them had excellent satisfaction.

|                | Fair satisfaction | Good satisfaction | Excellent satisfaction | Number of participants N | p-value     |
|----------------|-------------------|-------------------|------------------------|--------------------------|-------------|
| BDD (11.11%)   | 91.66%            | 8.33%             | 0.00%                  | 12.00                    | (p < 0.001) |
| No BDD (88.9%) | 14.58%            | 41.66%            | 43.75%                 | 96.00                    |             |

Table 3: Distribution of patients suffering from BDD according to satisfaction levels.

Overall, 14.30% of males out of total sample had BDD and 10.00% of females had this diagnosis. There was no statistically significant difference among patients of BDD that underwent rhinoplasty regarding gender.

### Discussion

Rhinoplasty is a frequently carried out operation but not all the surgeons are deemed to truly master the wide scope of technical nuances [11]. It has earned notoriety as being extremely challenging in terms of producing consistent outstanding results [12]. Multiple factors like evolution in operating procedures and outcome expectations has shaped it into a highly differentiated problem oriented procedure with reductions, relocations and augmentation of tissues [13] making even the expert admitting at times that “noses are difficult to predict” [14].

Satisfaction level is used as predictor of procedure success but may not be a true or only depiction of a technically successful surgery [6]. It has been found that patient satisfaction can be influenced by underlying psychological and psychiatric factors as well. Issues of personality, self-image and body dysmorphic disorder have predominantly been related to low level of satisfactions post rhinoplasty [8].

We found a higher ratio of female candidates booking for rhinoplasty i.e. about 2/3 of our participant were females, which is consistent with a study done by Pereira Filho Gd [15] comprising of 53 female and 7 male participants. There were other studies [16] as well with almost equal ratio of male and female participants. Nevertheless, a general higher trend of plastic surgery procedure in females was found prevalent in most of the studies which could be accounted for by the possible concern of females with the aesthetics and appearance [17,18].

Our mean total satisfaction score was  $68.17 \pm 18.99$  with minimum and maximum score as 29.17 and 95.83. A similar study reported mean satisfaction score as  $73.25\% \pm 19.42$  for primary rhinoplasty and  $72.02\% \pm 15.54$  for secondary rhinoplasty [19] which is in line with our findings.

In this study we assessed satisfaction level at 3<sup>rd</sup> month post-surgery and found that 25 (23.15%) were not satisfied and 83 (76.85%) cases were satisfied. On further distribution we found 25 (23.15%) cases had fair satisfaction, 41 (37.96%) had good satisfaction and 42 (38.89%) had excellent satisfaction. Similar findings were cited in a recent study that found that 57.50% patients were improved post-operatively to good satisfaction score and 30.00% were improved postoperatively to excellent satisfaction level [16]. A different study reported mean satisfaction rate as 73.25% for primary rhinoplasty and a mean value of 72.02% for secondary rhinoplasty correspondingly [19].

We found higher satisfaction levels among females than males which was in line with findings from other studies [7].

The prevalence of BDD among candidates of rhinoplasty was found to be 11.11% in our study. BDD is found in 1-2% of general population [9]. However prevalence of BDD among rhinoplasty candidates have been reported to be 3.20% to 16.60% [10]. Previous studies in Iran have also reported a 12.20% to 27.50% prevalence of BDD among rhinoplasty candidates [20].

We also found a statistically significant association between level of satisfaction and BDD ( $p \leq 0.01$ ). Presence of BDD was associated with higher level of dissatisfaction. Almost all the patients with BDD had dissatisfaction post rhinoplasty. Also out of total dissatisfied patients, nearly half had underlying BDD. Correspondingly, preceding studies have also mentioned link between psychiatric disorders and amplified risk of post op dissatisfaction rates [21].

These are very important findings as they provide assistance in understanding the reasons behind patient dissatisfaction and may have positive implications in longer term to improve procedure outcomes. Every veteran surgeon who operates on his clients encounters occasional cases of dissatisfied or less satisfied patients. We found high satisfaction rates in our study. Still a number of participants were not as satisfied and nearly half of them had an underlying psychiatric difficulty. There is a need to routinely recognize and screen these high risk patients before surgery, keeping in view sensitivity of the issue and stigma attached with psychiatric illnesses [22], so that they can be provided with required professional help and support before and after surgery. This definitely will help both patient and surgeon by improving the outcome of procedure and increased patient satisfaction that will rightly translate later into surgeon's higher satisfaction and contentment as well.

### Conclusion

Our study found higher satisfaction score after rhinoplasty by assessing quality of life, respiratory function and the cosmetic result desired by the patient submitted to rhinoplasty. Body dysmorphic disorder was found to be more prevalent in our participants as compared to general population and had an association with the level of satisfaction post-rhinoplasty.

### Conflict of Interest

There is no competing interests and no funding from anywhere.

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**Volume 7 Issue 3 March 2018**

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