

Prevalence and Outcome of Septorhinoplasty Among Undergraduate College Students

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ABSTRACT

Background: Septorhinoplasty is a complex surgical procedure aimed at restoring nasal function and enhancing esthetic appearance, thereby improving quality of life. Patient satisfaction is often considered a key indicator of the procedure's success.

Methods: To explore the general view on septorhinoplasty, extent of spread, opinions, side effects, and outcomes of surgery and patients' satisfaction among undergraduate universities' students. Cross-sectional study with convenient sample. The information was gathered using an online-based questionnaire, by subjective method via Rhinoplasty Outcome Evaluation "ROE" questionnaire assessment, targeted at students of different colleges.

Results: There were 527 participants, who completed the questionnaire in multiple universities, male (17.1%), female (82.9%), age ranged 19-25 years, with a mean age of 22 ± 3.56 SD years, with 305 of them (57.9%) liking the shape of their noses, nasal width was their primary esthetic concern to change (40%), and fear was the most common factor that influence the procedure (56%). Regarding participant's satisfaction (86.37%), according to ROE scoring, it was preoperative 26.13 ± 4.08 SD, becoming 81.27 ± 9.45 SD postoperatively, about snoring had good improvement (70%), with no postoperative complications.

Conclusion: Septorhinoplasty had assured benefits for functional and esthetic consequence of the nose, with excellent average patient satisfaction results via "ROE" assessment. Sleep and snoring showed good improvements, with no postoperative complications.

Keywords: Nose, septorhinoplasty, undergraduate university students

Introduction

Rhinoplasty is a commonly applied surgical technique in the field of plastic surgery in the USA, with high rates achieved yearly. Its spectrum of applications extends from pure cosmetic to exclusively functional reconstructive procedures. Patient's motivation, along with a comprehensive understanding of nasal anatomy, physiology, and the surgical procedure, is vital for achieving satisfying outcomes. Therefore, these items are essential for operative decision-making, as is preoperative clarification of patient expectations to ensure satisfaction.¹

Assessing its outcomes requires both patient-reported outcomes questionnaires, subjective and objective input, which include validated tools like Standardized Cosmesis and Health Nasal Outcomes Survey and Rhinoplasty Outcomes Evaluation Questionnaires. These aim to measure the quantity of life alteration of the postoperative status, and they are plausibly the paramount evaluation of a surgery's efficacy outcome. Hence, the choice of the subject is regarded as the main favorable surgery success prediction, and it abstains from prosecution or revision operation.²

Ahmad Mohammed Al Alwan¹ 

Waleed Arif Tawfeeq Al-Ani² 

Mohammed Radef Dawood¹ 

¹Department of Otorhinolaryngology, Mustansiriyah University College of Medicine, Baghdad, Iraq

²Department of Family and Community Medicine, Mustansiriyah University College of Medicine, Baghdad, Iraq

Corresponding author:

Mohammed Radef Dawood

✉ mohmadradef@yahoo.com

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So, septorhinoplasty is still a challenging and complex procedure, aiming to achieve a beautiful appearance of the nose and restore its function, as well as improve life quality, so, now a day it's a trend to consider altering it from invasive to less invasive techniques.³

It became a major cosmetic procedure done by otorhinolaryngologic and plastic specialized surgeons. The surgeon must assess the needs for which the patient desires to perform the surgery, as well as the desire to satisfy other people's social and professional aspirations. Patient satisfaction was a key factor for the success of such a procedure. Moreover, many studies were performed targeting a reliable questionnaire to be applied to patients subjected to esthetic surgery and also to measure patient satisfaction.⁴

The aim of the current study was to know the general view of the community members on rhinoplasty, the extent of their spread, the opinions of those who carried them out, as well as the side effects, and to evaluate the outcome of rhinoplasty surgery with the degree of subjective patients' satisfaction.

Material and Methods

The current study was conducted in accordance with the ethical principles of the Helsinki Declaration and approved by the Ethics Institutional Committee, protocol number 168 at March 1, 2024, with informed consent obtained.

Study design: Cross-sectional study with convenient sample.

Study setting: Online survey targeted at many undergraduate universities' students.

Data collection: Data was collected through the filling out of the questionnaire by the students.

Study tool: The questionnaire was designed in 2 parts:

Part 1 covers different demographic characteristics of students, which include age, gender, and academic university.

Part 2 includes questions inquired about the subjective assessment via "The Rhinoplasty Outcome Evaluation" (ROE) questionnaire. Also, it was investigated using different approaches in 12 questions focused on the history of rhinoplasty, such as why people are doing this surgery, if the people like the outcome of the surgery or not, whether they would do it again or not, and if people generally are for or against the idea of doing the surgery. Again, the questionnaire included questions about snoring, improving sleeping, and postoperative complications.

The subjective assessment by "The Rhinoplasty Outcome Evaluation" (ROE) questionnaire, which was designed by Alsarraf,⁵ evaluates the

pre and postoperative functional and esthetic components of patient satisfaction as in the following chart:

1. Do you guess your friends are fond of your nasal appearance?
Absolutely no (0), A little (1), More or less (2), so much (3), Absolutely yes (4)
2. Nasal breathing?
Absolutely no (0), A little (1), More or less (2), Very much (3), Absolutely yes (4)
3. Do you believe that your friends and those nearby are fond of your nose?
Absolutely no (0), A little (1), More or less (2), Very much (3), Absolutely yes (4)
4. Do you believe that your nasal appearance restricts your public tasks?
Always (0), Frequently (1), Sometimes (2), Rarely (3), Never (4)
5. Your confidence about your greatest possible nasal appearance?
Absolutely no (0), A little (1), More or less (2), Very much (3), Absolutely yes (4)
6. Do you want to surgically change your nasal function or and appearance?
Certainly yes (0), Very likely yes (1), Possibly yes (2), Probably no (3), Certainly no (4)

The questions were answered within a scale of scores between 0 and 4, then the sum of all answers from every question was divided by 24 and then multiplied by 100, and the final value gained was between 0 and 100 (0 stands for minimal patient contentment and 100 for the maximal level), and results were classified into 4 divisions as follows: from 0 to <25 was noted as poor, 25 to <50 (acceptable), from 50 to <75 (good), and from 75 to 100 (excellent).

Statistical Analysis

IBM SPSS v.29 (IBM SPSS Corp.; Armonk, NY, USA). Data were accounted for frequency, percentage, and standard deviation (SD). Statistical significance was noted when the *P* value was $\leq .05$.

Results

Among 527 students completed the questionnaire and agreed to participate in this research, the mean age of 22 ± 3.56 SD years, with a female: male ratio of 4.8 : 1.0. Table 1 shows the sociodemographic characteristics of the participants.

About 99.2% believe that rhinoplasty surgery has spread widely these days; 42.5% of people resort to changing their nose, even in the absence of an actual health problem, with significant result, as the *P* value was .021. Table 2 shows the personal opinion of people about rhinoplasty surgery.

Regarding participant's satisfaction (86.37%), according to average "Rhinoplasty Outcome Evaluation" (ROE) scoring was preoperative: 26.13 ± 4.08 SD, and became 81.27 ± 9.45 SD postoperatively, with significant result, as the *P* value was .001.

Out of the overall 527 participants, 259 of them (49.14%) were not satisfied with their nasal appearance. The nasal appearance concern was with the nose width (40.2%), as shown in Table 3, which show the overall nasal appearance esthetic concerns patterns.

MAIN POINTS

- *Septorhinoplasty had proven benefits in terms of functional and aesthetic outcome, with excellent patient's satisfaction.*
- *Sleep and snoring parameters showed good improvements after it with no post-operative complications.*
- *Good surgeon selection, makes the cosmetic surgery change body expectation, and understanding its options, and possible outcomes for the best decision taken.*

Table 1. The Sociodemographic Characteristics of the Participants

Characteristics		No.	%
Gender	Male	90	17.1
	Female	437	82.9
Age (years)	19	136	25.8
	20	74	14.0
	21	113	21.5
	22	89	16.9
	23	67	12.7
	24	23	4.4
	25 years	25	4.7
	Mean SD (range)	223.56 (19-25)	
Colleges	Medicine	387	73.4
	Education	83	15.8
	Dentistry	29	5.5
	Pharmacy	28	5.3

Table 2. The Personal Opinion of Participants About Rhinoplasty Surgery

Personal Opinion	No.	%
In your personal opinion, do you think that plastic surgery has spread widely these days?	523	99.2
Encourage plastic surgery in general	206	39.1
Is there something in the body or face that you want to have plastic surgery on?	224	42.5
Like the shape of the nose	303	57.5
Have you ever had an injury or a broken nose?	77	14.6

Table 3. The Esthetic Concerns (Nasal Appearance)

Nasal Appearance	No.	%
Nose width	104	40.2
View from the side	96	37.1
Nose front	90	34.7
Nasal ala size	90	34.7
Hump on the back of the nose	62	23.9
Nose tip height above face level (tip projection)	34	13.1
Nose length	32	12.4
Nose skin	24	9.3
Broken nose	16	6.2

Among the 527 participants, about 94 participants (17.8%) had already undergone previous surgery to their nose; only 46 (48.9%) of them were satisfied as shown in Table 4.

Among the 350 participants who underwent septorhinoplasty, the most common factor that influence the procedure was fear (56.0%), with significant result, as the *P* value was .001. Table 5 shows the factors that influence their desire to have septorhinoplasty surgery.

Regarding the advantages of rhinoplasty, 33 participants (35.1%) wanted a beautiful nose appearance from 94 persons who underwent rhinoplasty surgery, as, Table 6 showed that.

About its complications, there were no functional complications, as nasal obstruction, septal perforation, rhinitis, and hyposmia. Additionally, no esthetic complications, such as depression, anxiety, and psychosocial distress, were detected in the current study.

Table 4. The History of Septorhinoplasty Procedure

Surgical Procedure	No.	%
Have you ever undergone previous surgeries to beautify the outer shape of nose and correct breathing problems before?	Yes	94 17.8
	No	433 82.2
Satisfied with the shape of new nose after rhinoplasty	Yes	46 48.9
	No	48 51.1
Accept cosmetic rhinoplasty (personal point of view)	Yes	170 32.2
	May be	199 37.8
	No	158 30.0

Table 5. The Factors that Influence to Have Septorhinoplasty Surgery

Influences Factors	No.	%
Fear from the result	196	56.0
Fear from operations in general	142	40.6
The religious beliefs	119	34.0
The financial status	34	9.7
Customs and traditions	16	4.6

Table 6. The Benefits and Gains That People Want to Get From Rhinoplasty

Advantages	No.	%
Fine-looking	33	35.1
To open the airway (improve breathing)	16	17.0
Smaller nose size	17	18.1
Increase self-confidence	15	16.0
To get rid of bullying	13	13.8

However, in terms of sleep and snoring, about (70.0%) showed improvements, while 26.0% reported no change, and 4.0% experienced worse results, with significant findings, as the *P* value was .011.

Discussion

The nose is the central and major facial prominent structure, and it has a vital relation to facial harmony. This parameter was essential in the participant analysis for rhinoplasty. To gain more accurate results and better surgical work, despite the technique used, the main goal of rhinoplasty is to achieve esthetics together with respiratory nasal function.⁶

In the current study, about 60.9% of participants do not encourage undergoing plastic surgery. However, this doesn't agree with the American Society for Aesthetic Plastic Surgery,⁷ which stated that there has been an overall rise in plastic techniques since 1997. Additionally, Sarwer et al⁸ who attribute reasons of this recent high level to the following factors: the presence of plastic surgeons, the impact of media, developmental awareness, and characteristic patient components.

Percentage of females' participation in this questionnaire was more than that of males, because females always strive for beauty and that plastic surgeries have proven great efficacy in correcting the external shape of the nose and changing the shape and measurements of the face in a wonderful way.

Delinsky et al,⁹ detected that the social media exhibition and surrogated experience predicted a major probability of undergoing plastic surgery, as found in the current study.

In the current study, 14.6% of patients who underwent rhinoplasty had a history of nasal injury or fracture, likely due to the nose's prominent position, making it a common site of facial trauma. Even minimal nasal trauma can lead to significant esthetic and/or functional issues. Konstantinidis et al¹⁰ reported that, while most individuals consider rhinoplasty primarily for cosmetic reasons, the procedure may also be medically necessary. In patients undergoing functional rhinoplasty, the primary goal is often to correct anatomical abnormalities resulting from injury that impair nasal breathing. In many cases, however, rhinoplasty may address both functional and cosmetic concerns.

Satisfaction of included patients was associated with various factors, as sex, age, education grade, civilization, ethnicity, and expectation level, as well as the preoperative evaluation. The same findings were detected by the Swain¹¹ study who detected that the patient appeasement intensities revealed the highest amelioration postoperatively.

The average patient satisfaction detected in the current study, by "ROE" assessment was excellent; yet, Hassen¹² concluded in his study that the post-rhinoplasty dissatisfaction rate was high, and this was a result in both the variety of the technique and the hardness in explaining the involved patient expectations.

The most common reason that makes a person to undergo rhinoplasty in the current study was nasal width, while in the study made by Izu,¹³ they detected that the most prevalent reasons for undergoing rhinoplasty were nasal hump, and they also concluded that the rhinoplasty procedure was not merely to enhance the nasal appearance and improve an individual's nasal breathing function, but it provides increased individual self-confidence and emotional benefits.

Valsamidis et al¹⁴ reported in their research that the potential risks of rhinoplasty might include; difficult nasal breathing, permanent numbness in and around the nose, persistent pain, discoloration, permanent swelling, scar formation, or nasal septal perforation, with a religious factor, since plastic surgery raises widespread controversy among different groups of society, although it has received strong attack by religious scholars and social experts.

According to the results of the current study, social media has significantly influenced individuals' interest in cosmetic procedures aimed at enhancing physical appearance. This finding aligns with the study by Lee et al,¹⁵ which reported that patient satisfaction related to social media presence has become increasingly important. Their analysis revealed that younger participants, particularly those aged 18-24 years, were more influenced by social media representations of desirable nasal esthetics than by face-to-face consultations with their surgeons.

The current study showed that this type of surgery had improved life quality, snoring, and nasal breathing, and these findings were almost the same as Sharma et al's¹⁶ study.

Also, Soni et al¹⁷ reported high levels of patient satisfaction with post-operative nasal outcomes. Similarly, the study by Khansa et al¹⁸ projected that the percentage of plastic surgeries is expected to increase in the future.

Although no complications were detected in the current study apart from snoring—which showed good improvement—Cochran and Landecker¹⁹ reported that rhinoplasty complications are generally classified as either functional or esthetic. Functional complications

include nasal obstruction, septal perforation, rhinitis, and hyposmia, while esthetic complications may involve patient dissatisfaction, depression, and psychosocial distress. Patients experiencing such outcomes should receive thorough preoperative counseling, as well as strong social support from family, friends, and the healthcare team throughout the postoperative recovery period.

So, the septorhinoplasty surgical outcome results according to this questionnaire revealed that patients must have to bear all the consequences of the operation and to know in advance what the possibilities that may be. Good surgeon selection, not just the least expensive, is important; they should learn how cosmetic surgery can change the body, expectation, and understand its options, as well as the possible outcomes, which helps them make the best decision.

Limitations

It would have been useful to establish a correlation between the subjective functional outcomes and an objective method of quantifying the quality of nasal breathing, especially in dissatisfied patients.

Conclusions

Septorhinoplasty among undergraduate universities' students had assured beneficial for functional and esthetic consequence of the nose; it was affected by patients' demands to have a special facial aspect change, to earn their personal opinion, and to improve their quality improvement. Fear was the most common factor that influenced the procedure. Nasal width was the main nasal appearance concern; additionally, the average patient satisfaction assessment by "ROE" showed excellent results, and sleep and snoring showed good improvements, with no postoperative complications.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

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