

Aesthetic rhinoplasty- comparison of pre and postoperative quality of life for 10 years

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Abstract

Introduction: The assessment of the surgical success of rhinoplasty depends mainly on patients' satisfaction. Literature describing patient satisfaction is scarce; hence, this study was planned to assess the quality of life in preoperative and postoperative. This study was conducted in a tertiary-level hospital in north India from December 2012 to December 2021.

Methods: Patients undergoing aesthetic rhinoplasty between 2012 and 2021 (n = 31) were selected for the application Glasgow benefit Inventory and WHOQOL. The same surgeon in the same institute performed all the procedures.

Results: Analysing Glasgow benefit Inventory showed a significant difference in the total score, general benefits and social support (p<0.05). The physical domain score was 65.53%, the psychological score was 75%, the social relation score was 74.26% & the environmental

score was 78.5% (p value<0.05) of WHO-QOL.

Conclusion: Quality of life is related to the degree of satisfaction in the postoperative cosmetic rhinoplasty; hence, patient satisfaction should be discussed and counselled during pre and postoperative discussions.
Keywords: Aesthetics, Rhinoplasty, Patient satisfaction, Quality of life, Questionnaires.

Introduction

Aesthetic rhinoplasty has become a very common surgery in the practice of facial plastic surgeons. Preoperative discussions are held with patients about their expectations, wishes and surgical goals. There is plenty of literature discussing surgical techniques, approaches, complications, sequelae, and review rates; however, similar literature on satisfaction and consequent QOL is sparse.

Cosmetic rhinoplasty is a surgical procedure that reshapes the nose for aesthetic reasons¹. Initially,

rhinoplasty was exclusively performed for repairing tissue damage to perform reconstructive rhinoplasty. But, recently, rhinoplasty is also being used for aesthetic reshaping of the nose. It is the fifth most common cosmetic surgical procedure worldwide, accounting for 8.8% of the total surgical procedures worldwide². According to the International Society of Aesthetic Plastic Surgery, 15.4% of the total number of surgical procedures in the world occur in the USA, followed by 13.9% in Brazil, 3.4% in Japan, and 4.6% in South Korea respectively. In the USA, other prevalent cosmetic surgeries include breast augmentation, liposuction, eyelid surgery, and rhytidectomy³.

Cosmetic rhinoplasty has a remarkable effect on a patient's physical and mental health when investigated from an evidence-based medicine approach⁴⁻⁶. The cosmetic outcome of rhinoplasty has been evaluated in both objective and subjective outcomes. Patient-reported outcome measures (PROMs) are increasingly used in examining changes in patients' quality of life undergoing aesthetic procedures. Several health-related quality of life domains covering physical, psychosocial, and cosmetic rhinoplasty is believed to have a remarkable effect on a patient's physical and mental health when investigated from an evidence-based approach⁴⁻⁶. The effect of cosmetic rhinoplasty has largely been evaluated from objective and subjective outcomes. The World Health Organization Quality of Life (WHO-QoL) is a cross-culturally developed instrument used to assess the general quality of life based on a person's positive satisfaction by socioeconomic status, cultural and political systems in which they live, objectives, expectations, standards, and concerns⁷. The components of WHO-QoL are the quality of life across physical health, psychological,

social relationships, and environmental domains. The World Health Organization defines the quality of life as an individual's perception of their position regarding the culture and value systems they live in and their goals, expectations, standards, and concerns⁸.

The Glasgow Benefit Inventory (GBI) is a generic patient-recorded outcome measure reported by Robinson et al. in 1996 and has gained widespread popularity in otolaryngology. The Glasgow Benefit Inventory is designed for use only once post-intervention to measure change related to a specific surgical or medical intervention⁹. With the above background, the study was conducted with the following objectives-

1. To compare the preoperative and postoperative improvement using GBI
2. To compare the quality of life by applying WHO-QOLBRIF of both preoperative and postoperative

Methodology

The study was conducted in a tertiary care teaching hospital in north India from March 2012 to March 2013. Thirty-one patients with different forms of nasal deformity were included in the study. After enrolment in the study, patients were subjected to a detailed workup, including thorough history taking and clinical examination. The data regarding history, clinical findings, preoperative investigations and photographic documentation were recorded before surgery in a specially designed proforma. It was standardised according to the need of the individual patient, e.g. augmentation, reduction and corrective rhinoplasty and tip plasty etc., and the same surgeon did all the surgical procedures. All patients were evaluated in terms of quality of life by Glasgow Benefit Inventory and WHO-QOL BREF at the ends of 3 & 6 months for comparison.

Demographic data were collected for all patients, including age, sex, type of rhinoplasty(open vs closed, primary vs revision) and medical history

Results

In our study, 31 patients were included. The overall age range was from 18yrs to 33yrs with an average of 21.66 years. Out of 31 patients, 6 (19.3%) complained of only deformity, whereas 25(80.66%) patients had both nasal deformity & obstruction. Eighteen (58.06%) out of 31 patients had a developmental nasal deformity, 10 (32.2%) patients had traumatic deformity & only 3(9.6%) had a post-surgical nasal deformity. The most common nasal deformity seen among the patients was crooked nose deformity accounting for 38.7% (12 patients). Among other saddle nose deformities formed 9.6%, supra-tip deformities 9.6%, tip deformities 6.45%,

& 'C' shaped deformities formed 16.1% of the total study population. Most of the deformities (58.06%) were corrected by doing osteotomies. 4 patients (12.9%) underwent augmentation rhinoplasty, 3 patients(9.6%) had hump correction, 3 patients(9.6%) had SRP with rasping & 2 patients(6.4%) underwent tip plasty.

Twenty-nine of 31 patients who completed the questionnaire were analysed at the end of 6 months by a blinded statistician using SPSS statistical software. The analysis used t-tests to compare the mean scores between males & females & also between each of the four GBI domains.

Scale & Subscale	Mean	SD	Standard Error of Mean	P-Value
Total				
3 Month	53.86	5.42	0.943	0.040
6month	63.21	4.60	0.802	
General Benefit				
3 Months	54.28	7.75	1.35	0.000
6 Months	65.02	7.21	1.25	
Social Support				
3 Month	53.02	14.70	2.55	0.006
6 Month	64.13	15.09	2.62	
Physical Health				
3 Month	53.53	14.88	2.59	0.292
6 Month	55.55	13.60	2.36	

Table 1: Shows the result of the GBI

The mean total GBI score was 63.21 & the mean general subscale score was 65.02, the mean social support score was 64.13 & the mean physical health score was 55.55. An exploratory analysis of the effect of follow-up time on patient benefit from rhinoplasty was performed. As

we can see, there were significant differences in the total scores, general benefit score & social support score (shown in the table with the corresponding 'p-value).

WHOQOL-BREF produces a profile with four domains (physical, psychological, social & environmental) about an individual's overall perception of QOL & health.

Transferred domains	N	Mean Score						p-value
		0	3m	1 year	3 year	5year	9 yers	
Physical	31	47.4 ±14.24	57.89± 13.2	65.53± 12.8	68.50± 14.7	69.99± 13.9	70.11± 13.4	<0.001
Psychological	31	56.18± 9.22	67.55± 14.1	75± 11.12	77.31± 12,2	79'33± 11'9	81.21± 12'3	<0.001
Social relation	31	42.67± 10.9	73.48± 13.7	74.26± 11.6	74.6± 12,8	78.4± 13,4	79.2± 12,4	<0.001
environmental	31	55.02± 11.8	71.49± 10.4	78.50± 9.3	79.39± 10,3	81.31± 11.3	82.21± 12.2	<0.001

Table 2: Showing the result of WHOQOL-BREF

For this study's population, we obtained a mean total score of 72.26% at the end of 1 year. The physical domain score was 65.53%, the psychological score was 75%, the social relation score was 74.26% & the environmental score was 78.5%. The 'p-value is shown in the table & it shows a significant difference in each of the four domains obtained after the intervention and results shown for 9 years with significant P value,

Discussion:

Decisions regarding elective surgery for adult patients should be particularly thoughtful given the complexities of adult patients. The outcome should be subject to scrutiny to ensure continual surgical success. Patient satisfaction is the principal means used to measure the result of facial cosmetic Surgeries. It is meaningless to have the surgeon pleased with the procedure, but the patient is unhappy with it. In such a case, the procedure can't be considered a successful one. Numerous objective measures have been developed and reported in the medical literature. However, they tend to concentrate

only on one aspect of nasal form or are complicated or cumbersome to administer. To have a complete and meaningful objective assessment of the clinical quality of life function and an improvement in psychological function, we have taken four standard instruments viz, ROE, GBI, WHO QOL and PHQ.

According to a systematic review, Barone et al.¹⁰ identified three different categories for surgery-specific questionnaires for rhinoplasty: (1) functional self-assessment, (2) aesthetic self-assessment, and (3) aesthetic and functional self-assessment. The conclusion drawn from Baron et al.'s systematic review was the need for a PROM that collectively encompasses the functional, psycho-relational, and aesthetic properties to measure the quality of life in patients undergoing rhinoplasty. Gabriel Bijos etal¹¹, used the ROE questionnaire to compare patient satisfaction after surgery and found that the mean satisfaction value was 73.25%(25-00%) for primary rhinoplasty and 72.02% (45.83 - 91.67%) for secondary rhinoplasty. Using the

ROE scale, our study obtained an overall mean value of 57.57% . The male & female satisfaction were 56.75 & 59.21, respectively, whereas the mean satisfaction was 57.57% after primary rhinoplasty & 46.83% after revision rhinoplasty. Senior consultants did all the surgeries, and we believe that ROE is an easy-to-administer questionnaire to evaluate patients after rhinoplasty.

The GBI is a reliable tool for retrospective measurement of QOL after surgery and gives a more accurate assessment of patient benefit after intervention than either subjective or objective measurement. Satisfaction in adolescent rhinoplasty patients, one of the rapidly growing demographic group among aesthetic surgery patients, are complex due to the interplay of social, psychological, and physiological factors inherent to their management in whom, our study notice significant enhancement within multiple parameters of the GBI. The mean total GBI in the presented study was 63.21%, in a possible score range of -100 to + 100. This evident positive result represents an overall improvement in health status after the surgery. The subscale analysis of the result showed higher scores for the general benefit subscales and social support subscale than the physical health status score.(63.21 & 64.13 vs 55.5 respectively).

The average time between surgery and administration of the questionnaire was three months & six months. The mean scores for the patients served at three months & 6 months showed marked differences in values in cases of the total score, general benefit & social support scores. In contrast, the physical health score didn't show any significant change. This may be attributable to improving nasal appearance as postoperative oedema

subsides, gaining self-confidence and becoming less self-conscious as they assimilate their new body image.

The other scale we used specifically for assessing the psychological performance after surgery was the WHO QOL BREF scale. The instrument produced profiles with four domains, including physical, social & environmental apart from psychological domains. The mean value of score in the psychological domain after surgery was 75 ± 11.12 , showing markedly increasing trends towards overall psychological performance.(p value<0.001).

In the study, we also compared the mean change in total score over time. The change in score value was significantly higher in the first follow-up period than in the subsequent follow-up period(34.37% vs 6.8%). This change could be because most of the postoperative soft tissue remodelling & oedema clearance occurs in the first few months of surgery.

The end objective of rhinoplasty was fundamentally to positively alter the patient's psyche. By making what the patients perceive as an improvement in appearance, the patient's self-perception of their body is changed, resulting in an impact on the patient's well-being and conduct.

Our study population used a PHQ questionnaire to diagnose common mental disorders. The community showed only one patient having the somatoform disorder, two patients having anxiety syndromes & one patient having alcohol abuse. The specific mental conditions persisted even after the surgical procedure. This could be because the nasal symptomatology was not associated with the specific mental disorder they had. Another shortcoming in using the questionnaire was that it could not form an ideal community for diagnosing specific conditions due to the low sample size.

Apart from diagnosing diseases, the questionnaire also identified different stressors many patients had. In our study, most patients didn't have stressors. Patients with some stressors were probably unrelated to a nasal deformity, as the stressful factors were not relieved even after the surgery. The factors are already shown in the table in the result section.

Conclusion

WHO QOL BREF and Glasgow benefit inventory are validated scales for use in rhinoplasty patients to study the satisfaction scores and quality of life. All patients needs to be counselled and discussed regarding the possible outcome, satisfaction and QOI both prior to and after surgery.

References

1. Davis RE (2006) Rhinoplasty and concepts of facial beauty. *Facial Plast Surg* 22(03):198–203 .
2. Cosmetic Surgery National Data Bank (2014) Statistics 2013 *Aesthet Surg J* 34(1 suppl):1S–22SISAPS
3. International Survey on Aesthetic/Cosmetic Procedures Performed in 2014 (2014) International Society of Aesthetic Plastic Surgery. Available from: <http://www.isaps.org/Media/Default/global-statistics/2015ISAPS Results.pdf>
4. Faria FS, Guthrie E, Bradbury E, Brain AN (1999) Psychosocial outcome and patient satisfaction following breast reduction surgery. *Br J Plast Surg* 52(6):448–452 17.
5. Bowling A, Jacobson B, Southgate L (1993) Explorations in consultation of the public and health professionals on priority setting in an inner London health district. *Soc Sci Med* 37(7):851–857 18.
6. Margraf J, Meyer AH, Lavalley KL (2013) Well-being from the knife? Psychological effects of aesthetic surgery. *Clin Psychol Sci* 1(3):239–252
7. Group W (1994) Development of the WHOQOL: rationale and current status. *Int J Ment Health* 23(3):24–56 31.
8. Orley J, Kuyken W (1994) The development of the World Health Organization Quality of Life Assessment Instrument: preliminary data. *Qual Life Res* 3(1):53–54
9. Robinson K, Gatehouse S, Browning GG. Measuring patient benefit from otorhinolaryngological surgery and therapy. *Ann Otol Rhinol Laryngol.* 1996;105:415–422.
10. Barone M, Cogliandro A, Di Stefano N, Tambone V, Persichetti P (2016) A systematic review of patient-reported outcome measures after rhinoplasty. *Eur Arch Otorhinolaryngol* 247(4):1807–1811
11. Long-term evaluation in aesthetic rhinoplasty in an academic referral center. *Braz. j. otorhinolaryngol. (Impr.)* . 2010, vol.76, n.4, pp.437-441