

Original Article

Esthetic and Functional Assessment of Sixty Five Patients who Underwent Rhinoplasty (A maxillofacial surgeon's experience)

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Abstract

Objective: This study aims to assess patient satisfaction according to the shape and function of the nose using a rhinoplasty outcome evaluation (ROE) questionnaire, pre, and post rhinoplasty procedure.

Methods: A prospective study of sixty-five rhinoplasty patients who underwent open rhinoplasty procedures, including other nasal procedures like septoplasty or turbinoplasty in Sulaimani Surgical Teaching Hospital, department of oral maxillofacial surgery. The Rhinoplasty Outcome Evaluation (ROE) questionnaire was used for esthetic and functional assessment.

Results: In this study, sixty-five patients participated by completing the questionnaires and the follow-up period. The main reasons for rhinoplasty in our patients were: esthetic 55.4% (n=36), functional 3.1% (n=2), and a combination of both in 41.5% (n=27) patients. Although there were no statistically significant gender differences for outcomes of rhinoplasty, statistically significant improvements were identified between the preoperative and postoperative scores for both genders. In the preoperative stage, patients recorded worse scores for anxiety and insecurity ($p < 0.05$). There were no differences in gender, age, cause, or literacy level in the mean postoperative scores ($p > 0.05$).

Conclusions: The present study suggests that the rhinoplasty cases carried out by maxillofacial surgeons have high satisfaction rates regarding final esthetic and functional results. The rhinoplasty results have a great psychological impact on the patients' lives.

Keywords: *Esthetic, Functional assessment, Rhinoplasty, Maxillofacial surgeon.*

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Introduction

The nose is of utmost importance in the face because of its central position. The nasal shape affects the development of our personality and body image. Therefore, rhinoplasty is a common facial plastic procedure⁽¹⁾. Rhinoplasty presents difficulties due to individual differences and patients' expectations, besides the usual assessments of the surgery's success in avoiding morbidity, complications, and objective changes in nasal shape. However, the patient's perspective and satisfaction are the most important factors for the success or failure of a rhinoplasty procedure⁽²⁾. To accomplish optimal facial beauty, the result of the surgery must be completely harmonious and inconspicuous, while not forgetting that the nose is a critical sensory organ, vital to one of the most mandatory functions of life, which is breathing⁽³⁾. Hence, improvement in the function of the nose is nowadays sought after as much as a pleasing cosmetic appearance⁽⁴⁾.

Outcomes of any surgical procedure can be evaluated in quantitative and qualitative terms. Nevertheless, the lack of standardized quantitative assessment makes it difficult to compare objectively. Recently, self-reporting outcomes have been an effective way to assess medical procedures, becoming an important factor in clinical trials. Therefore, evaluating patients' quality of life and self-esteem via a questionnaire is a good method of facial surgery assessment, based on the systemization of the collected data and objective measurement of the pros and cons after the surgery⁽⁵⁾. In addition, patients' satisfaction varies according to gender, age, education level, culture, ethnicity, and, most importantly, the patient's level of expectation⁽⁶⁾.

In the case of secondary rhinoplasty, it is more challenging than primary rhinoplasty because it deals with correcting many different deformities of a previously operated nose, with the anatomy altered from its norm. For this reason, proper diagnosis and treatment planning is the key to successful revision rhinoplasty, depending more specifically on the patient's psychological evaluation, esthetic analysis, and functional examination⁽⁷⁾. Since nasal anatomy can vary significantly among individuals, evaluation of artistic quality varies from one person to another, and beauty comes in many forms, it is extremely difficult to assess this parameter objectively, which means it can only be assessed by applying subjective criteria⁽⁸⁾. In 2000, Alsarraf et al. developed a questionnaire that offered dependability, internal coherence, and validity for several plastic surgeries, including rhinoplasty⁽⁹⁾.

Rhinoplasty gratification result judgment is a long, slow, and tiresome job, particularly when executed by non-identical surgeons. To overcome this, we used the Rhinoplasty outcome evaluation (ROE) questionnaire to allow consistent assessment of our results⁽¹⁰⁾. This research aimed to assess patient gratification about the appearance of the nose and function using the rhinoplasty outcome evaluation (ROE) questionnaire, pre, and post rhinoplasty procedure.

Patients and methods

This was a prospective clinical study of sixty-five patients who went through an open rhinoplasty procedure in the oral and maxillofacial surgery department at Sulaimani Surgical Teaching Hospital; the Kurdistan Board ethical committee accepted it before initiation. All patients who had requested rhinoplasty, in addition to septoplasty or turboplasty, were involved in this research. Patients younger than 18 years and with congenital or growth nasal abnormality were excluded. These sixty-five patients underwent a preoperative consultation with an oral and maxillofacial surgeon, and they completed the rhinoplasty outcomes evaluation questionnaire (R.O.E), Kurdish version. The questionnaire asked for patient demographic data such as age, sex, education level, psychological aspects, and reason for wanting rhinoplasty. In addition, a phone call assessed the postoperative assessment at 3- and 6-months period after rhinoplasty, by the same maxillofacial doctor; the cases as well required to answer six related questions on the ROE questionnaire (5 about nose appearance and one about nasal function) at three different points of the study: preoperatively and at 3 and 6 months after the procedure. The patient scored each question on a scale from 0 to 4, where 0 was the most negative answer and four the most positive, Figure 1.

Results

After inclusion and exclusion criteria were met, sixty-five patients participated in this study. The sample was composed of 59 female and six male patients. The population was divided into two age groups: 18-29 years old, 30-49 years old. Demographic information on the patients is provided in Table 1. The reasons for undergoing rhinoplasty were esthetic in 55.4% (n=36)

1. How well do you like the appearance of your nose?

Not at all	Somewhat	Moderately	Very much	Completely
0	1	2	3	4

2. How well are you able to breathe through your nose?

Not at all	Somewhat	Moderately	Very much	Completely
0	1	2	3	4

3. How much do you feel your friends and loved ones like your nose?

Not at all	Somewhat	Moderately	Very much	Completely
0	1	2	3	4

4. Do you think your current nasal appearance limits your social or professional activities?

Always	Usually	Sometimes	Rarely	Never
0	1	2	3	4

5. How confident are you that your nasal appearance is the best that it can be?

Not at all	Somewhat	Moderately	Very much	Completely
0	1	2	3	4

6. Would you like to surgically alter the appearance or function of your nose?

Not at all	Somewhat	Moderately	Very much	Completely
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Figure 1: Rhinoplasty Outcomes Evaluation questionnaire.

Table 1: Patients’ demographic data.

Gender	Frequency	Percent
Male	6	9.2
Female	59	90.8
Total	65	100
Age		
18-29	31	47.7
30-49	34	52.3
Total	65	100
Literacy		
12th grade and	24	36.9
Diploma	15	23.1
College	26	40
Total	65	100
Cause		
Functional	2	3.1
Esthetic	36	55.4
Both	27	41.5
Total	65	100

Table 2: Psychological status of the patients.

	Psychology	Psychology	p-value
	No. (%)	No. (%)	
Calm	32(49.2)	47 (72.3)	0.01
Anxious	33 (50.8)	18 (27.7)	
Total	65 (100)	65 (100)	
	Psychology after three months	Psychology after six months	p-value
	No. (%)	No. (%)	
Calm	47 (72.3)	50 (76.9)	0.4
Anxious	18 (27.7)	15 (23.1)	
Total	65 (100)	65 (100)	
	Psychology	Psychology	p-value
	No. (%)	No. (%)	
Calm	32(49.2)	50 (76.9)	<0.001
Anxious	33 (50.8)	15 (23.1)	
Total	65 (100)	65 (100)	



Figure 2: Rhinoplasty procedure (dorsal hump reduction medial and lateral osteotomy and tip definition)

Table 3: Rhinoplasty outcomes evaluation preoperatively.

	Most negative answer	Somewhat	Moderately	Very much	Most positive answer
Nose appearance	28	17	16	4	0
Nasal breathing	2	20	9	10	24
How much friends like your nose?	5	18	22	18	2
Does current nasal appearance limit social activities?	1	6	6	10	42
Is nasal appearance the best that can be?	0	2	11	37	15
Would you like to alter the appearance and function of your nose surgically?	39	5	3	1	17

Table 4: Rhinoplasty outcomes evaluation after three months.

	Most negative answer	Somewhat	Moderately	Very much	Most positive answer
Nose appearance	3	5	13	30	14
Nasal breathing	1	5	12	32	15
How much friends like your nose	2	2	9	39	13
Current nasal appearance limits social activities?	1	2	0	3	59
Is nasal appearance the best that can be?	16	18	14	14	3
Would you like to alter the appearance and function of your nose surgically?	3	4	7	15	36

Table 5: Rhinoplasty outcomes evaluation after six months.

	Most negative answer	Somewhat	Moderately	Very much	Most positive answer
Nose appearance	1	5	10	26	23
Nasal breathing	1	4	11	26	23
How much friends like your nose	2	2	10	33	18
Current nasal appearance limits social activities?	0	1	0	3	61
Is nasal appearance the best that can be?	22	16	11	11	5
Would you like to alter the appearance and function of your nose surgically?	3	3	6	15	38

of patients, functional in 3.1% (n=2) and both esthetic and functional in 41.5% (n=27). Regarding psychological aspects, according to the patient’s answer about their psychological condition, 50.8% (n=33) of the patients considered themselves anxious, and 49.2% (n=32) calm preoperatively, and 27,7% felt secure. For both anxious and calm patients after six months postoperatively, respectively (p-value <0.01) was highly significant between preoperative and after three months postoperatively and between preoperative and six months postoperatively, while it was not significant between 3 months and six months postoperatively (p-value = 0.4), Table 2. There were no statistical differences between males and females, p value=0.75, with both genders showing a statistically significant improvement in their postoperative shape of the nose compared to their preoperative and scores. Additionally, there were no differences in age, cause, or literacy level in the mean postoperative scores (p > 0.05).

There was no significant difference between the 3 and 6 months postoperative scores, except nasal breathing and limitation of social activities due to the shape of the nose. In comparison, after six months, most of the patients were satisfied with the result. The details of the responses given to each question in the ROE questionnaires preoperatively and three months

postoperatively, preoperatively, and six months postoperatively are shown in Tables 3,4, and 5. Figure 2 shows the result of rhinoplasty surgery before and after the procedure.

Discussions

The outcomes of the present study suggest that the patients who underwent open rhinoplasty were satisfied with the results. There is no doubt that the nose is of utmost importance to the face because of its central position and is a basic component of patients’ facial appearance—the actual view of ourselves. So, varieties of nasal disproportion may cause high psychological discomfort for the patient and act on their quality of life. As demonstrated in previous research⁽¹¹⁾, rhinoplasty results were found to have a huge psychological impact on the patients. This prospective study involved 65 patients who underwent open rhinoplasty and were assessed for esthetic and functional outcomes using a Kurdish version of the rhinoplasty outcomes evaluation questionnaire before surgery, at 3 and 6 months postoperatively, to gain more precise results about satisfaction. The study provides further evidence that nose reshaping can crucially change the shape of the

nose and ameliorate the quality of life. The results in the ROE showed statistically significant improvement after the rhinoplasty surgeries were carried out by maxillofacial surgeons, demonstrating a high satisfaction level in this patient population. Although the practical points of the nose reshaping are important, patient gratification is the element that dictates the success of the procedure⁽⁹⁾.

Our study recognized a significant improvement between preoperative and three months postoperatively and between preoperative and six months postoperatively, while there was no notable difference between three and six months. Although our study focused on public hospital-based patients and rhinoplasty and other nasal surgery are performed by maxillofacial surgeons in public hospitals. However, significant improvements were recorded among our population according to ROE scores.

There were 59 females and six males in our sample, which indicates that females are more concerned than men about their physical appearance. Regarding age and education level, most patients were aged 30-49 years old and had a college degree and above, respectively. Prospective studies are important as they improve the selection of good candidates for surgery and the objective assessment of surgery results. This study was performed in a maxillofacial department of Sulaimani surgical teaching hospital and involved senior specialists and residents; hence, one limitation of the study is that the rhinoplasty was performed by different maxillofacial surgeons with different levels of experience in the esthetic area. This may have affected expectations in terms of both the preoperative consultation and the postoperative satisfaction; regarding the result and satisfaction of our study, the mean preoperative ROE score was 50.3, and the mean postoperative was 77.6 indicating an improvement was 27.3 after surgery. These numbers are not in line with those reported by Alsarraf et al., which found a mean preoperative score of 38.8 and a mean improvement of 44.5⁽¹⁰⁾. Furthermore, most of the patients were doing rhinoplasty for an esthetic reason, and they had an acceptable nose shape before the procedure. Therefore, logically we cannot expect big improvement.

Conclusions

The present study suggests that rhinoplasty cases carried out by maxillofacial surgeons achieve high satisfaction rates with regard to final esthetic and functional results, and the outcomes of the rhinoplasty have a significant psychological impact on the patients' lives.

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