

Patient Satisfaction among Different Age Groups Who Underwent Aesthetic and Functional Rhinoplasty in Sulaymaniyah

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Abstract

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Background: Cosmetic surgery is performed to improve an individual's satisfaction with their appearance and to improve their psychological health by improving self-confidence. Our study aimed to evaluate patient satisfaction regarding nose appearance and function.

Objective: To evaluate the satisfaction of patients who underwent rhinoplasty by using the Rhinoplasty outcomes evaluation (ROE) questionnaire and to determine the impact of patient age on the outcomes.

Patients and Methods: A prospective study of 90 patients who underwent open rhinoplasty procedures, including other nasal procedures like septoplasty or turbinoplasty, in both private and public Sulaimani Surgical Teaching Hospitals (department of oral maxillofacial surgery) from October 2020 to March 2022. The Rhinoplasty Outcomes Evaluation (ROE) questionnaire was used for esthetic and functional assessment. Results before and after surgery were compared.

Results: In this study, ninety patients participated by completing the questionnaires and the follow-up period six months postoperatively. The main reasons for rhinoplasty in our patients were: esthetic 50% (n=45), functional 8.9 % (n=8), and a combination of both esthetic and functional in 41.1% (n=37) of patients. There was a significant overall increase in patient satisfaction with functional and esthetic outcomes post-surgery ($p < 0.01$), and there was no significant difference among different age groups postoperatively ($p > 0.01$) based on ROE.

Conclusion: There was a significant overall increase in patients' satisfaction with functional and aesthetic outcomes post-surgery. There was no significant difference in satisfaction among different age groups.

Keywords: Rhinoplasty, Esthetic, Patient satisfaction, Questionnaire, Functional assessment

Introduction

In the field of facial esthetic surgery, rhinoplasty occupies a unique place. The nose's morphology and central position in the

face appear to be significant not just for facial harmony but also for the psychological and mental health of the patient [1]. Body

reconstructions have become a common feature among human beings as civilization has progressed, and international ideas about the role of cosmetic surgery in society have broadened. People get cosmetic surgery to improve their inner contentment, and because it is a painless way to gain social affirmation relating to their existence [2]. Studying patient satisfaction in facial esthetic surgery is a neglected field of research, with few standardized measures to assess the procedure's objective and subjective results [3]. Apart from the typical assessments of the surgery's success in avoiding morbidity, complications, and objective changes in nose shape, rhinoplasty poses challenges due to individual variances and patients' expectations. The patient's perspective and satisfaction, on the other hand, are the most important factors in determining whether a rhinoplasty procedure is successful or not [4]. The main goal of surgery is to satisfy both the patient and the surgeon. Patient satisfaction is influenced by the quality of the surgery, and the surgeon's expertise, but these are not the only factors. While there are some disappointed patients who, in the judgment of the surgeon, and others, are not getting the best results, it is equally possible that the opposite is true. The surgeon may be dissatisfied with the surgery's outcome, but the patient is unquestionably happy [5]. Patient satisfaction can vary greatly from culture to culture, region to region, and period to period. Gender may also be a factor. Still, the patient's level of expectations, which may or may not be realistic, may be the most important influence [6]. The magnitude of the presenting defect may also influence satisfaction, with

objective changes in nasal function following rhinoplasty being most noticeable in patients with a significant original defect, such as septal deviation or moderate to severe blockage. According to anecdotal evidence, men are less pleased with cosmetic rhinoplasties than women [7]. As a result, questionnaires designed to assess quality of life and self-image are extremely useful in determining the success of facial plastic surgery because they standardize the information collected and allow for objective comparison of procedures by measuring positive and negative effects, as well as improvements after rhinoplasty. In 2000. Alsarraf et al. became the first to develop and evaluate a questionnaire for multiple plastic operations, including rhinoplasty. The Rhinoplasty Outcomes Evaluation (ROE) questionnaire provides for the measurement of qualitative factors such as social, emotional, and psychological characteristics [8] [9]. The goal of this study was to see if the age of the patient plays a role in patients' satisfaction or not.

Patients and Methods

This is a clinical prospective qualitative study of 90 patients of both genders. Open rhinoplasty was performed in both private and public hospitals in the oral and maxillofacial surgery department at Sulaimani surgical teaching hospital. The Kurdistan Board ethics committee approved the study before initiation. This study included all patients who had sought rhinoplasty in addition to septoplasty or rhinoplasty alone. The study population was divided into three groups: (18-20), (21-30) and (31-40) years of age, with each group containing about 30 patients. Table 1 shows

the patient’s demographic data. Patients with congenital nasal deformities, such as cleft nasal deformities, craniofacial clefts, and those requiring secondary rhinoplasties, were excluded from the study. Informed consent was given. Before and after surgery, digital photography was done on all patients for record-keeping, planning, and comparison. The preoperative patient’s concerns were

documented, and detailed counseling was done. The validated Kurdish version of the ROE questionnaire was discussed with and explained to all the patients. The rhinoplasty outcome evaluation scale consists of six questions that study three quality of life parameters, including physical, emotional, and social.

Table (1): Patients’ demographic data

Age	Frequency	Percent
18-20	30	33.3%
21-30	30	33.3%
31-40	30	33.3%
Total	90	100%
Gender		
Male	28	31.1%
Female	62	68.9%
Total	90	100%
Cause		
Esthetic	45	50%
Function	8	8.9%
Both	37	41.1%
Total	90	100%

Rhinoplasty Outcomes Evaluation (ROE)

Alsarraf et al. created the ROE as a tool to evaluate the quality of rhinoplasty treatments based on patient satisfaction. The rhinoplasty outcomes questionnaire was given out twice: once before the operation as part of the preoperative examination and again after six months postoperatively to assess satisfaction. Table 2 shows the Rhinoplasty Outcomes

Evaluation questionnaire. In area-specific and disease-specific quality-of-life form, these six questions assess satisfaction across three major domains:

- 1-clinical and physical appearance (functional and esthetic),
- 2-emotional motivation (confidence and desire to improve appearance), and social effect [10].

Table (2): Rhinoplasty Outcomes Evaluation questionnaire

Rhinoplasty outcomes evaluation (ROE)

This questionnaire is designed to assist your surgeon in determining the best patient outcomes following rhinoplasty surgery. Your comments are confidential and may be used to refine surgical procedures for future patients. Please circle the number that best characterizes your current opinion regarding the following questions:

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

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

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

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

4. Do you think your current nasal appearance limits you 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	Soemwhat	Moderately	Very much	Completely
0	1	2	3	4

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

Definitely	Most likely	Possibly	Probably not	No
0	1	2	3	4

Statistical Analysis

Data were collected using Microsoft Excel, and subsequent statistical analysis was carried out using SPSS software version 23.0 and $p < 0.05$ was considered statistically significant.

Results

After inclusion and exclusion criteria were met, 90 patients participated in this study. The sample was composed of 62 female and 28 male patients. The population was divided into three age groups: 18–20 years old, 21–30 years old, and 31–40 years old. Each group contained 30 patients. The reasons for undergoing rhinoplasty were esthetic in 50%

(n=45) of patients, functional in 8.9% (n=8), and a combination of aesthetic and functional in 41.1% (n=37). No statistically significant influence of age and gender on preoperative and postoperative measurements was identified. There was a significant improvement in postoperative satisfaction. The first age group consisted of patients aged (18-20) years, including 6 males and 24 females, their ROEs are shown in Table 3. The reasons for undergoing rhinoplasty were cosmetic in 70% (n=21), functional in 0% (n=0), and a combination of esthetic and functional in 30% (n=9) of patients. There was significant improvement in postoperative patient satisfaction ($p < 0.01$).

Table (3): Rhinoplasty outcomes evaluation preoperatively and postoperatively (18-20) years

	Most negative answer		Somewhat		Moderately		Very much		Most positive answer	
	pre-op	post-op	pre-op	post-op	pre-op	post-op	pre-op	post-op	pre-op	post-op
Nose appearance	13	1	5	3	7	8	5	8	0	10
Nasal breathing	0	0	10	8	9	2	6	9	5	11
How much do friends like your nose?	5	1	8	7	7	9	5	8	5	5
Does your current nasal appearance limit social activities?	2	0	6	10	8	8	7	7	7	5
Is your nasal appearance the best that it can be?	1	0	3	7	10	6	6	2	10	15
Would you like to alter the appearance and function of your nose surgically?	10	2	3	5	5	9	5	10	7	4

The second age group was (21–30) years and consisted of 10 male and 20 female patients. Their ROEs are shown in Table 4. The main reasons for undergoing rhinoplasty were esthetic in 53.3% (n=16), function in 6.7%

(n=2), and a combination of both esthetic and function in 40% (n=12) of patients. There was a significant improvement in postoperative patient satisfaction ($p < 0.01$).

Table (4): Rhinoplasty outcomes evaluation preoperatively and postoperatively (21-30) years

	Most negative answer		Somewhat		Moderately		Very much		Most positive answer	
	pre-op	post-op	pre-op	post-op	pre-op	post-op	pre-op	post-op	pre-op	post-op
Nose appearance	7	2	6	3	5	1	8	14	4	10
Nasal breathing	2	1	8	3	7	4	3	10	10	12
How much do friends like your nose?	4	2	8	5	9	4	6	12	3	7
Does your current nasal appearance limit social activities?	2	0	5	1	10	3	8	5	5	21
Is your nasal appearance the best that it can be?	3	1	5	3	8	7	7	9	7	10
Would you like to alter the appearance and function of your nose surgically?	12	0	4	2	6	3	3	10	5	15

The third age group was (31–40) years Table (5), which included 12 male and 18 female patients. The main reasons for undergoing

rhinoplasty were esthetic in 26.7% (n=8), functional in 20% (n=6), and a combination of both esthetic and function in 53.3% (n=16)

of patients, with significant improvement in postoperative patient satisfaction ($p < 0.01$). There was no significant difference in satisfaction between males and females,

neither was there a significant difference in satisfaction among different age groups ($p > 0.01$).

Table (5): Rhinoplasty outcomes evaluation preoperatively and postoperatively (31-40) years

	Most negative answer		Somewhat		Moderately		Very much		Most positive answer	
	pre-op	post-op	pre-op	post-op	pre-op	post-op	pre-op	post-op	pre-op	post-op
Nose appearance	5	2	7	3	10	1	6	14	2	10
Nasal breathing	6	1	4	4	10	3	7	10	3	12
How much do friends like your nose?	0	2	5	5	18	4	5	12	2	7
Does your current nasal appearance limit social activities?	0	0	3	0	7	3	12	17	8	10
Is your nasal appearance the best that it can be?	3	0	12	2	8	3	2	10	5	15
Would you like to alter the appearance and function of your nose surgically?	2	0	8	2	15	5	3	13	2	10

These data are shown in Tables (6,7), and (8). There was a significant overall increase in patient satisfaction with functional and esthetic outcomes post-surgery, and there was

no difference in mean postoperative score among different age groups postoperatively based on ROE ($P > 0.01$).

Table (6): Postoperative ROE between two age groups

	Post-operative 18 - 20	Post-operative 21-30	P-value
	F (%)	F (%)	
Appearance			0.54
Most negative answer	1 (3.3)	2 (6.7)	
Somewhat	3 (10.0)	3 (10.0)	
Moderately	8 (26.7)	1 (3.3)	
Very much	8 (26.7)	14 (46.7)	
Most positive answer	10 (33.3)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	
Nasal breathing			0.57
Most negative answer	0 (0.0)	1 (3.3)	
Somewhat	8 (26.7)	3 (10.0)	
Moderately	2 (6.7)	4 (13.3)	
Very much	9 (30.0)	10 (33.3)	
Most positive answer	11 (36.7)	12 (40.0)	
Total	30 (100.0)	30 (100.0)	
How much do friends like your nose?			

Most negative answer	1 (3.3)	2 (6.7)	0.30
Somewhat	7 (23.3)	5 (16.7)	
Moderately	9 (30.0)	4 (13.3)	
Very much	8 (26.7)	12 (40.0)	
Most positive answer	5 (16.7)	7 (23.3)	
Total	30 (100.0)	30 (100.0)	
Does your current nasal appearance limit social activities?			
Most negative answer	0(0.0)	0(0.0)	<0.001
Somewhat	10 (33.3)	1 (3.3)	
Moderately	8 (26.7)	3 (10.0)	
Very much	7 (23.3)	5 (16.7)	
Most positive answer	5 (16.7)	21 (70.0)	
Total	30 (100.0)	30 (100.0)	
Is your nasal appearance the best that it can be?			
Most negative answer	0(0.0)	1 (3.3)	0.77
Somewhat	7 (23.3)	3 (10.0)	
Moderately	6 (20.0)	7 (23.3)	
Very much	2 (6.7)	9 (30.0)	
Most positive answer	15 (50.0)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	
Would you like to alter the appearance and function of your nose surgically?			
Most negative answer	2 (6.7)	0(0.0)	<0.001
Somewhat	5 (16.7)	2 (6.7)	
Moderately	9 (30.0)	3 (10.0)	
Very much	10 (33.3)	10 (33.3)	
Most positive answer	4 (13.3)	15 (50.0)	
Total	30 (100.0)	30 (100.0)	

Table (7): Postoperative ROE between two age groups

	Post-operative 18 - 20	Post-operative 31-40	P-value
	F (%)	F (%)	
Nose appearance			
Most negative answer	1 (3.3)	2 (6.7)	0.54
Somewhat	3 (10.0)	3 (10.0)	
Moderately	8 (26.7)	1 (3.3)	
Very much	8 (26.7)	14 (46.7)	
Most positive answer	10 (33.3)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	
Nasal breathing			
Most negative answer	0(0.0)	1 (3.3)	0.62
Somewhat	8 (26.7)	4 (13.3)	
Moderately	2 (6.7)	3 (10.0)	
Very much	9 (30.0)	10 (33.3)	
Most positive answer	11 (36.7)	12 (40.0)	
Total	30 (100.0)	30 (100.0)	
How much do friends like your nose?			
Most negative answer	1 (3.3)	2 (6.7)	0.30
Somewhat	7 (23.3)	5 (16.7)	

Moderately	9 (30.0)	4 (13.3)	
Very much	8 (26.7)	12 (40.0)	
Most positive answer	5 (16.7)	7 (23.3)	
Total	30 (100.0)	30 (100.0)	
Does your current nasal appearance limit social activities?			
Most negative answer	0(0.0)	0(0.0)	<0.001
Somewhat	10 (33.3)	0(0.0)	
Moderately	8 (26.7)	3 (10.0)	
Very much	7 (23.3)	17 (56.7)	
Most positive answer	5 (16.7)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	
Is your nasal appearance the best that it can be?			
Most negative answer	0(0.0)	0(0.0)	0.33
Somewhat	7 (23.3)	2 (6.7)	
Moderately	6 (20.0)	3 (10.0)	
Very much	2 (6.7)	10 (33.3)	
Most positive answer	15 (50.0)	15 (50.0)	
Total	30 (100.0)	30 (100.0)	
Would you like to alter the appearance and function of your nose surgically?			
Most negative answer	2 (6.7)	0(0.0)	0.01
Somewhat	5 (16.7)	2 (6.7)	
Moderately	9 (30.0)	5 (16.7)	
Very much	10 (33.3)	13 (43.3)	
Most positive answer	4 (13.3)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	

Table (8): Postoperative ROE between two age groups

	Post-operative 21-30	Post-operative 31-40	P-value
	F (%)	F (%)	
Nose appearance			
Most negative answer	2 (6.7)	2 (6.7)	1.00
Somewhat	3 (10.0)	3 (10.0)	
Moderately	1 (3.3)	1 (3.3)	
Very much	14 (46.7)	14 (46.7)	
Most positive answer	10 (33.3)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	
Nasal breathing			
Most negative answer	1 (3.3)	1 (3.3)	0.97
Somewhat	3 (10.0)	4 (13.3)	
Moderately	4 (13.3)	3 (10.0)	
Very much	10 (33.3)	10 (33.3)	
Most positive answer	12 (40.0)	12 (40.0)	
Total	30 (100.0)	30 (100.0)	
How much do friends like your nose?			
Most negative answer	2 (6.7)	2 (6.7)	1.00
Somewhat	5 (16.7)	5 (16.7)	
Moderately	4 (13.3)	4 (13.3)	
Very much	12 (40.0)	12 (40.0)	

Most positive answer	7 (23.3)	7 (23.3)	0.03
Total	30 (100.0)	30 (100.0)	
Does your current nasal appearance limit social activities?			
Most negative answer	0(0.0)	0(0.0)	0.03
Somewhat	1 (3.3)	0(0.0)	
Moderately	3 (10.0)	3 (10.0)	
Very much	5 (16.7)	17 (56.7)	
Most positive answer	21 (70.0)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	
Is your nasal appearance the best that it can be?			0.10
Most negative answer	1 (3.3)	0(0.0)	
Somewhat	3 (10.0)	2 (6.7)	
Moderately	7 (23.3)	3 (10.0)	
Very much	9 (30.0)	10 (33.3)	
Most positive answer	10 (33.3)	15 (50.0)	
Total	30 (100.0)	30 (100.0)	0.24
Would you like to alter the appearance and function of your nose surgically?			
Most negative answer	0(0.0)	0(0.0)	
Somewhat	2 (6.7)	2 (6.7)	
Moderately	3 (10.0)	5 (16.7)	
Very much	10 (33.3)	13 (43.3)	
Most positive answer	15 (50.0)	10 (33.3)	
Total	30 (100.0)	30 (100.0)	

Discussion

Rhinoplasty is the most frequent procedure performed in the field of facial cosmetic surgery [11]. It improves a patient's respiration and voice, as well as their self-confidence [12]. However, for the rhino-surgeon, the nasal anatomy, with its three-dimensional forces and complicated interplays between aesthetic and functional features, is extremely difficult [13]. Given that patient satisfaction is the most important metric for determining the effectiveness of any facial cosmetic operation [14]. High expectations of patients toward rhinoplasty may result in dissatisfaction after surgery [15]. Surgeons should examine patient satisfaction with quantitative approaches, and as with any operational treatment, proper patient selection and preoperative counseling are essential. In order to accurately set patient

expectations, the risks, advantages, and potential complications of rhinoplasty must be thoroughly discussed. It is critical to have a thorough conversation and knowledge of the potential need for further treatments to accomplish the patient's desired goal. Changes that are expected overtime should be addressed [16]. Preoperative analysis and planning for plastic and reconstructive surgery is built on communication with the patient. Every patient should be aware of his or her condition as well as the surgical objectives. The patient should also be informed about the treatment's potential outcomes and hazards [17]. In the therapeutic field, successful doctor–patient interaction is also necessary for decision-making [18]. Patient-reported outcome measures (PROM), which evaluate the quality of therapy from the patient's perspective, are becoming increasingly popular in documenting the

efficacy of cosmetic procedures using quantitative methodology [19]. Meanwhile It is unreasonable to anticipate 100% patient satisfaction because some patients will remain unsatisfied despite your best efforts. Over the last decade, however, new standards in rhinoplasty methods and face analysis have been created, resulting in higher patient satisfaction rates [20]. The surgeon should know that while people with low literacy do not have a higher predilection for cosmetic surgery, they do record higher satisfaction scores, which might be due to lower pre-surgical expectations and a lack of understanding. These patients demand fewer counseling sessions. Patients with better literacy had higher surgical expectations, required more counseling sessions, and were marginally less satisfied. Patient satisfaction was shown to be negatively related to their comprehension and knowledge of the surgical technique [21]. This is a prospective study that involved 90 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 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 improve the quality of life. The ROE results showed statistically significant improvement after the rhinoplasty surgeries were carried out by the maxillofacial surgeons. Finally, our data demonstrated positive postoperative functional and esthetic success in patients following rhinoplasty, with significantly increased ROE scores after rhinoplasty throughout the course of the 6-

month follow-up, which involved 62 women and 28 men, thus showing that women are more concerned than men about their physical appearance. At the same time, men want to appear more self-assured, attractive, and younger. Our study's limitations include the small sample size, the single evaluation tool, and a restricted age range (18-40) years.

Conclusions

There was a significant overall increase in patients' satisfaction with functional and aesthetic outcomes post-surgery. There was no significant difference in satisfaction among different age groups. The ROE was a useful tool for assessing quality of life post-rhinoplasty.

Recommendations

It would be useful to conduct a similar study with a bigger sample size, a longer follow-up period, and the use of more precise methods for assessing quality of life.

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Ethical clearance: Consents were taken from all patients prior to participation. The Kurdistan Board ethics committee approved the study before initiation.

Conflict of interest: Nil

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رضا المرضى بين مختلف الفئات العمرية الذين خضعوا لعملية تجميل الأنف التجميلية والوظيفية في السليمانية

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الملخص

خلفية الدراسة: يتم إجراء العمليات الجراحية التجميلية لتحسين رضا الأفراد عن مظهرهم وتحسين صحتهم النفسية من خلال تحسين الثقة بالنفس. هدفت دراستنا إلى تقييم رضا المريض فيما يتعلق بمظهر الأنف ووظيفته.
اهداف الدراسة: لتقييم رضا المرضى الذين خضعوا لعملية تجميل الأنف باستخدام استبيان تقييم نتائج تجميل الأنف (ROE) وتحديد تأثير عمر المريض على النتائج.

المرضى والطرائق: دراسة مستقبلية لـ ٩٠ مريضاً خضعوا لعمليات تجميل الأنف المفتوحة، بما في ذلك إجراءات الأنف الأخرى مثل رأب الحاجز الأنفي أو رأب الثوربين في مستشفيات السليمانية التعليمية الجراحية الخاصة والعامة (قسم جراحة الفم والوجه والفكين) من أكتوبر ٢٠٢٠ إلى مارس ٢٠٢٢. تم استخدام استبانة التقييم (ROE) للتقييم الجمالي والوظيفي. تمت مقارنة النتائج قبل وبعد الجراحة.

النتائج: في هذه الدراسة، شارك تسعون مريضاً باستكمال الاستبيانات وفترة المتابعة ستة أشهر بعد الجراحة. كانت الأسباب الرئيسية لعملية تجميل الأنف في مرضانا هي: التجميل بنسبة ٥٠٪ (العدد = ٤٥)، وظيفية ٨,٩٪ (العدد = ٨)، ومزيج من الجمالي والوظيفي في ٤١,١٪ (العدد = ٣٧) من المرضى. كانت هناك زيادة إجمالية كبيرة في رضا المرضى عن النتائج الوظيفية والجمالية بعد الجراحة (الاحتمالية اقل من ٠,٠٠١)، ولم يكن هناك فرق كبير بين الفئات العمرية المختلفة بعد الجراحة (الاحتمالية اكبر من ٠,٠٠١) على أساس العائد على حقوق المساهمين.

الاستنتاجات: كانت هناك زيادة إجمالية كبيرة في رضا المرضى عن النتائج الوظيفية والجمالية بعد الجراحة. لم يكن هناك اختلاف كبير في الرضا بين الفئات العمرية المختلفة.

الكلمات المفتاحية: تجميل الأنف، التجميل، رضا المريض، الاستبيان، التقييم الوظيفي

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