Research Paper: Role of Positive Thinking and Personality Traits in Predicting Satisfaction With Nasal Surgeries

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ABSTRACT

Background: Rhinoplasty is recognized as a complicated, but common procedure. Although patient satisfaction with these surgeries is less commonly discussed, it is one of the most important determinants of surgical success. This study was done to predict the patients' satisfaction with nasal surgeries, based on their personality traits and positive thinking.

Methods: This cross-sectional, descriptive, correlational study was conducted in Shiraz, Iran, during the fall and winter of 2017. A total of 200 individuals undergoing rhinoplasty were selected, using the convenience sampling method. The Rhinoplasty Outcome Evaluation-Revised (ROE-R) questionnaire, Automatic Thoughts Questionnaire-Positive (ATQ-P), and Neuroticism-Extraversion-Openness (NEO) personality inventory were used for data collection. The obtained results were analyzed by SPSS V. 23, using inferential statistics and stepwise regression analysis.

Results: The results showed that satisfaction with nose fitness had a significant positive relationship with agreeableness and openness ($P<0.01$). Also, the overall satisfaction with surgery had a significant positive relationship with these personality traits, while a significant negative relationship was found with neuroticism ($P<0.01$). Moreover, the results showed that positive thinking and personality traits could predict 6% of changes in the overall satisfaction with surgery ($P<0.001$). Neuroticism showed an inverse correlation with satisfaction ($P=0.001$, $\beta=-0.24$).

Conclusion: Regarding the relationship between satisfaction with rhinoplasty and personality traits, it was found that different personality traits are associated with different attitudes, influencing surgical outcomes, and satisfaction.

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1. Introduction

Cosmetic surgery is one of the most common surgical procedures around the world. In Iran, cosmetic surgeries, particularly nasal surgery or rhinoplasty, is a common procedure. Today, it is recognized as one of the most frequently used cosmetic surgeries in Iran, with the number of candidates increasing every day [1]. In 2015, the International Society of Aesthetic Plastic Surgery (ISAPS) [2] reported around 850,000 rhinoplasty surgeries worldwide.

Research shows that psychological factors play an important role in the increasing trend of cosmetic surgeries [3]. According to previous research, psychological distress influences the person's expectations of cosmetic surgeries and postoperative outcomes [4]. However, it is very difficult to screen the patient's satisfaction with surgery to evaluate the aesthetic parameters of rhinoplasty. Overall, the level of patient satisfaction depends on his/her personality, psychological characteristics, occupation, social needs, and mental state (e.g. depression and physical problems). It has been shown that the surgeon's aesthetic understanding and ability to make the necessary changes are important in increasing patient satisfaction [5].

As mentioned earlier, personality is one of the factors influencing the patient's satisfaction with rhinoplasty. Certain psychological and personality traits are believed to predict the likelihood of cosmetic surgery and its poor or favorable outcomes [6]. To assess personality traits in this area, many studies, using standardized Minnesota Multiphasic Personality Inventory (MMPM-3) and Millon Clinical Multiaxial Inventory (MCMI-II), have shown obsessive-compulsive and narcissistic personality traits in those undergoing nasal surgery [7].

Severe symptoms of obsessive-compulsive disorder, depression, interpersonal difficulties, psychosis, paranoia, fear, and psychiatric problems have been demonstrated in research on people undergoing rhinoplasty [8]. Researchers using MMPI-3 reported that none of the candidates were schizoid, self-centered, schizotypal, or paranoid. Also, no personality disorders, exogenous depression, somatization disorder, depressive disorder, anxiety disorder, alcohol or drug dependence, posttraumatic stress disorder, or delusional disorder was reported in the candidates. Nevertheless, manic disorder, major depression, and borderline personality characteristics were observed in 3.3% of subjects in the case group [9].

Moreover, dependent, histrionic, and narcissistic personality disorders have been observed in individuals undergoing rhinoplasty. Narcissistic personality disorder was significantly more common in this group [9]. Research shows that obsessive-compulsive personality disorder is significantly more common in individuals undergoing rhinoplasty, compared with those with other personality traits [10]. In a previous study, 133 patients (29%) with facial cosmetic surgeries showed no personality disorder, based on the MMPI test. Narcissistic personality disorder (25%) was observed in other subjects, followed by dependent personality disorder (12%) and histrionic disorder (10%); a truly abnormal nose comprised only 1% of nasal surgeries. In terms of age, the highest frequency of rhinoplasty was reported in educated and more affluent people, aged 15-25 years [11].

Another study using the Neuroticism-Extraversion-Openness (NEO) questionnaire showed that in addition to higher scores of conscientiousness and neuroticism, people who obtained lower scores of agreeability and openness were more likely to undergo nasal surgery [12]. Moreover, neuroticism in rhinoplasty candidates and agreeableness in the control group were more common than openness and extraversion. In a meta-analysis, all negative predictors of patient satisfaction with cosmetic surgery were examined, and factors, such as male gender, young age, unrealistic expectations, psychological or family distress, obsessive-compulsive personality disorder, and personality disorder, were identified. This study suggested that sociodemographic and psychosocial variables could predict the adverse outcomes of facial cosmetic surgery [13]. In another study, satisfaction with rhinoplasty was significantly associated with personality traits. According to these studies, one of the main factors in postoperative satisfaction with rhinoplasty may be the recognition of the patient's personality traits [14].

Research shows that having positive or negative expectations or attitudes is dependent on personality traits. According to the American Psychological Association (APA), personality refers to "individual differences in patterns of thinking, feeling, and behavior" [15]. Today, positive psychology, as a new branch of psychology, is recognized as the scientific study of human vigor, good health, and happiness [16]. Positive thinking is the way or result of an individual's focus on a positive or constructive phenomenon [17], creating positive expectations to obtain satisfactory results. Several studies have demonstrated that positive thinking, optimism, and pessimism affect not only the individual's perceived health but also his/her health outcomes [18-21]. Optimistic people show stability and confidence in the face of stressful events

and tend to consider positive opportunities in the future [22]. In other words, optimism is an expectation of positive outcomes [23].

In a previous study, it was found that 75% of patients were confident that after a nose job, they would have a better appearance [24]. Overall, studies have shown that optimism and positive thinking are influential factors after surgery [25]. In previous research, the most common tools to measure personality traits were based on psychological pathology. However, in the present study, we used the NEO questionnaire, which is not based on psychological pathology [7]. Therefore, this study was done to predict the patients' satisfaction with rhinoplasty, based on their personality traits and positive thinking.

2. Methods

This cross-sectional study was performed on a statistical population, consisting of candidates for cosmetic surgery, who were referred to Shahid Rajaee Hospital in Shiraz, Iran, in the autumn and winter of 2017. The inclusion criteria were having minimum education (high school diploma) and being under 25 or over 35 years of age. A total of 200 individuals were recruited in this study via convenience sampling. There was no specific exclusion criterion other than a reluctance to participate in the study. The study objectives were explained to the participants, and written consent was obtained for participation in the study. The information of the questionnaires remained anonymous, and only demographic information, including age, gender, education, occupation, and marital status, was required. All of the questionnaires, used to analyze the data, were valid. First, the researchers used the address and phone number of the participants, who were referred to Shahid Rajaee Hospital of Shiraz, Iran, to gather the necessary information after obtaining the approval of the center's authorities and describing the study objectives to the participants. They were asked to visit the hospital to complete the questionnaires at the specified time. Almost 65 subjects were recruited, and the researchers visited the hospital clinic for periodic visits; it took about three months to complete the questionnaires.

In this study, satisfaction with rhinoplasty, positive thinking, and personality traits were examined using different questionnaires. The Rhinoplasty Outcomes Evaluation-Revised (ROE-R) questionnaire, developed by Alsarraf et al. (2000), was used to assess satisfaction with rhinoplasty. The internal validity and reliability of this questionnaire for various plastic surgeries, including rhinoplasty, have been examined in the literature [26]. In 2014, Izu et al. approved the Brazilian version of the ROE questionnaire [27]. However, the number of questions seemed insufficient to determine the patient's satisfaction or dissatisfaction, according to the experts' opinion. Therefore, besides the questions included in the questionnaire, other items were added to better understand the patient's satisfaction, according to the experts' opinions.

The ROE-R questionnaire consists of 14 questions, rated on a five-point Likert scale (always=5, frequently=4, sometimes=3, rarely=2, and never=1), with the scores ranging from one to five. After extracting the content of included factors, they were named by three psychologists: 1. Size observance and symmetry; 2. Symmetry with other components; and 3. Lack of deficiencies. Cronbach's alpha was measured to determine the reliability of this tool. The results showed a Cronbach's alpha of 0.66 for symmetry and 0.75 for satisfaction.

Moreover, the Automatic Thoughts Questionnaire-Positive (ATQ-P), developed by Ingram and Wisnicki, was used in this study [28]. This questionnaire contains 30 questions, rated on a five-point Likert scale (always=5, most often=4, sometimes=3, rarely=2, and never=1). The minimum score of the questionnaire is 30, and the maximum score is 150 (average score=90). A total score of above 90 represents the subject's positive thinking; the closer the score is to 150, the greater positive thinking will be. In Iran, the reliability of this questionnaire was determined based on Cronbach's alpha (0.94) and the split-half method (0.95) [29]. In another study, Cronbach's alpha was calculated to be 0.89 [30]. In the present study, Cronbach's alpha coefficient was 0.75.

In addition, the NEO Five-Factor Inventory (NEO-FFI), developed by Costa and McCrae, was used in this study [31]. This inventory consists of 60 questions assessing five personality traits, including nervousness, extraversion, agreeableness, openness, and conscientiousness. It has five 12-item scales rating on a Likert scale, ranging from "I totally disagree" (score 0) to "I totally agree" (score 4); the score of each scale ranges from 0 to 48 [32]. The NEO-FFI has been standardized in Iran [33]. The alpha coefficients of the scales ranged from 0.71 to 0.83, and test-retest reliability indicated coefficients of 0.53 to 0.73. The total score was measured, based on the sum of scores for the individual scales. In the present study, Cronbach's alpha coefficient was 0.72 for nervousness, 0.69 for openness, 0.63 for extroversion, 0.75 for consciousness, and 0.85 for agreeableness.

Multiple regression analysis and Pearson's correlation matrix were used to analyze the data. Descriptive statistics (Mean±SD) and inferential statistics (Pearson's ma-

trix correlation and multiple regression analysis) were also measured to evaluate the data. All data analyses were performed using SPSS V. 23.

3. Results

According to Table 1, the acceptance of the null hypothesis indicated the normal distribution of data. The demographic variables are presented in Table 2. The results showed that 12.6% of women were dissatisfied, and 11.8% had less than average satisfaction Table 3. On the other hand, in males, only 5.5% were dissatisfied with their proportions, and 0.26% had less than average satisfaction.

The Mean±SD of fitness and satisfaction were 53.69±6.64 and 49.47±8.61, respectively, according to

Table 1. The results of the Kolmogorov-Smirnov test

Variables	Kolmogorov-Smirnov test	Sig.	Result	Status
Fitness	1.26	0.08	Normal	Accepted
Satisfaction	-0.92	0.37	Normal	Accepted
Positive thinking	1.29	0.07	Normal	Accepted
Neuroticism	1.11	0.17	Normal	Accepted
Extroversion	1.06	0.21	Normal	Accepted
Agreeableness	0. 81	0.51	Normal	Accepted
Openness	1.32	0.06	Normal	Accepted
Conscientiousness	1.23	0.10	Normal	Accepted

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Table 2. Demographic characteristics of the participants

Variables	Groups	No. (%)
Gender	Female	127 (63.5)
	Male	73 (36.5)
Marital status	Single	89 (44.5)
	Married	111 (55.5)
	High school diploma	78 (39)
	BA	107 (53.5)
	MA and PhD.	15 (7.5)
Occupational status	Unemployed	20 (10)
	Employed	55 (27.5)
	Housewife	60 (30)
	Self-employed	65 (32.5)
Age (years)	<25	57 (27.5)
	25-30	91 (42)
	30-35	38 (19)
	≥35	14 (7)

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Table 3. Evaluation of satisfaction with rhinoplasty and fitness in men and women

Variables	No. (%)	
	Female	Male
Unfitness	16 (12.6)	4 (5.5)
Fitness	111 (87.4)	69 (94.5)
Dissatisfaction	15 (11.8)	19 (26)
Satisfaction	112 (88.2)	54 (74)

the results presented in Table 4. Regarding the personality traits, the highest and lowest Mean±SD were related to conscientiousness (36.28±6.53) and neuroticism (20.04±6.06), respectively.

As shown in Table 4, there was a significant positive relationship between fitness satisfaction and personality traits of conscientiousness and openness (P<0.01). Also, the overall satisfaction with surgery had a positive correlation with positive thinking, while it had a significant negative relationship with neuroticism (P<0.01). However, other personality traits had no significant association with satisfaction or fitness after surgery.

According to the results in Table 5 positive thinking and personality traits could predict 4% of changes in satisfaction with surgery and fitness (P<0.004, df=198, F=-8.29). Also, agreeableness (P<0.004 and β=0.20) had a significant positive relationship with satisfaction of fitness. However, other variables could not predict satisfaction with fitness. The present results showed that positive thinking and personality traits could predict 6% of changes in the overall satisfaction with surgery (P<0.001). In addition, neuroticism had a significant inverse correlation with satisfaction (P=0.001, β=-0.24). Other variables could not predict the overall satisfaction with rhinoplasty.

4. Discussion

Regarding satisfaction with rhinoplasty, the proportion of men satisfied with the surgery was higher than women, and the gender difference was significant. However, the average number of women and men was not significantly different regarding the overall satisfaction, and no significant difference was observed. In a study by Abbas et al. young patients and males showed greater satisfaction with surgery, compared with women [34], which is in line with the results of the present study. However, some previous findings are inconsistent with our results, as men were significantly unhappier and more depressed than women [35-37]. These studies show that men expect significant improvements in their romantic or professional relations following rhinoplasty [36].

Table 4. Statistical analysis of research variables

Variables	Mean±SD	Skewness	Elongation
Fitness	53.69±6.64	-0.69	0.66
Satisfaction	49.47±8.61	-0.62	-0.11
Positive thinking	121.53±15.37	-0.17	-0.61
Neuroticism	20.04±6.06	0.72	0.32
Extroversion	32.45±6	-1.20	1.70
Agreeableness	24.65±3.68	0.52	-0.10
Openness	32.80±5.49	-0.62	-0.25
Conscientiousness	36.28±6.53	-0.56	-0.40

Table 5. Pearson's correlation matrix for determining the correlation of positive thinking and personality traits with satisfaction after nasal surgery

Variables	1	2	3	4	5	6	7	8
Positive thinking	1							
Neuroticism	-0.62**	1						
Extroversion	-0.68**	0.63**	1					
Agreeableness	0.07	-0.09	0.05	1				
Openness	0.028**	-0. 57**	0.54**	0.19**	1			
Conscientiousness	0.28**	-0.35**	0.45**	0.06	0.26**	1		
Fitness	0.12	-0.13	0.04	0.20**	0.15*	0.06	1	
Satisfaction	0.23**	-0.24**	0.11	0.09	0.02	0.01	0.32	1

*P<0.01; **P<0.05.

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Freiberg et al. claimed that rhinoplasty is one of the cosmetic surgeries with the lowest level of satisfaction among patients [38]; also, those who could not express their opinion about their transformation were generally dissatisfied [38]. They found that most surgeons and patients were dissatisfied with rhinoplasty [38] and that the greatest number of rhinoplasty surgeries were performed for male and single individuals. On the other hand, another study reported that rhinoplasty increased the client's self-confidence and made him/her feel more attractive for a successful marriage [39]. It is worth mentioning that most candidates were married in the current study. Previous research shows that following rhinoplasty, the satisfaction rate increases with time [36-39]. Therefore, the aesthetic outcomes of rhinoplasty, if performed by skilled and experienced surgeons, are satisfactory and stable over time [5].

The present results showed that satisfaction of fitness had a significant positive relationship with the personality traits of agreeableness and openness. There was also a significant positive relationship between the overall satisfaction with surgery and positive thinking, while there was a significant negative relationship between satisfaction and neuroticism. Because no similar research has been conducted in this area, the consistency or inconsistency of the results should be considered. Some investigations have been carried out to evaluate satisfaction-related personality traits. Numerous studies have shown that the patient's mental and psychological assessment is one of the most important factors that can affect postoperative outcomes [36-38]. Concerning the five personality traits examined in this study, the personality trait of openness was more marked in the case group than the control group.

Moreover, personality traits of openness and extraversion were more common in patients undergoing rhinoplasty; in other words, they had new ideas and thoughts and sought new ways and experiences [7]. Overall, by improving the appearance, facial cosmetic surgeries, particularly rhinoplasty, can improve one's emotional, spiritual, social, and physical health. It can also enhance one's self-confidence and self-esteem and even improve his/her professional life [6]. It is strongly recommended that patients receive comprehensive information before surgery to overcome the mentioned problems [5].

Based on numerous studies, personality and mentality, including optimism and positive thinking, can influence the patient's satisfaction or dissatisfaction with surgery. However, in the present study, the subject's point of view was not considered, which might have affected the results. For a successful surgery, preoperative assessment can be important in positive thinking and predict the success rate of surgery. We hope that future studies consider this factor in their analyses.

5. Conclusion

According to the present results, 12.6% of women were not satisfied with rhinoplasty, and 11.8% had less than average satisfaction; only 5.5% of men were dissatisfied, and 26% had less than average satisfaction. The overall satisfaction with surgery had a significant positive correlation with positive thinking, while a significant negative relationship was found between satisfaction and neuroti-

cism. On the other hand, there was no significant relationship between other personality traits and satisfaction or fitness after rhinoplasty. Based on the results, 10% of changes in the overall satisfaction could be predicted by personality traits and satisfaction or fitness after rhinoplasty. Moreover, neuroticism and positive thinking could reversely and directly predict overall satisfaction, respectively. Nonetheless, other variables could not predict the overall satisfaction with rhinoplasty.

Ethical Considerations

Compliance with ethical guidelines

This study was registered in Shiraz, Iran on February 6, 2020 (License No.: 3158178/98).

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Authors' contributions

Study design, manuscript preparation: All authors; Data collection and analysis: Sattar Mahmoudi and Mehrnosh Rabbani Zadeh.

Conflict of interest

The authors declared no conflict of interest.

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