

Health-Related Quality of Life of Persons after Rhinoplasty: A Longitudinal Study among Iranian Population

KAZEM HOSSEINZADEH¹, HAMID HAMADZADEH², MANSOUR KHORASANI³, MARYAM JAMSHIDI⁴

ABSTRACT

Introduction: Despite the growing number of cosmetic rhinoplasty surgeries in Iran in recent years, there is little information about the effects of this procedure on the subjects' Quality of Life (QoL). This study examined the QoL after rhinoplasty in subjects without nasal obstruction, who wanted the surgery for aesthetic reasons, three and six months postoperatively.

Aim: The aim of this study was to assess the changes of QoL in clients who take rhinoplasty.

Materials and Methods: This was a prospective study conducted in Tehran, Iran. Using convenience sampling, 150 subjects who had undergone cosmetic rhinoplasty from June 2013 to June 2014 were invited to participate in the study. Patients' QoL was measured one week before and three and six months after

rhinoplasty, using the Iranian version of the 36-item Short Form (SF-36) questionnaire. Descriptive statistics, Pearson correlation coefficient, one-way ANOVA, paired t-test, and independent sample t-test were used for data analysis.

Results: Most of the participants were women (64%), and the mean age was 26.8±5.4 years (range: 18–41 years). The mean QoL scores before and three and six months after rhinoplasty were 67.26±26.01, 68.00±15.7 and 83.65±9.6, respectively. None of the measured demographic characteristics showed any correlation or relationship with the participants' QoL before and after the procedure ($p>0.05$).

Conclusion: QoL can be considered as a quality indicator of health care systems. This study shows that the persons' QoL improved six months after cosmetic rhinoplasty.

Keywords: Cosmetics, Cosmetic surgery, Developing country, Iran

INTRODUCTION

The nose has an important role in the facial beauty of a person [1]. In the ancient society, nose amputation was performed as a punishment for adulterers, thieves, and prisoners [2]. History of medicine shows that cosmetic surgery of the nose is among the earliest described surgical procedures [3]. Rhinoplasty is a popular cosmetic surgical procedure performed globally [4]. According to the American Society for Aesthetic Plastic Surgery (ASAPS) report, nose cosmetic surgery was one of the most five commonly performed cosmetic surgical procedures in 2014 [5]. Iran is the youngest country in the Middle East region with a population of about 79 million. In recent years, cosmetic surgery, particularly rhinoplasty, has become popular among Iranian teenagers [4,6].

World Health Organization (WHO) defines QoL as; the perceptions which individuals have about their situation in life regarding to the culture and value systems in which they live and in relation to their expectations, and life standards [7]. Regarding to the importance of QoL in plastic surgery patients, a retrospective chart review with a prospective follow-up study by Saleh AM et al. examined patient QoL after rhinoplastic surgery with regard to appearance of the nose and function using a modern surgical technique. They showed that modern rhinoplasty techniques significantly improved the patient QoL, compared with the traditional reduction rhinoplasty techniques [8]. Günel C and Omurlu IK, in 2014, examined the effect of rhinoplasty on psychosocial distress level and QoL of Turkish patients. They reported that despite the initial demand and type of surgery, rhinoplasty has a positive impact on the QoL in most of the patients undergoing rhinoplasty [9].

Despite the high number of rhinoplasty surgeries in Iran, to our knowledge, only two studies on the QoL of this group of patients exist in the Iranian context. One study showed that the QoL improved after rhinoplasty, and the other study showed that rhinoplasty has

no positive significant effect on the person's QoL [10,11]. Therefore, due to the lack of studies in this context and the discrepancy in the findings of the two previous studies, the present study was conducted to examine the QoL of Iranian rhinoplasty persons without nasal obstruction, who wanted surgery for aesthetic reasons.

MATERIALS AND METHODS

This prospective study was conducted in two private hospitals in Tehran, Iran. Using convenience sampling, from all clients who were admitted for rhinoplastic surgery, 150 subjects were invited to participate in the study, from June 2013 to June 2014 at two hospitals.

Data were collected one week before and three and six month after rhinoplasty during patient visits in the private rooms at the hospitals. Questionnaire packages containing a covering letter describing the aims of the study, a demographic variables questionnaire, and the Iranian version of the SF-36 questionnaire were distributed to the participants. To assess the reliability of the scale, alpha coefficient of internal consistency ($n=20$) was computed. The alpha coefficient for this instrument was 0.91. The SF-36 is a generic multidimensional instrument consisting of eight multi-item components representing physical functioning, physical role, bodily pain, general health, emotional role, mental health, social functioning, and vitality. The SF-36 scores were converted to a scale of 0 to 100, in which a lower score indicates a worsened QoL [12,13].

All participants were informed that all information would remain anonymous, kept confidential, and be stored safely. Also, prior to the collection of any data, ethical approval was obtained from the ethics committee of Qazvin University of Medical Sciences.

STATISTICAL ANALYSIS

Descriptive statistics (mean and standard deviation), Pearson correlation coefficient, one-way ANOVA, paired t-test, and

independent sample t-test were used for data analysis. All statistical analyses were performed using SPSS software 17.0, and a variable was considered to be statistically significant if $p < 0.05$.

RESULTS

Demographic characteristics: Because of marriage or migration to the overseas, 113 and 103 subjects participated in the study, three and six months postoperatively, respectively, and filled out the questionnaires (response rates: 76% and 68% in three and six months postoperatively, respectively). Of the 150 persons, 64% ($n=96$) were women and 36% ($n=54$) were men. The mean age of the participants was 26.8 ± 5.4 years (range: 18–41 years). About 56% were single and the remaining participants were married. None of the mentioned demographic characteristics showed any correlation or relationship with the patients' QoL before and at three months after surgery ($p > 0.05$) [Table/Fig-1].

QoL before rhinoplasty: Before rhinoplasty, the mean score of all eight sub-scores of the SF-36 questionnaire was 67.26 ± 26.01 . At this time, higher and lower mean scores were related to the subscales "physical pain" (77.37 ± 7.8) and "physical functioning" (49.02 ± 8.7), respectively [Table/Fig-2].

QoL three months after rhinoplasty: Three months after rhinoplasty, the persons' QoL improved slightly (mean score: 68.00 ± 15.7), but not significantly compared to that before rhinoplasty ($p > 0.05$). At this time, higher and lower mean scores were related to the subscales "physical pain" (75.07 ± 8.0) and "physical functioning" (48.5 ± 2.5), respectively [Table/Fig-2].

Demographic Items	N (%)	QoL			
		Before	p-value	After	p-value
Gender:					
Male	54(36%)	65.36±28.35	$p = 0.234^*$	76.32±26.22	$p = 0.241^*$
Female	96(64%)	68.11±29.24		78.32±27.30	
Literacy:					
Under diploma	59(39.3%)	66.54±26.15	$p = 0.321^*$	75.33±24.12	$p = 0.125^*$
Diploma and over	91(60.7)	68.11±29.24		78.11±22.24	
Income:					
≤20,000,000 Rials	119(79.3%)	64.33±25.18	$p = 0.214^*$	75.23±22.32	$p = 0.124$
≥20,000,000 Rials	31(20.7%)	67.11±22.21		77.21±19.20	
Marital status:					
Single	84(56%)	65.20±19.18	$p = 0.120^{**}$	75.33±20.02	$p = 0.112^{**}$
Married	56(37.3%)	67.13±20.20		79.20±17.02	
Divorced	7(4.7%)	64.03±21.15		78.23±21.02	
Widow	3(2%)	67.10±20.11		76.15±18.21	

[Table/Fig-1]: Correlation and relationship between QoL before and three months after surgery according to the demographic characteristics.
^{*}t-test; not significant difference
^{**}ANOVA; not significant difference

QoL Domain	Before Surgery	Three Month After	p-value	Before Surgery	Six Month After	p-value
Physical functioning	49.02±8.7	48.5±2.5	$p = 0.14^*$	49.02±8.7	80.46±23.39	$p = 0.012^{**}$
Role-physical	69.49±19.1	65.11±8.1	$p = 0.32^*$	69.49±19.1	74.75±10.9	$p = 0.021^{**}$
Bodily pain	77.37±7.8	75.07±8.0	$p = 0.21^*$	77.37±7.8	86.43±15.05	$p = 0.032^{**}$
General health	66.98±14.44	67.02±13.2	$p = 0.12^*$	66.98±14.44	82.42±10.29	$p = 0.025^{**}$
Vitality	69.49±19.1	68.15±17.0	$p = 0.14^*$	69.49±19.1	74.75±10.9	$p = 0.008^{**}$
Social functioning	74.75±16.13	75.68±15.68	$p = 0.25^*$	74.75±16.13	86.18±12.95	$p = 0.005^{**}$
Role-emotional	74.04±11.84	75.14±11.23	$p = 0.21^*$	74.04±11.84	85.59±11.01	$p = 0.05^{**}$
Mental health	55.89±8.58	54.5±12.32	$p = 0.23^*$	55.89±8.58	80.9±8.33	$p = 0.006^{**}$

[Table/Fig-2]: Comparison of the QoL scores before and after procedure in all domains.
^{*}paired t-test; not significant difference, ^{**}paired t-test; significant difference

QoL six months after rhinoplasty: Six months after rhinoplasty, the persons' QoL improved significantly (mean score: 83.65 ± 9.6), compared to that before and 3 months after rhinoplasty ($p < 0.05$). At this time, higher and lower mean scores were related to the subscales "physical pain" (86.43 ± 15.05) and "physical role" (74.75 ± 10.9), respectively [Table/Fig-2]. [Table/Fig-1] shows the difference in the mean scores of QoL during the three time points.

DISCUSSION

Rhinoplasty is a frequently performed cosmetic surgical procedure. In the present study, we aimed to examine the QoL of Iranian rhinoplasty persons, three and six months postoperatively. The results showed that the persons' QoL improved significantly six months after rhinoplasty than that before and three months postoperatively.

Although formal data do not exist, some informal reports have mentioned that Iran has one of the highest rates of cosmetic rhinoplasty in the world [4,14]. The growing popularity of cosmetic rhinoplasty in Iran can be related to several factors such as improvements in cosmetic rhinoplasty surgical techniques and decreased rate of complications, very low cost for cosmetic rhinoplasty in Iran, high tendency toward beauty and the ability to attract people among women, and exposure to satellite television media [3,14].

Although the present study showed that the QoL improved after rhinoplasty, some studies have reported differently in this context. In a study in 2014, Zojaji R et al., examined the general health and QoL using the General Health Questionnaire (GHQ-28) and World Health Organization Quality of Life (WHOQOL-BREF) questionnaire in 50 persons before and three months after rhinoplasty [11]. Their finding is in contrast with the findings of the present study. This discrepancy can be related to the difference in the sample size of the two studies (150 versus 50) or the different types of instruments used in the two studies. In another study in this context, Litner JA et al., examined the effect of cosmetic facial surgery on satisfaction with appearance and the QoL among 93 patients in Canada. The most common procedure in their study was rhinoplasty. Their study showed that patients' QoL was enhanced after rhinoplasty [15]. Fatemi MJ et al., in 2012, using the same questionnaire examined the QoL of Iranian patients undergoing rhinoplasty. Similar to the findings of the present study, Fatemi MJ et al., showed that rhinoplasty improved the patients' QoL in all domains, including physical functioning, role of emotion, bodily pain, and vitality [10].

Improvement of QoL after cosmetic rhinoplasty among the Iranian population could be related to the improvement in patients' satisfaction of their appearance postoperatively. The results of earlier studies in Iran showed that having a beautiful face, particularly for young females, is the primary reason for wanting rhinoplasty. In this regard, a study was conducted by Arabi MA et al., to assess the interest in rhinoplasty and awareness about its complications among 320 female Iranian high school students, in 2012. They revealed that the majority of the participants liked to undergo rhinoplasty. The main reasons for wanting rhinoplasty was beauty and because it is

fashionable. Unfortunately, the majority of them were unaware of the possible postoperative complications of rhinoplasty [4].

Despite the growing number of cosmetic rhinoplasty surgeries in Iran in recent years, there is little information about the effects of this procedure on the persons' QoL. In the present study, we show that cosmetic rhinoplasty can result in a significant improvement in the persons' QoL. However, further study using a qualitative method in this context is recommended.

LIMITATION

This study was based on a convenient sample and the participation was voluntary. So, there might have been a selection bias which might affect the generalization of the results, in addition to the small sample size.

CONCLUSION

QoL is an important issue in the surgery patients, especially in the elective ones. However, little study has been done about, it especially in cosmetic surgery patients. The present study revealed that improving in QoL after rhinoplasty happens gradually, so it is very important to inform the patients to expect the QoL improvement at least six month later.

AUTHORSHIP CONTRIBUTION

Study concept, design and analysis of data: Hosseinzadeh. Data interpretation and drafting of the manuscript: Khorasani. Critical revision of the manuscript and statistical analysis: Hamadzadeh and Jamshidi.

ACKNOWLEDGEMENTS

We would like to appreciate all clients who participate in this study and thanks to all surgery centers' managers and staffs.

REFERENCES

- [1] Whitaker IS, Karoo RO, Spyrou G, Fenton OM. The birth of plastic surgery: The story of nasal reconstruction from the Edwin Smith Papyrus to the twenty-first century. *Plast Reconstr Surg*. 2007;120(1):327-36.
- [2] Mazzola IC, Mazzola RF. History of reconstructive rhinoplasty. *Facial Plast Surg*. 2014;30(3):227-36.
- [3] Nguyen PS, Mazzola RF. History of aesthetic rhinoplasty. *Ann Chir Plast Aesthet*. 2014;59(6):374-79.
- [4] Arabi Mianroodi A, Eslami M, Khanjani N. Interest in rhinoplasty and awareness about its postoperative complications among female high school students. *Iran J Otorhinolaryngol*. 2012;24(68):135-42.
- [5] Waltho D, Rockwell G. Post-breast surgery pain syndrome: Establishing a consensus for the definition of post-mastectomy pain syndrome to provide a standardized clinical and research approach - A review of the literature and discussion. *Can J Surg*. 2016;59(5):342-50.
- [6] Tahmasbi S, Tahmasbi Z, Yaghmaie F. Factors related to cosmetic surgery based on theory of reasoned action in shahrekord students. *Holist Nurs Midwifery*. 2015;24(4):53-61.
- [7] Andersen JC. Is immediate imaging important in managing low back pain? *J Athl Train*. 2011;46(1):99-102.
- [8] Saleh AM, Younes A, Friedman O. Cosmetics and function: Quality-of-life changes after rhinoplasty surgery. *Laryngoscope*. 2012;122(2):254-59.
- [9] Günel C, Omurlu IK. The effect of rhinoplasty on psychosocial distress level and quality of life. *Eur Arch Otorhinolaryngol*. 2014;14(5):221-28.
- [10] Fatemi MJ, Rajabi F, Moosavi SJ, Soltani M. Quality of life among Iranian adults before and after rhinoplasty. *Aesthetic Plast Surg*. 2012;36(2):448-52.
- [11] Zojaji R, Keshavarzmanesh M, Arshadi HR, Mazloum Farsi Baf M, Esmaeelzadeh S. Quality of life in patients who underwent rhinoplasty. *Facial Plast Surg*. 2014;30(5):593-96.
- [12] im ek G, Arslan B, Erden B, Bayar Muluk N, Kılıç R. The effects of septoplasty on disease-specific and general quality of life: A retrospective longitudinal trial. *Kulak Burun Bo az Uygulamalar*. 2014;2(3):113-16.
- [13] Mehralian H, Salehi S, Moghaddasi J, Amiri M, Rafiei H. The comparison of the effects of education provided by nurses on the quality of life in patients with congestive heart failure (CHF) in usual and home-visit cares in Iran. *Glob J Health Sci*. 2014;11;6(3):256-60.
- [14] Rastmanesh R, Gluck ME, Shadman Z. Comparison of body dissatisfaction and cosmetic rhinoplasty with levels of veil practicing in Islamic women. *Int J Eat Disord*. 2009;42(4):339-45.
- [15] Litner JA, Rotenberg BW, Dennis M, Adamson PA. Impact of cosmetic facial surgery on satisfaction with appearance and quality of life. *Arch Facial Plast Surg*. 2008;10(2):79-83.

PARTICULARS OF CONTRIBUTORS:

1. Department of Nursing, Faculty of Nursing and Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran.
2. Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Qazvin University of Medical Sciences, Qazvin, Iran.
3. Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Qazvin University of Medical Sciences, Qazvin, Iran.
4. Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Qazvin University of Medical Sciences, Qazvin, Iran.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Mansour Khorasani,
Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Qazvin University of Medical Sciences, Qazvin, Iran.
E-mail: mansourkhorasani@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jul 20, 2016**
Date of Peer Review: **Sep 20, 2016**
Date of Acceptance: **Oct 15, 2016**
Date of Publishing: **Mar 01, 2017**