

## Original Research Article

# Changes in patient's life after rhinoplasty

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### ABSTRACT

**Background:** Aesthetic surgeries are performed to improve individual's satisfaction with their appearance and also to improve their psychological health by improving self-confidence and self-esteem. Our study aimed to ascertain patient satisfaction in regard to nose appearance and function with the use of a validated questionnaire before and after rhinoplasty surgery.

**Methods:** The prospective study was conducted at Department of Plastic and Reconstructive surgery, SMS hospital Jaipur India from October 2018 to February 2020. The rhinoplasty outcome evaluation ROE questionnaire was used to study patient's satisfaction. Patients underwent open rhinoplasty, closed rhinoplasty, primary rhinoplasty, revision rhinoplasty and additional nasal surgery such as septoplasty as per required. Data were collected from 70 patients before and 6 month after surgery. Results before and after surgery were compared.

**Results:** 70 out of 83 patients completed questionnaires. Most common age group is from 16 to 45 year. Most common reason for rhinoplasty in our study is aesthetic (58.5%), both aesthetic and functional (28.5%), functional (12.8%). Preoperative and postoperative ROE score shows significant improvement after 6 month in functional and aesthetic aspect. Mean preoperative score of all patients were 33.6 and the mean postoperative score were 80.4. Difference in improvement of scores was not significant when groups were divided on the basis of sex, age, concomitant nasal procedure, primary or revision surgery, open or closed rhinoplasty.

**Conclusions:** Rhinoplasty surgery significantly improved patient quality of life regarding nose function and appearance. ROE questionnaire proves reliable equipment for estimating patient satisfaction.

**Keywords:** Aesthetics, Patient satisfaction, Quality of life, Questionnaire, Rhinoplasty

### INTRODUCTION

Rhinoplasty is one of common cosmetic surgeries. It is complex, technically demanding plastic surgery. Person who are perceived negatively as a result of nasal deformity can have increased difficulty interacting with others in social situations or in the workplace. One main goal of rhinoplasty is to improve the patient's appearance and ultimately relieve his or her social anxiety and persecution complex.<sup>1</sup> Due to increasing self-attention, media awareness and advancement in surgical manoeuvres, cosmetic rhinoplasty is at increasing trend in India. This trend seen in both men and women.<sup>2</sup>

Cosmetic rhinoplasty may affect various aspects of patient's health that could be identified by measuring quality of life (QOL) index. This tool could reflect the long term outcome of procedure by assessment of physical, social, psychological, and emotional aspect of life.<sup>3</sup> Evaluation of surgical outcome also measured by patient satisfaction in facial plastic surgery. There is increasing trend of self-reporting on outcome to assess effectiveness of cosmetic procedure. The patient's satisfaction depends on gender, age, education level, culture, ethnicity, occupation, economic profile and patient's level of expectation and assessing these factors help in preoperative evaluation.<sup>4</sup>

Difficulty in understanding patient expectations and diversity of the procedure, the post rhinoplasty satisfaction is low.<sup>5</sup> Surgeon and patient are generally not similarly pleased with the procedure, since the expectations and opinions are different.<sup>6</sup>

ROE is standard, less time consuming, reliable and easily perform questionnaire to evaluate quality of life post rhinoplasty. It allows measure of qualitative aspects such as social, emotional and psychological variables.<sup>7</sup>

This study aimed to access the satisfaction level of patients who underwent rhinoplasty and determine the patient’s characteristics and surgery details.

**Rhinoplasty outcomes evaluation (ROE)**

This questionnaire is designed to assist your surgeon in determining the best patient outcomes following rhinoplasty surgery. Your comments are confidential and may be used to refine surgical procedures for future patients. Please circle the number that best characterizes your current opinion regarding the following questions:

1. How well do you like the appearance of your nose?  
 Not at all (0)    Soemwhat (1)    Moderately (2)    Very much (3)    Completely (4)
2. How well are you able to breathe through your nose?  
 Not at all (0)    Soemwhat (1)    Moderately (2)    Very much (3)    Completely (4)
3. How much do you feel your friends and loved ones like your nose?  
 Not at all (0)    Soemwhat (1)    Moderately (2)    Very much (3)    Completely (4)
4. Do you think your current nasal appearance limits your social or professional activities?  
 Always (0)    Usually (1)    Sometimes (2)    Rarely (3)    Never (4)
5. How confident are you that your nasal appearance is the best that it can be?  
 Not at all (0)    Soemwhat (1)    Moderately (2)    Very much (3)    Completely (4)
6. Would you like to surgically alter the appearance or function of your nose?  
 Definitely (0)    Most likely (1)    Possibly (2)    Probably not (3)    No (4)

**Figure 1: Rhinoplasty outcome evaluation.**

**METHODS**

A prospective study was conducted of all individual over 16 year of age that underwent rhinoplasty at Department of Plastic and reconstructive surgery, SMS hospital Jaipur Rajasthan from October 2018 to February 2020. Study was performed after approval from ethical committee. 83 patient were identified but 13 were excluded from study as they were unresponsive to repeated phone calls.

**Inclusion criteria**

Patients from both genders, between 16 to 60 years of age, nasal procedures such as septoplasty in addition to rhinoplasty were included in the study.

**Exclusion criteria**

Patients with congenital and neoplastic nasal deformities were excluded.

Informed consent, pre and post-surgery photography taken for documentation, planning and comparison. Preoperatively demographic characteristic, patient

concerns were documented, detailed counselling done. ROE questionnaire was explained, discussed and answered by all patients. Postoperatively evaluation by a phone call at 6 months after surgery by same health professional. All data were compiled and outcome were assessed.

The rhinoplasty outcome evaluation questionnaire composed of six questions (5 about nose shape and 1 about nasal breathing). Each question is scored by the patient on a scale from 0 to 4, where 0 is the most negative answer and 4 the most positive one. The sum of the scores was divided by 24 and multiplied by 100 to obtain a result ranged from 0 to 100. A lower score indicates more dissatisfaction. A positive difference between post-operative and pre-operative scores means improvement after intervention.

Data analysis was done using SPSS. The student’s t-test was applied for statistical correlation. The confidence interval was kept at 95%. P<0.05 was considered statistically significant.

**RESULTS**

After exclusion of 13 patients due to unresponsiveness, 70 patients included in study. The study composed of 39 female and 31 male patients. Most subjects 57.1% were between 16 to 30 years old and 38.5% were between 30 and 45 years old. Demographics characteristics of the patients are detailed in table.

**Table 1: Patient characteristics.**

Gender	No. of patients	Percentage
Female	39	55.7
Male	31	44.5
<b>Age (years)</b>		
16 to 30	40	57.1
30 to 45	27	38.5
>45	03	4.2
<b>Literacy</b>		
Ninth grade and below	17	24.2
Twelve grade and undergraduate	41	58.5
Postgraduate and more	12	17.1
<b>Marital status</b>		
Non married	48	68.5
Married	22	31.5

58.5% patients mentioned cosmetic reasons for undergoing rhinoplasty, 12.8% functional and a combination of cosmetic n functional in 28.5% subjects.

The mean ROE score of all patients preoperative was 31.3 and the mean score postoperative was 80.8 at six month. All patients show statistically significant improvement between preoperative and postoperative

score. Mean difference was 49.5 indicates good satisfaction level after surgery.

**Table 2: Surgery details.**

Reason for surgery	No. of patients	Percentage
Aesthetic	41	58.5
Functional	09	12.8
Both	20	28.5
Operation type		
Open	44	62.8
Closed	26	37.1

There were statistically significant difference in preoperative and postoperative score between patient with low literacy level and high literacy level. Patient with low literacy level shows higher change in ROE score.

Sex and age shows no significant differences in ROE score. Both genders showed a significant improvement between preoperative and postoperative score however there was no difference in mean postoperative score.

Primary rhinoplasty was performed in 81.4% and revision rhinoplasty in 18.5% patients. Septoplasty combined with rhinoplasty was performed in 28 patients.

Surgical technique (open or close), primary versus revision surgery, rhinoplasty with concomitant nasal procedure (e.g. septoplasty) has no significant differences in ROE score after surgery showing outcome of the surgery was the same regardless of different variants and approaches of surgery.

No significant difference between in preoperative and postoperative score among patients operated by different surgeons. No major complications/deformity, no donor site morbidity seen in any patients.

Finally, patients were found more satisfied after rhinoplasty.

## DISCUSSION

Goal of rhinoplasty is to restore function and youthful appearance of nose and improve quality of life. Aesthetics of a person's nose can profoundly impact the way he or she is perceived by the outside world. Patient satisfaction is the principal factor that measure success of procedure.<sup>8</sup> Social environment, education, life experience and level of expectation (which may or may not be realistic), all these factors influence patient satisfaction. The measure of satisfaction is difficult as no real standard available.

We conduct our study with ROE questionnaire because it is easy to use and simple scoring system and interpretability of final score. This quantifies the result

from the surgical procedure, assessing respiratory function, quality of life and cosmetic results.

Psychological characteristics (self-consciousness of appearance, self-esteem) should be evaluated preoperatively.<sup>9</sup> Facial cosmetic surgeries has a huge psychological impact. Patient with psychological abnormalities may be anxious or distressed and may give unexpected responses even after good surgical corrections.<sup>10</sup>

First reliable questionnaire for plastic surgeries was made by Alsarraf et al.<sup>11,12</sup> That was later modified for patient seeking rhinoplasty called rhinoplasty outcome evaluation (ROE) by Arima et al.<sup>13</sup> This measure three qualitative aspect: physical, psychological and social aspects. A gain of a minimum score of 36 is considered improvement. A postoperative operative score of 80% is considered excellent result. This indicates patient is very satisfied.<sup>14</sup>

Over the last years, cosmetic surgical procedure are increasing due to growing focus on health, fitness, looks trend of posting selfies on social media and the fact that beautiful people have an advantage in many areas of life. Most of our patient seeking rhinoplasty for aesthetic (58.5%) and combined aesthetic and functional (28.5%).

Previous study shows greater tendency of women and girls to undergo cosmetic rhinoplasty. There are 31 men and 39 female in our study shows men are increasing concerned about their physical appearance. Men also want to feel more confident, sexy and youthful. Female showed higher satisfaction score than men. Khansa et al found that male had a lower satisfaction with rhinoplasty.<sup>5</sup> Another review study shows that male complaints are vague and they a poor understanding of deformity.<sup>15</sup>

Individuals with low literacy level do not show greater tendency for cosmetic surgeries however demonstrating high index of satisfaction which may be due to lower pre surgical expectation and lack of information. These patients need fewer counselling sessions. Patients with higher literacy have more information and knowledge of procedure had higher expectation from surgery, require multiple counselling sessions, express slightly lower satisfaction.<sup>7</sup> Satisfaction level of patient found to be inversely proportional to their level of understanding and knowledge of surgical procedure.

Our mean preoperative score was 31.3 and mean postoperative score was 80.8 at six month. Net gain of 49.5 points after surgery. These is comparable to those reported by Alsarraf et al, which reported mean preoperative score of 38.8 and mean postoperative score was 83.3 with a mean improvement of 44.5.<sup>12</sup> Esteves ET al also showed similar report with mean preoperative score of 32.78 and a mean postoperative score of 81.9

with mean improvement of 49.3.<sup>7</sup> Finding of our study was replicated by Cingi et al in Turkey.<sup>16</sup>

Our study was prospective study which allows us to choose good candidate for surgery and to access results objectively.

Small sample size, assessment of single evaluation instrument, lack of matched control group is limitations of our study.

Study with larger sample size, longer follow up, use of more specific tool for assessment of quality of life will be appreciated.

## CONCLUSION

ROE questionnaire proves to be useful tool for estimating patient's satisfaction in our study. Aesthetic outcome is main factor in determining the patient's satisfaction. Our study shows rhinoplasty providing long term satisfaction, positive effect in patient's lives. It is duty of health professionals to explain the risk of surgery and expected results. Improvement of physical and mental health expected with proper patients selection and successful operation. Rhinoplasty proves its benefits in term of both functional as well as aesthetic outcome.

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