

# Comparison Between Patient and Plastic Surgeon Aesthetic Analysis in Rhinoplasty Consultation

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**Background:** The surgeon's aesthetic analysis of the nose is based on scientific measures of its proportions and dimensions. Because the primary aim of rhinoplasty is targeted at the patient's satisfaction with self-image, patients' perception and satisfaction are of paramount importance. The aim of this study was to evaluate surgeon versus patient nasal aesthetic analysis.

**Method:** A cross-sectional study was conducted on 57 primary rhinoplasty consultations during the period June and September 2017 at the Plastic Surgery Clinic in King Fahad Hospital-Hofuf. The surgeon and the patients were handed identical questionnaires before the consultations. The questionnaire has 27 components regarding the nasal appearance.

**Results:** The surgeon's and the patients' perceptions regarding reliability was assessed by Cohen's Kappa and Pearson's correlation coefficient. There was moderate agreement with the overall appearance of the nose ( $\kappa = 0.2-0.39$ ). The most agreed-upon components were "dorsal hump" ( $\kappa = 0.6, P = 0.001$ ) and "tip drops down" ( $\kappa = 0.41, P = 0.002$ ). The columella and the suitability of the front part of the nose had the largest disagreement ( $\kappa = -0.06$  and  $\kappa = -0.09$ , respectively). The level of agreement among most of the questionnaires' components was slight or nonexistent ( $\kappa = 0.004-0.39$ ).

**Conclusions:** The surgeon and patients have a minimum agreement regarding the view of nasal appearance, mostly with the suitability of the front part and the columella. The parts of the nose agreed upon the most were "dorsal hump" and "tip drops down". Exploring the differences between patient and surgeon aesthetic analysis of the nose will aid in addressing the discrepancies and improving surgical outcome and satisfaction. (*Plast Reconstr Surg Glob Open* 2023; 11:e4948; doi: 10.1097/GOX.0000000000004948; Published online 26 April 2023.)

## INTRODUCTION

Social demands and beauty standards have driven patients to pursuing the enhancement of their appearance and improving their quality of life. Rates of cosmetic and aesthetic surgery have shown a reconcilable increase as per 2017.<sup>1</sup> The indications of cosmetic surgery are based on subjective assessment by both the patient and surgeons.<sup>2,3</sup> In rhinoplasty, the surgeon's aesthetic analysis of the nose is based on scientific

measures of its proportions and dimensions in relation to the face.<sup>2,3</sup> However, patients seeking rhinoplasty usually have specific concerns about their nasal appearance that may not match with the aesthetic analysis of their surgeons.<sup>2,3</sup>

Surgeons have implemented different measures to assess the success of rhinoplasty, based on anthropometrical and functional standards, and standards related to experts' ratings and perceived patient satisfaction.<sup>4</sup> Because the primary aim of rhinoplasty is targeting patients' satisfaction with self-image, the most important measure of success would be patient-based improvement of quality of life.<sup>2,5</sup> Patient's expectations and the preoperative consultation were found to play the most significant role in patient satisfaction postoperatively in several studies.<sup>2,6</sup> Thus, understanding patients' desires, concerns, and the reasons behind requesting a rhinoplasty are fundamental to establish a healthy foundation and to explore patient expectations.

The differences in perception of nasal appearance between the patient and surgeon has been paid

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insufficient attention in the literature. Shipchandler et al found multiple significant differences between the assessments of the surgeon and patients, especially regarding the details of the nose.<sup>2</sup> Approaching the patient properly with an emphasis on concerns and desires contributes to the understanding of the possibilities and limitations of the surgery, thereby setting a more realistic expectation of the surgical outcome. Studying how the patient and surgeon assess the nasal appearance would help in guiding the discussion toward making a joint decision. This would help in understanding the perspective of the patients, whether their expectations are reasonable, and possibly reducing the incidence of revision rhinoplasty. Hence, the objective of the current work was to evaluate the patients' analysis of their nasal appearance in comparison with the aesthetic analysis of their surgeon during preoperative rhinoplasty consultations.

### METHODS

This is an observational study performed in plastic surgery clinic at King Fahad Hospital – Saudi Arabia, which is a 550-bed government hospital belonging to the ministry of health. Institutional review board approval was obtained from the hospital. All patients attending the plastic surgery clinic at KFHH for primary rhinoplasty consultations from June to September 2017 were included in the study. The study included a single surgeon's assessment. Approval to participate was taken by signing a minimal risk consent form. Then they were handed a self-analysis questionnaire along with a mirror before starting their consultation. Patients who had been consulted for a rhinoplasty before, who had rhinoplasty, or who had nasal trauma within a year were excluded from the study. A detailed, simple, check-list of 27 component was developed with the input of all authors as well as referring to the questionnaire developed by Shipchandler et al.<sup>2</sup> The checklist was divided into five sections: overall appearance, dorsum, nostrils, tip, and columella. Each section had several descriptive terms, such as big, long, wide, deviation, and looks normal. The questionnaire moreover included demographics, level of education, and monthly income. Patients attending plastic surgery clinic for primary rhinoplasty consultations were handed the questionnaire in the waiting room and were given brief instructions on how to fill it. A mirror was available for convenience. Afterward, the surgeon filled an identical questionnaire before the patient stated their main complaint. Both questionnaires were collected by the primary investigator. The main outcome of the study is to evaluate the difference between patients' self-analysis and the surgeon's analysis.

Data were assessed using Statistical Package for the Social Sciences, version 24 (SPSS Inc, Chicago, Ill.). All answers for the 27 questions were coded as “No = 0” and “Yes = 1”. Continuous data were represented as mean ± SD, and categorical data were represented as frequency (%). Cross tabulation analysis was conducted and Cohen Kappa coefficient was calculated. The interpretations of kappa outcomes were

### Takeaways

**Question:** Is there a difference between a plastic surgeon's and patient's aesthetic views regarding rhinoplasty? Would it affect the surgical outcome and patient satisfaction?

**Findings:** Yes, there is a discrepancy between the patient's view when compared with a plastic surgeon's assessment.

**Meaning:** This may clearly explain the conceptual differences between the two parties with regard to the post-operative outcomes. Therefore, a unified preoperative consultation is mandatory to convey the surgeon's point of view regarding the expected postoperative outcomes to the patients, thus facilitating a similar cosmetic perception. Moreover, a further study with a larger sample supported by multiple surgeons' points of view is still needed to confirm our results.

as follows: less than 0.00 = poor; 0.00–0.20 = slight; 0.21–0.40 = fair; 0.41–0.60 = moderate; 0.61–0.80 = substantial; 0.81 = almost perfect. The institutional review board of King Faisal University and King Fahad Hospital approved this study. Minimal risk consent was signed by the participants.

### RESULTS

The study initially recruited 60 patients. However, 57 patients continued the study. Among them, 20 (35.1%) were men and 37 (64.9%) were women. The mean age was 28.13 years. Table 1 shows the summary of demographics.

#### Questionnaire Answers

Inter-rater reliability of the surgeon's and the patients' answers was tested through Cohen Kappa coefficient. The most agreed upon component was “dorsal hump”

**Table 1. Patient Demographics**

Variables	Statistics
Patients	57
Age (mean ± SD)	28.13 (±6.83)
Gender, N (%)	
Masculine	20 (35.1%)
Feminine	37 (64.9%)
Status N (%)	
Single	23 (40.4%)
Married	31 (54.4%)
Previously married	3 (5.3%)
Education	
High school	19 (33.3%)
University	35 (61.4%)
Postgraduate	2 (3.5%)
Work sector N (%)	
Government	27 (47.4%)
Private	3 (5.3%)
Nonworker	22 (38.6%)
Retired	1 (1.8%)

( $\kappa = 0.620$ ,  $P < 0.001$ ). The “dorsal hump” showed a strong positive and significant correlation between patient and surgeon (paired sample correlation was highest = 0.629,  $P < 0.0001$ ). Of the 27 questionnaire components, the statistically significant and agreed upon components are consistent with gross appearance of the nose. Too long nose, dorsal hump, and tip dropping down had the highest Kappa value (0.339, 0.620, and 0.405, respectively). Pearson correlation values were consistent with Kappa values, adding a wide tip as a significant factor too (0.376,  $P < 0.005$ ).

The least agreed upon component was “front part fits” ( $\kappa = -0.094$ ,  $P = 0.475$ ). The “front part fits” showed a nonsignificant and lower correlation between the patient and surgeon (paired sample correlation coefficient =  $-0.095$ ,  $P = 0.483$ ). Tip shape, columella, and nostril size, which are considered details, had negative Kappa values, correlating to major disagreement (Tables 2 and 3).

## DISCUSSION

Patients who are elected for rhinoplasty must have a comprehensive assessment by the plastic surgeon. Although the assessment is essential in each rhinoplasty consultation, it may not take into consideration the patients’ self-perception.

Preoperative consideration of the patients’ thoughts and self-perception compared to the surgeon’s facial analysis may lead to better postoperative patient satisfaction.

This concept may lead to a significant decrease in the number of revision rhinoplasties.<sup>2</sup>

The current study was carried out to assess this notion. In most cases, the surgeon’s and patients’ assessments are unlike, and discrepancies may exist between the two parties’ perceptions,<sup>2</sup> as patients are usually not acquainted with the knowledge of anatomical and functional aspects and may expect unrealistic appearance.

In order to overcome such discrepancies, it is essential for the surgeon to thoroughly investigate the patients’ intentions and expectations for their postoperative image. This requires great effort by the surgeon based on each demand.<sup>3</sup> Rohrich et al has recommended that preoperative assessment should be repeated several times in order to achieve postoperative patient satisfaction.<sup>7</sup>

Many authors have stated that the anatomical and physical nasal appearance is of crucial importance to the patients and their society.<sup>8,9</sup> Although beauty is subjective and there is no one way to define it, the patients’ quality of life may be significantly altered with perceived improved appearance, as it will add to the patients’ confidence and self-esteem.<sup>10</sup>

The current study data coincide with other authors,<sup>2</sup> who have divided their analysis into six particulars. These include many factors, namely the overall nasal appearance, tip of the nostril, nasal width, overlying skin, and nasal straightness. Shipchandler et al reported data showing a significant statistical difference when both parties’ perception is concerned ( $P < 0.001$ ). Nevertheless, only a few works have studied this notion.

**Table 2. Frequency**

Component	Category	Surgeon (%)	Patient (%)	Same (%)	Kappa	P
1. Too big	Nose	8 (14)	11 (19.3)	38 (66.7)	0.334	0.011
2. Too long		15 (26.3)	2 (3.5)	40 (70.2)	0.339	0.003
3. Too short		0	1 (1.8)	57 (98.2)		
4. Deviated		3 (5.3)	15 (26.3)	39 (68.5)	0.109	0.305
5. Looks normal	Anterior part	2 (3.5)	3 (5.3)	52 (91.2)	0.240	0.067
6. Big		9 (15.8)	18 (31.6)	30 (52.6)	0.071	0.572
7. Thick skin		20 (35.1)	4 (7.1)	33 (57.9)	0.107	0.314
8. Front part fits		10 (17.5)	12 (21.1)	35 (61.4)	-0.094	0.475
9. Wide	Dorsum	8 (14)	15 (26.3)	34 (59.7)	0.196	0.127
10. Narrow		7 (12.3)	2 (3.5)	48 (84.2)	-0.058	0.590
11. High		5 (8.8)	5 (8.8)	47 (82.5)	0.069	0.604
12. Low		3 (5.3)	2 (3.5)	52 (91.2)	-0.044	0.734
13. Has a hump	Nostrils	2 (3.5)	5 (8.8)	50 (87.7)	0.620	0.000
14. Looks normal		8 (14)	5 (8.8)	44 (77.2)	0.106	0.413
15. Wide		2 (3.5)	20 (35.1)	35 (61.4)	0.288	0.007
16. Narrow		20 (35.1)	1 (1.8)	36 (63.2)	-0.035	0.458
17. Differ in size	Tip	5 (8.8)	6 (10.5)	46 (80.7)	0.046	0.729
18. Look normal		10 (17.5)	11 (19.3)	36 (63.2)	0.070	0.597
19. Wide		5 (8.8)	12 (21.1)	40 (70.2)	0.363	0.005
20. Bifid		4 (7)	1 (1.8)	52 (91.2)	0.248	0.036
21. Box shaped	Columella	14 (24.6)	1 (1.8)	42 (73.7)	0.059	0.439
22. Elevated		2 (3.5)	6 (10.5)	49 (86)	-0.056	0.621
23. Drops down		4 (7)	9 (15.8)	44 (77.2)	0.405	0.002
24. Looks normal		6 (10.5)	7 (12.3)	44 (77.2)	0.003	0.984
25. Sticks too far		0	24 (42.1)	33 (57.9)	0.083	0.116
26. Retracted		2 (3.5)	8 (14)	47 (82.5)	-0.059	0.561
27. Looks normal		30 (52.6)	0	27 (47.4)	0.097	0.088

**Table 3. Pearson Correlation**

Component	Category	Correlation	P
1. Too big	Nose	0.336	0.011
2. Too long		0.393	0.002
3. Too short			
4. Deviated		0.136	0.313
5. Looks normal		0.243	0.069
6. Big	Anterior part	0.075	0.580
7. Thick skin		0.133	0.323
8. Front part fits		-0.095	0.483
9. Wide	Dorsum	0.202	0.131
10. Narrow		-0.071	0.598
11. High		0.069	0.612
12. Low		-0.045	0.740
13. Has a hump		0.629	0.000
14. Looks normal		0.108	0.422
15. Wide	Nostrils	0.355	0.007
16. Narrow		-0.098	0.467
17. Differ in size		0.046	0.735
18. Look normal		0.070	0.605
19. Wide	Tip	0.376	0.004
20. Bifid		0.278	0.036
21. Box shaped		0.103	0.448
22. Elevated		-0.065	0.629
23. Drops down		0.416	0.001
24. Looks normal		0.003	0.984
25. Sticks too far	Columella	0.208	0.120
26. Retracted		-0.077	0.569
27. Looks normal		0.226	0.091

Recently, the overall post-rhinoplasty satisfaction rate has reached up to 83.6%.<sup>4</sup> On the other hand, the rates of revision rhinoplasty range from 19.6% to 23%, being higher than most other aesthetic procedures.<sup>3,6</sup> The suggested explanations are due to the patients' unrealistic expectations postoperatively as well as the difference in the perceptions of aesthetics among surgeons and their patients.<sup>11-14</sup>

Patnaik et al explored the use of the Derriford Assessment Scale for objective assessment of psychological distress associated with living with a problem of appearance, in addition to assessment of anatomical deformity in patients undergoing cosmetic rhinoplasty, and found that better overall postoperative score improved from  $1.32 \pm 0.24$  to  $1.27 \pm 0.24$ , which was a statistically significant improvement in subscales of general, sociosexual, and bodily self-consciousness of appearance. However, they did not include the surgeon's assessment of the outcome, but recommended this be explored in future research.<sup>15</sup>

Saadoun et al explored the importance of establishing any preexisting skin condition (thick skin, rosacea, acne) that the patient might present with and treat accordingly in a multidisciplinary manner, including a dermatologist to ensure a good cosmetic outcome.<sup>16</sup> This form of assessment, which does not take into account the patients' view regarding their condition, is one sided, whereas the assessment presented by our article, which is two sided, might present with better and more acceptable outcomes from the patients' point of view.

Guarro et al investigated the effects and changes on voice after rhinoplasty on a population of 51 patients who were followed up for 2 years post-surgery.<sup>17</sup> They used subjective and objective assessment: subjective assessment in the form of a questionnaire, and objective assessment in the form of a spectrographic study through computerized recordings and a software analysis.<sup>17</sup> They found that there is statistically significant difference between subjective and objective assessment regarding voice changes. Subjective assessment sometimes can be misleading, and therefore, objective assessment provides an adjuvant role in adjusting the patients' expectations regarding the procedure they want to undergo.

## CONCLUSIONS

In conclusion, our research demonstrates a discrepancy between the patient's view and a plastic surgeon's assessment; our results may help explain the conceptual differences between the two parties with regard to the postoperative outcomes. Therefore, a unified preoperative consultation is important to convey the surgeon's point of view regarding the expected postoperative outcomes for the patients, thus facilitating a similar cosmetic perception. Moreover, a further study with a larger sample supported by multiple surgeons' points of view is still needed to confirm our results.

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## DISCLOSURES

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