Original Article

Lessons from Self-Assessment of Post-Rhinoplasty Complaints; Analysis of 192 Candidates of Secondary Rhinoplasty

Shahriar Loghmani [1], Alireza Loghmani [2], Shirin Loghmani [3], Mohammadreza Zarei [4], Fatemeh Maraki [5*]

1. Department of Plastic Surgery, Ordibehesht Surgical Center, Isfahan, Iran.
2. Department of Dentistry. Isfahan University of Medical Sciences, Isfahan, Iran.
3. Department of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.
4. Autoimmune Diseases Research Center, Kashan University of Medical Sciences, Kashan, Iran
5. Department of Operating Room, School of Nursing and Midwifery, Shahrekord University of Medical Sciences, Shahrekord, Iran

***Corresponding Author:**

Fatemeh Marak

Department of Operating Room, School of Nursing and Midwifery, Shahrekord University of Medical Sciences, Shahrekord, Iran.

Orcid ID: 0000-0001-5528-8927

Email: fmaraki1373@gmail.com

Received: 2022/10/07
Accepted: 2022/12/27

ABSTRACT

Background: Rhinoplasty as the most common aesthetic surgical operations aims to correct deformities of the different structures of the nose with each case its own challenges. We aimed to highlight the importance of self-assessment for rhino surgeons.

Methods: This retrospective descriptive study was done on 192 patients in Ordibehesht Hospital, Isfahan, Iran from April 2017 to Jun 2021. candidate for secondary rhinoplasty, with mandatory aesthetic and optional functional purposes, having previously undergone rhinoplasty with the same or another surgeon. Patients with initial rhinoplasty by the first author were assigned to group 1 (n=102) and the patients who were operated by the other surgeons were in the group 2 (n=90). Data were collected using an author made checklist divided into three parts: overall demographic questions, questions about the patients' aesthetic and functional complaints and objective evaluation by the surgeon.

Results: The most frequent reported complaints led to their current rhinoplasty were about the nasal tip with 161 cases (83.9%), upper nasal part with 98 cases (51%) and mid-nose (middle nose) with 81 cases (42.2%). Besides, respiratory problem was observed in 58 patients (30.2%). Surgeon's skill was significantly associated with occurrence of these two complaints; so that these two complaints were more common in group2 than group1 (*P* value <0.05).

Conclusion: Such assessments resulted to improve the surgical outcomes due to finding the more prevalent problems in own patients than the other surgeons' patients and determining the reasons that leads to change the techniques with regard to the researches and consulting with the colleagues.

KEYWORDS
Self-assessment; Rhinoplasty; Surgery

Please cite this paper as:
Loghmani Sh., Loghmani L., Loghmani Sh., Zarei M., Maraki F. Lessons from Self-Assessment of Post-Rhinoplasty Complaints; Analysis of 192 Candidates of Secondary Rhinoplasty. World J Plast Surg. 2023;12(1):12-19. doi: 10.52547/wjps.12.1.12

INTRODUCTION

Rhinoplasty is the most demanding of all aesthetic surgical operations that each case has its own challenges[1]. Rhinoplasty is surgical procedure aiming to correct deformities of the different structures of the nose and the nasal septum and copying of a beautiful natural nose[2]. The

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license (https://creativecommons.org/licenses/by-nc/4.0/). Non-commercial uses of the work are permitted, provided the original work is properly cited.

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

experienced surgeon should identify requests of patients to manage them during the procedure. A good surgeon should be familiar with the science of aesthetics and have a great deal of surgical skills for performing cosmetic nose surgery. He/she should be able to imagine the nose before rhinoplaty and examine the patient's nose carefully after rhinoplasty[3].

Every surgical operation has a tendency to complications, and only the surgeon who does not operate has no complications. Knowledge of relevant complications and sequelae is essential to enlighten the patient so that an informed decision can be made[4].Rhinoplasty sometimes has disappointing results and may have diverse functional and aesthetic complaints that may necessitate revision or secondary surgery, several studies attested to 5–15% revision rates in rhinoplasty[5].Thus, surgical revisions, also called "secondary rhinoplasties," can be performed to manage the requests of patients and their satisfactions should be at the center of the concerns. Given the widespread practice of rhinoplasties and the increasing requests of patients, it becomes necessary for surgeons, to identify the noses at risk for surgical revision as well as the errors that may happen[6]. The surgeon must always have a defined agreement with the patient, on his needs and expectations and be cautious of pathologic cases[7]. Some rhinoplasties are technically easy to perform and tend to give good results, whereas others are difficult to perform and lead to 'unpleasant' results.

According to the "International Society of Aesthetic Plastic Surgery" (ISAPS) Up to 15% of all patients re-consult a doctor for a revision because they are dissatisfied with their final rhinoplasty result such as functional problem or appearance[8]. The responsible rhinosurgeon has to regard all anatomical and physiological details and to consider ethical and psychological aspects in the preselection and postoperative care of the patient. The surgeons should regularly evaluate their own functions and operative outcomes [9,10]. This can help them identify technical problems. Results of assessment are an important teaching tool and a unique opportunity for the surgeon to gain knowledge and study the postoperative outcome of each applied surgical techniques. Note, there is never just one solution, modifications- or other surgical techniques might always be an option[11]. The surgeon can, after an effective assessment, change the surgical techniques used to resolve common problems and help improve the results in patients and ultimately their satisfaction.

We aimed to highlight the importance of self-assessment for rhino surgeons. If a problem or complication is more prevalent in hands of a surgeon, so some changes in part of surgical techniques is recommended.

METHODS

In this retrospective descriptive study, patients' information was evaluated in Ordibehesht Hospital, Isfahan, Iran from April 2017 to Jun 2021. The patients included in the study were candidates of secondary rhinoplasty, with mandatory aesthetic and optional functional purposes, having previously undergone rhinoplasty with the same or another surgeon.

Patient records of 192 candidates for secondary rhinoplasty were evaluated by a surgeon other than the first author of the article. During the evaluation, patients who had undergone initial rhinoplasty by the first author were assigned to the group 1 (n=102) and the patients who were operated by the other surgeons were in the group 2 (n=90). Then, the aesthetic and functional problems of each group were obtained separately and compared in each group.

Data were collected using an author made checklist that was divided into three parts: overall demographic questions, questions about the patients' aesthetic and functional complaints and objective evaluation by the surgeon. The first part consisted of questions about sex, age, the number of previous surgeries; the time intervals of the last surgery and also the surgeon who performed the last surgery. The second part consisted of questions about the patient's functional and aesthetic concerns. The third part consisted of aesthetic-functional objective evaluation of the nose by the surgeon.

Regarding the patient aesthetic complaints and to better understanding as well as the adequate filling out of the questionnaire, the nose was divided into upper, middle and lower (tip and nasal base) thirds or regions.

The nasal problems in the upper and middle regions were divided into high or low, broad or narrow, deviated and irregularity. Some problems of the lower third are such as nose bulbous tip, narrow/pinched

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

tip, upturned/raised, downturned, prominent/protruding tip, asymmetrical, lacking appropriate tip definition, collapse during inspiration and other changes mentioned by the surgeons about that region. In the nasal base region complaints are broad or narrow such as short or long columella, retracted or unsightly scar; visible graft and other alterations mentioned by the patients that could not be related to the upper, middle and nasal tip regions.

Finally, collected data entered into SPSS, Version 20 (IBM Corp., Armonk, NY, USA). Qualitative data in the forms of frequency and frequency percentage and quantitative data in the forms of mean and standard deviation have been demonstrated. As inferential statistics, respectively, Fisher's exact test and chi-square test have been applied to compare frequency distribution of qualitative data while independent *t*-test used to compare the percentage of concerns.

ETHICS CONSIDERATIONS

We did not to need to provide the permission of the Research Ethics Committee or obtain an ethical code. Because our research data was obtained from patients' problems and complaints of the candidate for secondary rhinoplasty. The collected data was saved in the patient's records by the surgeon in the preoperative evaluating period at the surgeon private office.

RESULTS

Among 192 patients under secondary rhinoplasty, 173 cases (90.1%) were women with the mean age of 32.05 ± 6.55 years and 19 ones (9.9%) were men with the mean age of 30.95 ± 5.32 years. The frequency of previous rhinoplasty in these patients was between 1 and 4 times, and 85.9% of them had only one previous rhinoplasty (Table 1). In addition, the most frequent reported complaints led to their current rhinoplasty were about the nasal tip with 161 cases (83.9%), followed by complaints of the upper nasal part with 98 cases (51%) and ultimately mid-nose (middle nose) with 81 cases (42.2%). Besides, respiratory problem was observed in 58 patients (30.2%) (Table 1).

On the other hand, out of 98 reported cases of upper nasal complaints the most common were of Dorsum irregularity and Wide dorsum and Deviation with the values 22.92%, and 17.2%, 10.4%, respectively, and in contrast, there have been no complaints of Open roof. In addition, evaluating the complaints of the upper nasal based on the surgeons' skill showed that the Dorsum irregularity, Wide dorsum and Saddle complaints were more common in group2 than group1 (*P* value <0.05). Also out of 81 complaints from the mid nasal, most of complaints have been related to Mid vault deviation and Inverted V, with 24.48% and 15.10%, respectively. In addition, surgeon's skill has been significantly associated with occurrence of these two complaints; so that these two complaints were more common in group2 than group1 (*P* value <0.05). Of the 161 complaints reported from the lower portion of the nose, complaints of over projected tip and deviated tip, tip under rotation and alar pinched (bilateral) were 25.52%, 31.25%, 11.46% and 22.40%, respectively. In addition, complaints such as tip over rotation, tip under rotation, and pinched were more common in group 2 (*P* value <0.05) (Table 2). In addition, the incidence of respiratory problems in group 2 with 18.23% was significantly higher than group 1 with 11.98% (*P* value = 0.018).

Table 1: Frequency distribution and descriptive statistics of demographic and clinical characteristics of patients

Characteristics		
Sex	Female n(%)	173(90.1)
	Male n(%)	19(9.9)
Age; year (Mean ± SD)		31.94±6.43
Number of previous rhinoplasties	1 n(%)	265(85.9)
	2 n(%)	21(10.9)
	3 n(%)	3(1.6)
	4 n(%)	3(1.6)
Complaints reported	Upper portion of nose n(%)	98(51)
	Middle portion of nose n(%)	81(42.2)
	Lower portion of nose n(%)	161(83.9)
	Breathing problem n(%)	22(11.5)

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

Table 2: Frequency distribution of reported complaints of patients' candidates for revision rhinoplasty

Complaints reported		Total(n=192)	Surgeon		*P* value
			Group1 (n=102)	Group2 (n=90)	
Upper portion of nose (n=98)		n (%)	n (%)	n (%)	
Dorsum irregularity		44 (22.92)	15 (14.71)	29 (32.22)	0.006
Saddle (too low)		8 (4.2)	1 (0.98)	7 (7.77)	0.027
Hump (too high)		12 (6.25)	4 (3.92)	8 (8.89)	0.232
Deviation		20 (10.42)	10 (9.8)	10 (11.11)	0.816
Wide dorsum		33 (17.2)	8 (7.84)	25 (27.78)	<0.001
Low radix		8 (4.2)	3 (2.94)	5 (5.56)	0.478
High radix		1 (0.52)	0 (0)	1 (1.11)	0.469
Middle portion of nose (n=81)					
Inverted V		29 (15.10)	7 (6.86)	22 (24.44)	0.001
Saddle (too low)		1 (0.52)	0 (0)	1 (1.11)	0.469
Too high		1 (0.52)	1 (0.98)	0 (0)	1.00
Polly beak		16 (8.33)	6 (5.88)	10 (11.11)	0.204
Mid vault deviation		47 (24.48)	15 (14.71)	32 (35.56)	0.001
Lower portion of nose (n=161)					
Over projected tip		49 (25.52)	31 (30.39)	18 (20)	0.135
Under projected tip		4 (2.08)	3 (2.94)	1 (1.11)	0.624
Tip over rotation		16 (8.33)	14 (13.73)	2(2.22)	0.004
Tip under rotation		22 (11.46)	6 (5.88)	16 (17.78)	0.012
Narrow tip		10 (5.21)	4 (3.92)	6 (6.67)	0.737
Wide tip		15 (7.81)	7 (6.86)	8 (8.89)	0.789
Deviated tip		60 (31.25)	26 (25.49)	34 (37.78)	0.086
Asymmetry		12 (6.25)	5 (4.90)	7 (7.78)	0.411
Poor tip definition		1 (0.52)	0 (0)	1 (1.11)	0.469
Alar Pinched	Unilateral	14 (7.3)	6 (5.88)	8 (8.89)	<0.001
	Bilateral	43 (22.40)	11 (10.78)	32 (35.56)	
Soft Triangle Pinched	Unilateral	4 (2.08)	2/4(50)	2(2.22)	0.216
	Bilateral	10 (5.21)	8 (7.84)	2(2.22)	
Excess show	Alar retraction	18 (9.38)	5 (4.90)	13 (14.44)	0.075
	Hanging columella	4 (2.08)	2 (1.96)	2(2.22)	
Inadequate show	Alar Hanging	2 (1.04)	0 (0)	2(2.22)	0.316
	Columella retraction	2 (1.04)	1 (0.98)	1 (1.11)	
Alar asymmetry		1 (0.52)	1 (0.98)	0 (0)	1.00
Deviated columella		2 (1.04)	0 (0)	2(2.22)	0.218
Medpore extrusion/infection		5 (2.60)	2 (1.96)	3 (3.33)	0.667
Skin damage		2 (1.04)	0 (0)	2(2.22)	0.218
Breathing problem		58 (30.20)	23 (11.98)	35 (18.23)	0.018

Finally, evaluation of each reported postoperative nasal complaints (upper, middle and nasal tip) based on gender, age and frequency of previous rhinoplasty showed that overall reporting of nasal complaints was not different based on gender (*P* value> 0.05). The age of the patients in the complaint of the middle or tip was not significantly different (*P* value> 0.05). In addition, the complaints reported from the upper part of the nose were higher in people who had only one previous rhinoplasty (*P* value = 0.002), but in the complaints from the middle and the tip of the nose, the percentage of reports was significantly different between the number of previous rhinoplasties (*P* value> 0.05). Finally, the reported complaints from group 2 of upper, middle, and tip were 63.3%, 67.9%, and 52.2%, respectively, and significantly more than group 1 with 36.7%, 32.1%, and 47.8%, respectively (P value <0.001) (Table 3).

The evaluation of the upper nasal complaints (98 cases) showed that dorsum irregularity (44.9%), wide dorsum (33.7%) and deviation (20%) were more common complaints and these problems were more frequent in group 2 patients than group 1 (*P* value<0.05).

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

Table 3: Comparison of reported complaints of nasal status according to some basic patient characteristics

Characteristics	Upper		Middle		Lower portion of nose	
	Yes(n=98)	No(n=94)	Yes(n=81)	No(n=111)	Yes(n=161)	No(n=31)
Sex, n (%)						
Female	91(92.9)	82(87.2)	74(91.4)	99(89.2)	145(90.1)	28(90.3)
Male	7(7.1)	12(12.8)	7(8.6)	12(10.8)	16(9.9)	3(9.7)
P value	0.231		0.807		0.965	
Age; year	33.25±6.52	30.60±6.08	32.68±6.53	31.40±6.33	32.02±6.47	31.55±6.29
***P* value**	0.004		0.175		0.710	
Number of previous rhinoplasties						
1	77(78.6)	88(93.6)	64(79.0)	101(91.0)	138(85.7)	27(87.1)
2	19(19.4)	2(2.1)	14(17.3)	7(6.3)	17(10.6)	4(12.9)
3	1(1.0)	2(2.1)	2(2.5)	1(0.9)	3(1.9)	0(0)
4	1(1.0)	2(2.1)	1(1.2)	2(1.8)	3(1.9)	0(0)
***P* value**	0.002		0.079		0.731	
Surgeon						
Group 1	36(36.7)	66(70.2)	26(32.1)	76(68.5)	77(47.8)	25(80.6)
Group 2	62(63.3)	28(29.8)	55(67.9)	35(31.5)	84(52.2)	6(19.4)
***P* value**	<0.001		<0.001		0.001	

DISCUSSION

Considering that revision rhinoplasty is one of the most difficult plastic surgical procedures, evaluating patient satisfaction is fundamental in order to determine success and identify variables that may affect the outcomes. Our first study objective was to determine satisfaction levels in revision patients and to compare results with those who were operated by another surgeon than the first author primarily. Second, we sought to identify some factors that may influence the degree of satisfaction and help the young surgeons to assess themselves to find their faults and problems and try to achieve the best techniques regarding the patients' complaints. In this study respiratory function and complaints as well as the cosmetic result desired by the patient submitted to secondary rhinoplasty were assessed by the surgeons. Often it is difficult for the surgeon to judge the results of rhinoplasty, or even when the surgeon considers the surgery results as being short of what was expected by the patient. The results of this study showed that the most common reported complaints was about the upper portion of the nose among the women with the mean age of 31.94±6.43 years. According to the results of this study, 85.9% of the candidate patients for revision rhinoplasty had one previous rhinoplasty. Loghmani et al in a study about the aesthetic and functional concern of the secondary rhinoplasty with assessment of 136 females and 14 males with the mean age of 31.52 (6.36) years concluded that the most common complaints were related to the nose tip and it was in accordance with our results[12].

Goudakos et al in a study about the deformities and the surgical maneuvers conducted in revision rhinoplasty patients with functional complaint concluded that found deformities were statistically significant coexistences. The mean age of the patients was 34.9 years and the mean number of previous septorhinoplasties was 1.33. Nasal ventilation obstruction mainly caused either by septum deviation or nasal valve dysfunction was identified in 91.3% of the patients[13].

According to the mentioned studies the frequency of previous rhinoplasty in our study was between 1 and 4 times that the average range is near to their results. In addition, the most frequent reported complaints led to secondary rhinoplasty were about the nasal tip , followed by complaints of the upper nasal part and ultimately mid-nose (middle nose). Also, respiratory problem was observed in 22 patients (11.5%) which is less that the mentioned study.

On the other hand, among the upper nasal complaints, the highest rate was related to Dorsum irregularity, Wide dorsum and deviation. In addition, the evaluation of upper nasal complaints showed that Dorsum irregularity, Wide dorsum and Saddle complaints were more common in the patients of group 2 than the group 1 that revealed the more efficient techniques used by the first author. From 81 cases with mid-nose complaints of mid vault deviation, Inverted V had the highest rate with 58% and 35.8%, respectively. Among the

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

reported complaints of nasal tip, over projection and deviated tip, drooping tip and pinched (Bilateral) were higher respectively, whereas the complaints such as over rotation, drooping tip and pinched were more common in the patients in group 2.

In a study by Nassab et al on the concerns and surgical management of secondary rhinoplasty it has been showed that the mean patient age at time of surgery was 33.2 years (range, 18-61 years), and most patients (71.6%) were women. The mean number of previous procedures was 1.6 (range, 1-8). Chief presenting concerns were asymmetry (36.7%), large tip (24.8%), and breathing difficulties (22.0%). The most common clinical findings were nostril asymmetry (33.9%), septal deviation (32.1%), overresection (26.6%), and tip asymmetry (26.6%)[14].

According to the results of our study the frequency of complaints reported in both groups revealed that complaints in the upper part were generally higher in group 2 than group 1, so that the frequency of complaints in irregularity wide dorsum and saddle in group 2 was significantly greater than group 1. In addition, middle nasal complaints were more frequent in group 2 than group 1, with a significant difference in inverted v deformity and midvalut deviation in group 2 compared to group 1. In fact, it may be argued that errors in the upper and middle portions of the nose are more clearly seen in group 2. However, these complications or complaints in some items were significantly different between the two groups. In contrast, the percentage of nasal tip complaints in over-projection, over-rotation, and under-projection cases was greater in group 1 than group 2, which was significant in over-rotation. In fact, although other complaints of nasal tip in group 2 were more frequent than group 1, it may be argued that patients with nasal tip in group 1 were more prominent than the other two nasal areas. To this end, the overall review of the complaints revealed that there was a significant difference between the two groups of professionals, as group 2 had the highest number of complaints, although the percentage of complaints in group 2 decreased in the nasal tip and increased in group 1 compared to complaints.

In a stuy, the presence of drooping tip and residual bridge hump were the patients' main complaints, confirmed by the surgeons. The correlation between subjective obstructive symptoms and the intranasal evaluation performed by surgeons was shown to be present in 87.5% of the cases. Among the patients with respiratory symptoms, the main deformity identified was residual septal deviation in 56.25% of the cases. The drooping tip followed by residual hump were the main complaints reported by the patients and confirmed by the objective examination by the physicians. The presence of nasal obstructive complaints in 37.2% of the patients shows that greater attention needs to be paid to functional deformities during the first surgical procedure. The differences observed between patients' complaints and surgeons' evaluations confirm the need for detailed assessment and clarification to the patients regarding their expectations and actual surgical possibilities[15].

In a retrospective review of 100 secondary rhinoplasty patients, Lee et al noted significant asymmetries of the dorsum, nostrils, and alar base in 65%,41%, and 27% of their patients, respectively.7In their series of 104 patients who underwent secondary rhinoplasty, Yu et al found tip asymmetries to be the most frequent presenting concern, followed by a crooked middle third of the nose (33 patients [32%]). In their review of 92 patients who underwent secondary rhinoplasty over a 9-year period, Chauhan et al9 found the crooked nose to be the most common presenting concern (35 patients [38.0%])[16-18].

In a study, among 113 patients, 107 completed the questionnaires and the follow-up period. Analysis of pre-operative and post-operative rhinoplasty evaluation outcome showed a significant improvement after 3 and 6 months in functional and aesthetic concerns. Difference in improvement of scores was not significant when groups were divided on basis of other nasal procedures, primary or revision surgery and open versus closed approach [19].

By comparing the presentations of primary and revision rhinoplasty patients-and delineating the common indications for revision operations-novice rhinoplasty surgeons may be able to avoid certain pitfalls at the outset, thereby reducing their revision rates. The data may also assist surgeons in developing a more targeted approach to the consultation process in the revision setting [20].

However, the reported results showed that complaints were more in the upper part of the nose in the elders and the reported complaints from the upper part of the nose were higher in people who had one previous rhinoplasty, but in the complaints from the middle and the tip of the nose, the reports

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

was significantly different between the times of rhinoplasty. Finally, the reported complaints of upper, middle, and tip in group 2 that were operated with the other surgeons were significantly more than the group 1.

In general, we can say if the similar study will have done simultaneously by some surgeons it allows larger controlled multi-center studies to be planned appropriately in order to include a wider range of population groups and to compare results among centers with more surgeons and regarding the techniques, all of which increase the generalizability of the results. It resulted to improve the surgical outcomes due to finding the more prevalent problems in own patients than the other surgeons' patients and determining the reasons that leads to change the techniques with regard to the researches and consulting with the colleagues. It should be noted that such these assessments not only cause to remove the previous problems but also helps to improve the using techniques to get the best expected outcomes by the both patients and surgeons.

CONCLUSION

Such assessments resulted to improve the surgical outcomes due to finding the more prevalent problems in own patients than the other surgeons' patients and determining the reasons that leads to change the techniques with regard to the researches and consulting with the colleagues.

ACKNOWLEDGMENTS

No financial support was received for this study.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

REFERENCES

1- Gubisch W, Dacho A. Aesthetic rhinoplasty plus brow, eyelid and conchal surgery: pitfalls–complications–prevention. *GMS Curr Top Otorhinolaryngol Head Neck Surg* 2013;**12**:Doc 07.
2- Moolenburgh SE, Mureau MA, Hofer SO. Aesthetic outcome after nasal reconstruction: patient versus panel perception. *J Plast Reconstr Aesthet Surg* 2008;**61**:1459-64.
3- Izu SC, Kosugi EM, Lopes AS, Brandão KV, Sousa LB, Suguri VM, Gregório LC. Validation of the rhinoplasty outcomes evaluation (ROE) questionnaire adapted to Brazilian Portuguese. *Qual Life Res* 2014;**23**:953-8.
4- Bulut OC, Plinkert PK, Wallner F, Baumann I. Quality of life in functional rhinoplasty: rhinoplasty outcomes evaluation German version (ROE-D). *Eur Arch Otorhinolaryngol* 2016;**273**:2569-73.
5- Rosa F, Lohuis PJFM, Almeida J, Santos M, Oliveira J, Sousa CAE, Ferreira M. The Portuguese version of "The Utrecht questionnaire for outcome assessment in aesthetic rhinoplasty": validation and clinical application. *Braz J Otorhinolaryngol.* 2019;**85**:170-175.
6- Kotzampasakis D, Mantalos P, Kotzampasakis S, Danias N, Nikolopoulos T. Assessment of Aesthetic Results of 100 Patients Who Underwent Rhinoplasty-Rhinoplasty Outcome Evaluation. *Plast Reconstr Surg Glob Open* 2017;**5**:e1404.
7- Datema FR, van Zijl FV, van der Poel EF, de Jong B, Robert J, Lohuis PJ. Transparency in functional rhinoplasty: benefits of routine prospective outcome measurements in a tertiary referral center. *Plast. Reconst. Surg* 2017; **140:691**-702.
8- Pandya KB, Mandal MM, Panchal AK, Kumar R, Kapadia PB, Wadia M, Valiya V, Parmar N. Comparative study of outcomes of conventional and endoscopic septoplasty. *Int J Otorhinolaryngol Head Neck Surg* 2021; **7:1325**-29.
9- Bouaoud J, Loustau M, Belloc JB. Functional and aesthetic factors associated with revision of rhinoplasty. *Plast. Reconstr. Surg Glob Open* 2018; **6:1**-7.
10- Faidiga GB, Carenzi LR, Yassuda CC, et al. Long-term evaluation in aesthetic rhinoplasty in an academic referral center. *Braz J Otorhinolaryngol* 2010; **76:437**–441.
11- Neaman KC, Boettcher AK, Do VH, et al. Cosmetic rhinoplasty: revision rates revisited. *Aesthet Surg J* 2013;33:31–37.
12- Loghmani S, Loghmani A, Maraki F. Secondary Rhinoplasty: Aesthetic and Functional Concerns. *Plast Surg* 2019;27:217-22.
13- Goudakos JK, Daskalakis D, Patel K. Revision Rhinoplasty: Retrospective Chart Review Analysis of Deformities and Surgical Maneuvers in Patients with Nasal Airway Obstruction-Five Years of Experience. *Facial Plast Surg* 2017;**33**:334-338.
14- Nassab R, Matti B: Presenting concerns and surgical management of secondary rhinoplasty. *Aesthet Surg J* 2015;**35**:137-44.
15- Vian HN, Berger CA, Barra DC, Perin AP. Revision rhinoplasty: physician–patient aesthetic and

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]

functional evaluation. *Braz J Otorhinolaryngol* 2018;**84**:736-43.
16- Lee M, Zwiebel S, Guyuron B. Frequency of the preoperative flaws and commonly required maneuvers to correct them: A guide to reducing the revision rhinoplasty rate. *Plast Reconstr Surg* 2013;**132**: 769-776.
17- Yu K, Kim A, Pearlman SJ. Functional and aesthetic concerns of patients seeking revision rhinoplasty. *Arch Facial Plast Surg* 2010;**12**:291-297.
18- Chauhan N, Alexander AJ, Sepehr A, et al. Patient complaints with primary versus revision rhinoplasty: Analysis and practice implications. *Aesthet Surg J* 2011; **31**:775-780.
19- Esteves SS, Gonçalves Ferreira M, Almeida JC, Abrunhosa J. Evaluation of aesthetic and functional outcomes in rhinoplasty surgery: a prospective study. *Braz J Otorhinolaryngol* 2017;**83**:552-7.
20- Chauhan N, Alexander AJ, Sepehr A, Adamson PA. Patient complaints with primary versus revision rhinoplasty: analysis and practice implications. *Aesthet Surg J* 2011;**31**:775-80.

[Downloaded from wjps.ir on 2026-11-05]

[DOI: 10.52547/wjps.12.1.12]