Original Article

Patient Satisfaction after Lip Enhancement Procedure by Facial Fillers in Sulaimani City

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Abstract

Objective: The aim of this paper is to assess the level of patient satisfaction after receiving lip filler injections. It also attempts to investigate the association between the satisfaction level and various factors such as number of filler treatments, amount of filler injected and site of injection, among female patients in Sulaimani.

Methods: A cross-sectional survey that used a questionnaire derived from the Global Aesthetic Improvement Scale, WHO quality of life scale and convenience sampling was used to recruit patients attending cosmetic clinics to the study. Besides, descriptive analysis and chi-square methods were used to analyse the data.

Results: 300 female patients participated in the study, with a mean age of 28.48 years. About 90% of the participants reported improvement after filler treatment, ranging from "improved" to "very much improved". A statistically significant association was found between patient satisfaction and number of filler treatments. Local side effects such as swelling and redness at the site of injection were common but they were mostly mild and did not last for an extended period.

Conclusions: Although the satisfaction level is currently high, practitioners in the field need to pay more attention to this important outcome, since understanding the patients' motivation and expectations before proceeding with the procedure is very important and can contribute significantly to increasing patient satisfaction with the results.

Keywords: *Complications, Esthetic, Fillers, Satisfaction.*

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Introduction

Nowadays, the main determinant of the success of aesthetic procedures is to find out how satisfied the patients are with the results. This is the main outcome the practitioner should aim to achieve. The patients' desire for improved confidence about themselves and relief from the stress and depression caused by their current appearance are among the top motivations to seek cosmetic procedures[1]. Research shows that people who are satisfied with their appearance are more physiologically healthy and participate more in social and economic activities[2].

One of the most common and current aesthetic procedures is the lip enhancement procedure. The lips' size, shape and the proportions of the upper and lower lips play a key role in determining the overall look and appearance of the face. In addition to the safety and efficacy of filler injection procedures[3], these factors make lip filler injection a very common procedure among patients. Furthermore, the lips and perioral area as a whole are greatly affected by the aging process, and changes such as wrinkle formation in the lips, with flattening and spreading of the Cupid's bow[4], also motivate many people to decide to have the lip enhancement procedure.

The delicate nature of the perioral area makes deep knowledge about the anatomy of the area and the injection technique highly required to achieve good results. New lip filler materials and technologies have simplified the application and have led to longer-lasting results, combined with fewer side effects and minimal failure rates[5].

Different fillers have been developed in the past decades for use in facial rejuvenation. These fillers can be categorized depending on different factors. Temporary, semi-permanent, and permanent effect are among the classifications of filler material[6]. Chemically, fillers can be classified into biologic or synthetic substances. Biologic materials include bovine collagen, animal hyaluronic acid or autologous fat, while synthetics include non-animal hyaluronic acid and calcium hydroxyapatite[5]. The ideal filler ought to be both secure and efficient; it should be biocompatible, non-immunogenic, easily obtainable, and non-re-absorbable, low in cost, and easily stored. It should also be easy to remove if necessary. Biocompatibility is considered to be an indispensable condition for dermal fillers[7]. Currently, hyaluronic acid, with its many different variations, is the most common filler material used in lip enhancement procedures. The selection of the appropriate type of filler depends on a variety of factors, including indication, user skill, patient preference, cost, potential adverse outcomes, and desired cosmetic outcome[8].

Despite wide differences in the experience and skills of the injector, permanent complications are fortunately quite rare with most fillers. Obtaining patient consent prior to injection ensures that the patients are aware of alternatives and potential complications[9]. Since all tissue fillers are delivered via injection, complications that follow any form of skin piercing can be seen with any of them. These include needle marks, swelling, persistent ecchymosis, pain, itching, outbreaks of herpes, and infectious processes. Many complications are technique-related. These include palpable implants, uneven distribution, visible implants, overcorrection, under-correction, allergies, hypersensitivity reactions and nodularity[10]. Even if the surgery is properly performed, tissue reactions might happen due to the nature of the filler substance, while some are the result of poor procedural techniques[11]. The success of a therapy must be determined by how satisfied the patient is with the aesthetic process. Self-image is a key motivator for patients who decide to undergo aesthetic procedures, and outcomes are strongly associated with changes in self-esteem that drive patient satisfaction[12].

Materials and methods

Data collection

A cross-sectional, quantitative study was conducted by using a questionnaire to assess the patients' self-reported experience and improvement in their appearance following lip augmentation with fillers. The sample size was estimated through an online sample calculator to be 300 people. The researcher delivered the questionnaire, translated it into the local language to patients attending cosmetics clinics in Sulaimani/ Kurdistan Region of Iraq. Cosmetics clinics were selected randomly from a survey of cosmetic clinics in the city and participants were selected through convenience sampling.

Participants who were medically healthy and had previously gone through lip filler injections were selected, while other inclusion criteria included female adult patients between the ages of 20 and 40 years who were able to understand and fill in the questionnaire. Patients were also required to read and sign a consent form before starting with the questionnaire. Exclusion criteria included medically compromised patients, and patients who had had surgeries on their lips before the lip filler augmentation.

The questions were derived from the Global Aesthetic Improvement Scale questionnaire and WHO quality of

life questionnaire and were divided into four parts; part 1 contained demographic questions on age, level of education, residency area, etc., while part 2 asked for information about the procedures the patient had undergone previously, such as how many times it was administered, the site of the injection, the amount of filler and so on. Part 3 consisted of an improvement scale, a question about how the patient felt about the results, whether they would repeat the treatment and recommend it to others. Lastly, part 4 asked about any side effects the patient suffered from and their severity. The full version of the questionnaire is available in the appendix. The consent form and the questionnaire were both translated into Kurdish by a certified translator, then both versions of the questionnaire- the original and the translation- and the whole study design were approved by the Ethics Committee of the College of Dentistry/University of Sulaimani.

Data Analysis

Data entry and statistical evaluations were carried out using SPSS for Windows, version 22.0 (SPSS Inc., NY, and U.S.A).

Results

Around 300 volunteers participated in the study over the course of the trial, as shown in Table 1. The average age of the participants as a group was 28.48 years. Their ages ranged from 20 to 40. All the participants in this study were female.

A total of 300 filler augmentation cases were investigated. Nearly 57% of the patients in 171 cases had both lips filled with filler. Furthermore, 56.7% of patients received 1 cc of filler therapy, whereas 34.3% received 1-2 cc of filler therapy. Clinical visits were made once or twice a year in 59% of all cases. After filler therapy, 82% of patients experienced no allergic reaction, while the majority of cases had mild or moderate (redness, bruising, numbness, swelling, and tenderness) symptoms, accounting for 90, 86, 80, 78, and 87% percent of cases, respectively. The pain level was between 1 and 6 more than 76% of the time. At the time of the surgery, 77% of those injected were under the age of 30.

The overall trend of level of satisfaction with the aesthetic result of the most recent filler treatment was upward (much better), implying that approximately 43% of the research sample were pleased with the outcome. According to their perspective, 18% and 29% were at the level of "very much better" and "improved," respectively, while 7.7% claimed there had been no change and 2.3% stated the treatment had made matters worse. In addition, 70% or more patients reported feeling pleased and upbeat following the filler therapy, 66.7% would repeat filler treatment in the future, as shown in Figure 1, and 68.3% would recommend filler treatment to relatives and friends.

Table 2 depicts the distribution of level of satisfaction by number of filler treatments. Among those who believed they had "very much improvement" after the most recent filler treatment, 46.3% of participants had 2 filler treatments, and 42% and 36% of those who reported "much improvement" after the most recent filler treatment had 1 or 2 filler treatments, respectively. However, the majority of those who reported no change or worsening conditions after the most recent filler treatment had 1 filler treatment in the past. The chi-square test found a statistically significant association between the level of patient satisfaction and number of filler treatments at the level of (α= 0.05), and it should be noted that the p-value (significance) for the chi-square test is equal to (0.000), which is less than the level of significance (α = 0.05). This indicates that there is a strong statistically significant association between these two variables.

The distribution of level of satisfaction by anatomical area of injection is shown in Table 3. Among participants who saw "very much improvement" after the most recent filler treatment, 70.4% had filler injections in both lips, and 60% of those who reported "much improvement" had filler injections in both lips, whereas 43.5% of those who reported no change had both lips injected, but 56.5% had upper or lower lip injection or vermilion border injection. The chi-square test found a statistically significant association between level of satisfaction and anatomical area of injection at the level of (α = 0.05) and it should be noted that the p-value (significance) for the chi-square test is equal to (0.014), which is less than the level of significance (α = 0.05). This demonstrates that the two variables have a statistically significant link.

The distribution of level of satisfaction by age group is shown in Table 4. The findings show that 55.6% and 68.2%, respectively, of respondents who believed they had "very much" or "much" improvement after the most recent filler treatment were under 30 years old, whereas 91.3 and 57.1%, respectively, of those who reported no change or worse were aged under 30 years. According to the chi-square test, there was a statistically significant association between level of satisfaction and age group at the level of (α= 0.05), and it should be noted that the p-value (significance) for the chi-square test is equal to (0.018), which is less than the level of significance (α = 0.05). This indicates that there is a statistically significant association between these two variables.

Table 1: Demographic and Clinical Characteristics.

Variables	Results Groupings	Frequency	Percentage
Anatomical area of injection	Both Lips	171	57
	Upper Lip	43	14.3
	Lower Lip	41	13.7
	Vermilion Border	45	15
Level of satisfaction with the aesthetic result of the last filler treatment	Very Much Improved	54	18
	Much Improved	129	43
	Improved	87	29
	No Change	23	7.7
	Worse	7	2.3
I have felt cheerful and was in good spirits after the filler treatment	All of the time	89	29.7
	Most of the time	122	40.7
	More than half of the time	32	10.7
	Less than half of the time	13	4.3
	Some of the time	29	9.7
	At no time	15	5
Would you repeat the filler treatment in the future?	Yes	200	66.7
	No	84	28
	Not sure	16	5.3
Would you recommend filler treatment for your relatives and friends?	Yes	205	68.3
	No	77	25.7
	Not sure	18	6
Amount of filler injected by CC:	1 CC	170	56.7
	1 - 2 CC	103	34.3
	2 - 3 CC	13	4.3
	Unknown	14	4.7
Number of clinical visits per year	1	84	28
	1-2	177	59
	2-5	34	11.3
	More than 5	5	1.7
Allergy	Yes	52	17.3
	No	248	82.7
Redness	Mild	172	57.3
	Moderate	98	32.7
	Severe	20	6.7
	Non	10	3.3
Bruising	Mild	134	44.7
	Moderate	124	41.3
	Severe	23	7.7
	Non	19	6.3
Numbness	Mild	126	42
	Moderate	113	37.7
	Severe	38	12.7
	Non	23	7.7
Swelling	Mild	128	42.6
	Moderate	107	35.7
	Severe	60	20
	Non	5	1.7
Tenderness	Mild	158	52.7
	Moderate	103	34.3
	Severe	24	8
	Non	15	5
Pain severity	0	43	14.3
	1-3	117	39
	4-6	111	37
	7-9	23	7.7
	10	6	2
Age at time of injection (group)	<= 30	231	77
	31+	69	23
Age group	<= 30	193	64.3
	31+	107	35.7
Total		300	100

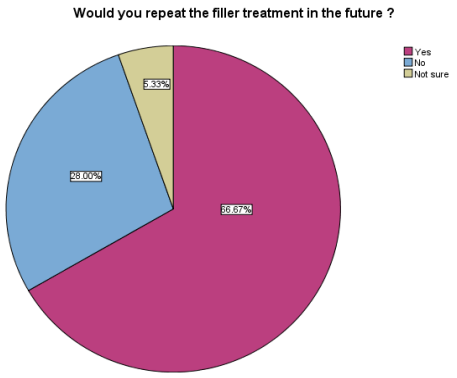

Figure 1: Shows 66.7% of patients would repeat filler treatment in the future.

Table 2: Distribution of Level of Satisfaction in Association to Number of Filler Treatments.

Variable	Results categories	Number of filler treatments				Total	Chi-square
		1	2	3	3		
Level of satisfaction with the aesthetic result of the last filler treatment	Very Much	15	25	7	7	54	
	Improved	27.80%	46.30%	13.00%	13.00%	100.00%	
	Much Improved	55	47	9	18	129	
		42.60%	36.40%	7.00%	14.00%	100.00%	
	Improved	56	23	7	1	87	$X^2 = 35.839$
		64.40%	26.40%	8.00%	1.10%	100.00%	df = 12
	No Change	16	5	2	0	23	P-value = 0.000
		69.60%	21.70%	8.70%	0.00%	100.00%	
	Worse	6	1	0	0	7	
		85.70%	14.30%	0.00%	0.00%	100.00%	
Total		**148**	**101**	**25**	**26**	**300**	
		49.30%	**33.70%**	**8.30%**	**8.70%**	**100.00%**	

Table 3: Distribution of Level of Satisfaction in Association to Anatomical Area of Injection.

Variable	Results categories	Anatomical area of injection					Chi-square
		Both Lips	Upper Lip	Lower Lip	Vermilion Border	Total	
Level of satisfaction with the aesthetic result of the last filler treatment	Very	38	8	4	4	54	
	Much Improved	70.40%	14.80%	7.40%	7.40%	100.00%	
	Much Improved	78	17	12	22	129	
		60.50%	13.20%	9.30%	17.10%	100.00%	$X^2 = 25$
	Improved	41	13	20	13	87	df = 12
		47.10%	14.90%	23.00%	14.90%	100.00%	P-value = 0.014
	No Change	10	2	5	6	23	
		43.50%	8.70%	21.70%	26.10%	100.00%	
	Worse	4	3	0	0	7	
		57.10%	42.90%	0.00%	0.00%	100.00%	
Total		**171**	**43**	**41**	**45**	**300**	
		57.00%	**14.30%**	**13.70%**	**15.00%**	**100.00%**	

Table 4: Distribution of Level of Satisfaction in Association to Age Group.

Variable	Results categories	Age group		Total	Chi-square
		<= 30	31+		
Level of satisfaction with the aesthetic result of the last filler treatment	Very Much	30	24	54	
	Improved	55.60%	44.40%	100.00%	
	Much Improved	88	41	129	
		68.20%	31.80%	100.00%	$X^2 = 11.896$
	Improved	50	37	87	df = 4
		57.50%	42.50%	100.00%	P-value = 0.018
	No Change	21	2	23	
		91.30%	8.70%	100.00%	
	Worse	4	3	7	
		57.10%	42.90%	100.00%	
Total		193	107	300	
		64.30%	35.70%	100.00%	

Discussion

Patients undergo cosmetic procedures for many reasons; looking more beautiful and attractive as well as enhancing physical and mental wellbeing are among the main reasons[13]. Hence, patient satisfaction after cosmetic procedures is considered one of the top outcomes that practitioners must look to achieve. Patients' levels of satisfaction following several types of cosmetic treatments, including lip enhancement, were investigated using various self-reporting measures. Some research examined various types of lip fillers or methods in terms of patient satisfaction as an outcome. In this paper, we attempted to assess patient satisfaction in Sulaimani, Kurdistan Region of Iraq, and explore the different factors associated with it.

One of the primary benefits of this research to the available literature is the evaluation of lip enhancement procedure in a younger age group, as the average age of participants was 28.5 years, compared to most of the other papers that took participants with a higher age ranging from 40 to 50+ years[3,14,15]. The importance of this difference in age group comes from two facts: first, lip enhancement goals and the motivation behind them differ in younger female patients from those who are older, and this will totally affect their evaluation of the result of the procedure. Secondly, the quality of the skin, the supporting tissue of the lip area and the severity of deficit vary greatly with age. This will also affect the outcome of the procedure, therefore, evaluating patient satisfaction in younger age groups is very important as it can greatly help practitioners in this field gain better insights about this important segment of patients.

Regarding side effects that patients suffer from and that can affect their whole experience with the procedure, it can be seen from Table 1 that the most common side effects were swelling, redness and tenderness, affecting 89.3%, 96.7% and 95% of the whole sample, respectively. All these side effects are local and the majority of them were of mild to moderate degrees; a finding that is supported by the outcome of Stojanovič and Majdič[16] who reported in their literature review of the safety and efficacy of the lip filler procedure that swelling and redness are the most common adverse events reported by patients in most of the studies and the majority of them were mild in severity. These findings further support the safety of non-surgical lip enhancement procedures.

The main aim of this study was to assess the level of patient satisfaction and the results were highly encouraging. The level of patient satisfaction level was assessed by using four key questions to achieve wider and more accurate insights. The questions were: how

much did the patient feel improved after the procedure? how long did the patient psychologically feel well after the procedure? would they repeat the procedure? would they recommend it to others? (All the questions can be found in the Appendix). It was found that 90% of the patients felt "improved," "much improved" or "very much improved," with the majority in the "much-improved" group, and about 81% feeling good and in good spirits more than half of the time. In addition, 66.7% reported that they would repeat the procedure in the future and 68.3% reported that they would recommend it to others (see Table 1 for a more detailed distribution). These results reflect the high satisfaction level among patients with lip enhancement procedures and indicate that most of these procedures were successful and achieved good and more than good results.

Despite the differences in the scale used to assess the level of satisfaction from those in other studies, and the difference in the age group studied, the results found through this study were aligned with most of the literature available in this area; for example, the most recent study by Bertucci et al[14] reported that >89% of patients had high satisfaction levels after undergoing the lip enhancement procedures. Another study, conducted by Eccleston and Murphy[17], measured patient satisfaction level at 2 time points: 1 month and 12 months after the procedure, and they reported high satisfaction levels of 96.9% and 80%, respectively. While another study, which measured the satisfaction level at an intermediate point compared to the above study, of 6 months, reported a 79.7% satisfaction level [3]. Almost all of the studies reported high satisfaction levels, and within the limits of our search we did not find any study that reported high dissatisfaction from lip enhancement procedures.

Hoffman and Fabi[18], in their literature review about the level of patient satisfaction, reported that the highest level of satisfaction in lip procedures was in patients who underwent two treatment sessions, an initial and re-treatment session- a result which is supported by the findings in Table 2- as we found that the highest percentages of "improvement," "much" and "very much improvement" were among those who had two filler treatments, and the association was highly significant statistically.

Although in most of the other studies the volume of filler used was higher on average, one study reported 1.67ml[14] while others used 2 ml on average[15,19], this study found that the satisfaction level was higher in patients on whom 1 ml of filler was used (see Table 4). But this can be easily explained by the difference in the age group studied, as the amount of filler needed will differ greatly according to the amount of lip volume loss and tissue deficit, and these are more severe in the older age group, while our sample was mainly composed of younger patients, with a maximum age of 40 years old.

According to Table 4, the highest percentage of satisfied patients was among those who received filler injections in both lips compared to those with either the upper or lower lip, which can clearly be explained by the fact that those who undergo filler procedure for both lips received a more uniform shape of the whole lower part of face, and the new beautiful look the patient seeks from such a procedure will be more prominent than if one lip alone is treated, as was clearly reflected by the significant association between the level of satisfaction and the site of injection. Although the number of patients who felt they looked worse after the procedure was very low, only 7 patients from the 300 participants, a high percentage of these had received injections in both lips, which further supports the fact that injection in both lips affects the overall appearance of the face more than injecting one lip.

Finally, since most of the results of this study are aligned with the findings of other researchers in this field, the contribution of this study to the already available pool of research is that it helps to extend and generalize the knowledge on efficacy, safety and patient satisfaction among the younger segment of the population. For future research, we recommend using different scales for satisfaction level assessment and also adding the time element will be of great importance since it is clear that the fillers used currently have temporary effect, so assessing patient satisfaction levels at different time points, 1, 3, 6, and 12 months, for example, will provide better insights about the duration of the effect of such procedures.

Conclusion

The proof of a substance's effectiveness and safety in lip filler injections is strongly supported, and patient satisfaction with the result of the procedure is now considered to be one of the main outcomes that determine the success of the procedure. Practitioners in this field should be highly aware of this important fact. Besides, discussions with female patients before the procedure about their motivation behind undergoing it and what they expect from it will be of great benefit for both the patients and the practitioner, and explaining the expected result to the patients before the procedure is of great importance in determining their satisfaction with the result later on. While satisfaction levels are currently high, further research about the determinants of satisfaction and the drivers behind it will help all of the workers in this field, from filler material manufacturers to researchers and practitioners, to better understand

their patients, and provide more effective development of materials and techniques to achieve better results.

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Appendix

Curriculum vitae and appendices

Oral Surgery Department Postgraduate Questionnaire:

Kindly answer the following questions by putting a tick [✓] next to your selected answer:

1. Age: _____

   Phone number: _____

Patient Code:

2. Gender: Females only
3. Residency:

   _____

4. Level of education:

   ☐ Preschool ☐ Primary school
   ☐ Secondary school ☐ College

5. Age at time of injection:

   _____

6. Number of filler treatments:

   ☐ 1 ☐ 2 ☐ 3 ☐ >3

7. Anatomical area of injection:

   ☐ Both lips ☐ Upper lip ☐ Lower lip

   ☐ Vermilion border

8. Level of satisfaction with the aesthetic result of the last filler treatment:

   ☐ Very much improved ☐ Much improved

   ☐ Improved ☐ No change ☐ Worse

9.

I have felt cheerful and was in good spirits after the filler treatment	
☐ All of the time	☐ Most of the time
☐ More than half of the time	☐ Less than half of the time
☐ Some of the time	☐ At no time

10. Would you repeat the filler treatment in the future?

☐ Yes	☐ No	☐ Not Sure

11. Would you recommend filler treatment for your relatives and friends?

☐ Yes	☐ No	☐ Not Sure

12. Amount of filler injected by CC:

☐ 1cc ☐ 1-2 cc ☐ 2-3cc
☐ Unknown

13. Number of clinical visits per year:

☐ **1** ☐ **1-2** ☐ **2-5**
☐ **>5**

14. Allergic:

☐ **Yes**	☐ **No**	☐ **Not Sure**

15. Signs and symptoms:

Redness: ☐ Mild ☐ Moderate ☐ Severe

Bruising: ☐ Mild ☐ Moderate ☐ Severe

Numbness: ☐ Mild ☐ Moderate ☐ Severe

Swelling: ☐ Mild ☐ Moderate ☐ Severe

Tenderness: ☐ Mild ☐ Moderate ☐ Severe

16. Pain severity:

☐ 0 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ 10