



# Changes in the Indices of Body Image Concern, Sexual Self-Esteem and Sexual Body Image in Females Undergoing Cosmetic Rhinoplasty: A Single-Group Trial



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## Abstract

**Introduction** Psychological factors play a major role in the tendency toward cosmetic surgery. Variety seeking, making changes in one's face and reducing apparent dissatisfaction, improving body image and increasing sexual self-esteem can be considered as some psychological aspects of cosmetic surgery. The present study was conducted with the aim of evaluating the changes in the indices of body image concern, sexual self-esteem and sexual body image in patients undergoing rhinoplasty.

**Method** This study was a single-group pretest–posttest quasi-experimental design. The research data were collected from March 2015 to January 2016. For this purpose, of the patients seeking nose surgery who referred to beauty centers in Mashhad, 40 subjects were selected through purposive method sampling and completed a Body Image Concern Inventory, Sexual Self-Esteem Index for Women and Body Exposure during Sexual Activities Questionnaire before and after rhinoplasty. These data were collected after obtaining informed consent, conducting a structured clinical interview and completing the demographic checklist.

**Findings** Data analysis demonstrated that there is a significant improvement in the index of female body image concern after rhinoplasty ( $p < 0.05$ ). In the indices of sexual self-esteem and sexual body image, the analyses

showed no significant difference between the pretest and posttest scores ( $p > 0.05$ ).

**Conclusion** Cosmetic surgery leads to the reduced body image concern of women but has no effect on sexual self-esteem and sexual body image. It seems that the psychological function of patients does not change significantly by rhinoplasty dimensions.

**Level of Evidence III** This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors [www.springer.com/00266](http://www.springer.com/00266).

**Keywords** Concern · Body image · Sexual self-esteem · Rhinoplasty

## Introduction

People's perception of themselves is closely related to an individual's impressions of his/her own body, and major changes in body image are accompanied by disturbances in mental balance [1]. Additionally, body image significantly impacts the index of self-esteem, although the effects vary depending on different areas of the body [2]. In other words, people who psychologically enjoy a more favorable body image show higher self-esteem and the opposite is also true [3].

In this context, one of the measures that people with negative physical self-concept can do is to undergo cosmetic surgery. Cosmetic surgery includes surgery to change the appearance of the body done in the absence of disease, injury, wound or congenital and hereditary deformity [4].

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According to unofficial statistics, more than 36,000 Iranians undergo face cosmetic surgery every year, and among the cosmetic surgeries performed in Iran, nasal cosmetic surgery ranks first. Iran is first in the world in terms of the number of patients who choose to undergo nose cosmetic surgery. After Iran, the USA, England and, to some extent, France are in the next ranks [5]. According to statistics provided by the International Society of Plastic Surgery (ISAPS), Americans spent 13.5 billion dollars on cosmetic surgery in 2016. Overall, the number of US plastic surgery procedures rose 115 percent between 2000 and 2015, and the trend does not seem to be slowing down. Although the amount of surgeries actually fell to some extent (10%) during those years, the sharp increase in the “minimally invasive surgical technique” was very high (158%), which led to a huge increase in the total number of surgeries. Studies have shown in particular that social comparison with media figures a possible route in the relationship between exposure to media and body image is stronger for girls relative to boys [6]. Experts state that “in the culture under the pressure of the media, girls increasingly become aware of the fact that their appearance is a benchmark of their value level” [7].

Body image is a multidimensional construct that consists of perceptual and attitudinal (i.e., affective, cognitive and behavioral) components [8]. The individual’s feeling that his body is large or small, attractive or unattractive and weak or strong also reveals aspects of self-concept [9]. Body image is like a target screen or sign upon which one projects his most important personal feelings, anxieties and values. Thus, a person’s concept of his or her body is the main and most important part of his self-concept. It is believed that body image affects overall self-concept and its outcome depends on the degree of importance of the physical area for the individual [2]. Physical self-concept or physical self-description, as one of the dimensions of self-concept, shows the individual’s attitude toward physical dimensions, abilities and skills such as body appearance, body fat, flexibility, coordination, endurance and strength. From the viewpoint of Visser et al. [10], one aspect of self-esteem is sexual self-esteem that influences sexual behaviors and includes the human emotional response to the evaluation of their thoughts, feelings and sexual behaviors. Sexual self-esteem is determined by the image and value a person considers for himself in terms of sexual attractiveness and abilities. Our conception of how much we are sexually attractive and worthwhile is closely linked to the quality of our sexual relationships. The degree of sexual satisfaction by one’s partner is a reflection of our own sexual self-esteem. We think of our sexual value and attractiveness as it is assumed by our sexual partners or people with whom we interact, as they think of our sexual characteristics, appearance and behavior [10]. Baumeister

and Bushman [11] argue that people with high sexual self-esteem experience more social approvals. Additionally, a sense of belonging to an emotional relationship affects sexual self-esteem, meaning that people with stronger intimate ties seem to have higher sexual self-esteem. Body image concern is an attitude that the individual has about his own appearance so that this image and impression, whether positive or negative, can influence various aspects of the individual’s life as well as his behavior in different places. Sometimes, this concern about body image increases to a point where it causes mental preoccupation and individuals spend a lot of time and money on their appearance [12]. Research by He et al. [13] demonstrates that patients with body dysmorphic disorder have the highest demand for cosmetic surgeries and always seek to hide their imaginary flaw. Besides, studies carried out by Van de Grift et al. [14] and Fingeret et al. [15] show that satisfaction or dissatisfaction with surgery can be influenced by psychological components. However, the research literature has not given a definitive answer regarding whether surgeries can significantly improve body image concern, sexual body image and its related variables such as sexual self-esteem. Considering the high costs and significant effects of cosmetic surgery on individuals’ body and mind, it is crucial to examine the psychological effects of this growing phenomenon, especially in Iranian society.

## Method

The present study was a single-group pretest–posttest quasi-experimental design. The research data were collected during a period ranging from March 2015 to January 2016. All procedures were performed by a single surgeon. The research target population all comprised of women aged 20–40 years who applied for nose surgery and referred to Mashhad beauty centers. From a total of 100 volunteers, 40 patients were chosen. These patients, having given their informed consent, were chosen through purposive method and responded to the Body Image Concern Inventory (BICI), Sexual Self-Esteem Index for Women (SSEI-W) and Body Exposure during Sexual Activities Questionnaire (BESAQ) before and after rhinoplasty. A structured clinical interview was conducted with the participants, and a demographic checklist was completed. The inclusion criteria consisted of the following: being female, aged between 20–40 years and obtaining informed consent. The exclusion criteria included a history of any previous cosmetic surgery or a history of a trauma damaging the beauty, a psychological disorder based on the structured clinical interview (SCID) conducted by a clinical psychologist, existence of neurological problems based on the psychiatrist’s diagnosis, suffering from chronic physical

illnesses and substance abuse. Ethical and institutional approval was obtained prior to data collection from participants. Data were analyzed by a *t* test using SPSS-24 software. All stages of the research were performed based on the latest version of the Helsinki Convention.

## Tools

### Demographic Questionnaire

It was prepared and used by the researcher to collect personal information such as age, education, socioeconomic status, history of illness, treatment history and drug use time.

### Structured Clinical Interview (SCID)

It is a clinical interview applied for diagnosis of axis I disorders based on DSM-IV. The reliability coefficient between assessors for SCID was reported to be 60% [16]. The diagnostic agreement of this tool in Persian has been desirable for most of the general and specific diagnoses with a reliability coefficient of greater than 60%. Also, the Kappa coefficients for all current diagnoses and lifetime diagnoses were calculated to be 0.52 and 0.55, respectively [17].

### Body Image Concern Inventory (BICI)

This questionnaire was designed by Littleton and colleagues in 2005. This test encompasses 19 items rated on a Likert scale ranging from never (1) to always (5), and the total score is between 19 and 95. Two factors have been identified: The first factor (12 items) is related to dissatisfaction with and shame about appearance, and the second factor (7 items) is associated with interference with function due to apparent concern. Since these two factors are strongly correlated, Littleton and colleagues suggest using a total score. The cutoff score has been proposed to be 72 [18]. The questions are scored directly. Entezari and Alavizadeh [19] also reported the internal consistency of this test to be 0.89 using Cronbach's alpha method. In a study by Littleton et al. [20], the reliability of this questionnaire was 93% through Cronbach's alpha and the correlation of the items with the total scale was estimated to be between 32 and 73%. In Iran, Basaknezhad and Ghaffari [21] reported the validity of this test to be 0.95 based on internal consistency through Cronbach's alpha method. In this research, a total score has also been used.

### Sexual Self-Esteem Index for Women-Short Form (SSEI-W-SF)

This questionnaire is a self-report tool that has been developed by Zeanah and Schwarz [22] to evaluate all key dimensions of sexual self-esteem of women. It consists of 35 items and is a reliable tool for understanding various aspects of female sexual self-esteem. The questions are designed on a 6-point Likert scale ranging from 1 to 6 (strongly disagree to strongly agree). In Iran, Farrokhi and Shareh [23] determined the validity and reliability of the Persian version of SSEI-W-SF. The internal consistency coefficient of the items was 0.88 in the whole sample. The correlation coefficients between each item and the total score of the scale were between 0.54 and 0.72 ( $p < 0.001$  in all cases). In exploratory factor analysis, five factors of skill/experience, attractiveness, control, moral judgment and adaptiveness were obtained, which totally explained 37% of the variance. Test–retest reliability coefficient was reported to be 0.91 for the whole scale and between 0.82 and 0.94 for its five subscales. Moreover, a significant positive relationship was observed between SSEI-W-SF with Coppersmith Self-Esteem Scale ( $r = 0.31$ ,  $p < 0.05$ ) and Female Sexual Function Index ( $r = 0.31$ ,  $p < 0.05$ ), which indicates the convergent validity of this scale. The divergent validity of this index with a depression subscale of DASS-21 was also confirmed ( $r = 0.29$ ,  $p < 0.05$ ).

### Body Exposure During Sexual Activities Questionnaire (BESAQ)

This questionnaire was developed by Cash and colleagues in 2004 to assess the role of body image during sexual relationships, and its validity and reliability were confirmed in a study. The questionnaire measures physical self-awareness and exposure avoidance during sex. This questionnaire consists of 82 items and evaluates the individual's mental image experiences in the sexual relationship. The items are scored based on a 5-point Likert scale ranging from "never" (score zero) to "always or almost always" (score 4), and the total score is between 0 and 112 [24]. A lower score in BESAQ is associated with better body image during intimate relationships. A higher score is related to weaker sexual function [25]. Cronbach's alpha for women is between 0.96 and 0.97 [25–27].

## Findings

A correlated group *t* test was applied to compare the pretest and posttest scores of the subjects in the research variables. The assumptions of this test, including the prerequisite of normal distribution, were examined by Kolmogorov–

Smirnov test. Fifty-five percent of the participants were married, and 45% were single. Of the subject, 2.5% were below diploma, 22.5% had a diploma, 60% had a bachelor's degree, and 15% had a master's degree and Ph.D. Furthermore, 83% of the subjects had moderate socioeconomic status, 11% moderate to high socioeconomic status and 6% moderate to low socioeconomic status.

The mean and standard deviation of scores of three research variables along with the results of Kolmogorov–Smirnov test are provided in Table 1.

As shown in Table 1, the assumption of normal distribution of the scores of the three indices is established (all  $> 0.05$ ).

Results in Table 2 suggest a significant improvement in body image concern of women after rhinoplasty surgery ( $p < 0.01$ ). Additionally, given the obtained results, it can be concluded that there is no significant difference in the indices of sexual body image and sexual self-esteem in the pretest and posttest ( $p > 0.05$ ).

A Pearson product–moment correlation was computed to assess the relationship between patients' age and their body image concern, sexual body image and sexual self-esteem (Table 3). There was no correlation between age and body image concern ( $r = 0.11$ ,  $n = 40$ ,  $p = 0.48$ ), sexual body image ( $r = 0.27$ ,  $n = 40$ ,  $p = 0.09$ ) and sexual self-esteem ( $r = -0.11$ ,  $n = 40$ ,  $p = 0.46$ ).

As shown in Table 4, a Chi-square test of independence was performed to examine the relation between body image concern and marital status. The relation between these variables was not significant ( $X^2(23) > = 31.24$ ,  $p = 0.11$ ).

As shown in Table 5, a Chi-square test of independence was performed to examine the relation between sexual body image and marital status. The relation between these variables was not significant ( $X^2(31) > = 28.89$ ,  $p = 0.52$ ).

As shown in Table 6, a Chi-square test of independence was performed to examine the relation between sexual self-esteem and marital status. The relation between these variables was not significant ( $X^2(32) > = 31.91$ ,  $p = 0.47$ ).

Based on the results of the analysis, there was a significant relationship between level of education and body image concern ( $r_s = 0.38$ ,  $p < 0.05$ ) and also between education and sexual self-esteem ( $r_s = 0.40$ ,  $p < 0.05$ ).

## Discussion

The present study investigated the effectiveness of rhinoplasty in body image concern, sexual self-esteem and sexual body image in patients undergoing nose surgery. The research results demonstrated that rhinoplasty has made a significant change in the index of body image concern although the mentioned surgery had no significant effect on the indices of sexual self-esteem and sexual body image. Studies reveal that psychological causes played a major role in the tendency toward cosmetic surgery [28]. Diversityism, making changes in the face and reducing apparent dissatisfaction, improving body image and increasing sexual self-esteem can be considered as some psychological aspects of the tendency to cosmetic surgery [29]. Results of studies indicate that many factors (such as the media, family and peers) cause women to internalize

**Table 1** Descriptive statistics along with the results of Kolmogorov–Smirnov test of the research variables

Variable	Stage	Number	Mean	SD	Kolmogorov–Smirnov statistic	Significance level	Result
Body image concern	Pretest	40	42.6	12.2	0.76	0.58	Normal
	Posttest	40	38.1	9.3	0.48	0.97	Normal
Sexual body image	Pretest	40	34.3	16.7	0.57	0.89	Normal
	Posttest	40	31.5	16.9	0.61	0.85	Normal
Sexual self-esteem	Pretest	40	141.2	19.1	0.8	0.54	Normal
	Posttest	40	146.3	23.9	0.68	0.74	Normal
Experience/skill	Pretest	40	29.1	4.2	0.96	0.31	Normal
	Posttest	40	28.8	4.6	0.67	0.77	Normal
Attractiveness	Pretest	40	29.3	4.8	0.69	0.73	Normal
	Posttest	40	31.02	5.4	0.49	0.96	Normal
Control	Pretest	40	24.5	5.6	0.71	0.69	Normal
	Posttest	40	27	6.6	0.64	0.81	Normal
Moral judgment	Pretest	40	32.7	5.8	1.1	0.16	Normal
	Posttest	40	33.1	7.5	0.86	0.45	Normal
Adaptiveness	Pretest	40	25.6	4.3	0.63	0.82	Normal
	Posttest	40	26.4	5.9	0.05	0.96	Normal

**Table 2** *T* test results for the research variables

Variable	<i>T</i> -index	Degree of freedom	Significance level	Percentage of improvement
Body image concern	2.6	39	0.01	0.15
Sexual body image	1.07	39	0.29	0.04
Sexual self-esteem	– 1.3	39	0.2	0.04
Experience/skill	0.28	39	0.78	0.002
Attractiveness	– 1.8	39	0.08	0.07
Control	– 1.8	39	0.07	0.07
Moral judgment	– 0.32	39	0.75	0.002
Adaptiveness	– 0.96	39	0.34	0.02

**Table 3** Pearson correlation results for age and body image concern, sexual body image and sexual self-esteem

	Post-BIC	Post-SBI	Post-SSE	Age
<b>Correlations</b>				
<i>Post-BIC</i>				
Pearson correlation	1	0.606**	– 0.360*	0.114
Sig. (two-tailed)		0.000	0.022	0.486
<i>N</i>	40	40	40	40
<i>Post-SBI</i>				
Pearson correlation	0.606**	1	– 0.507**	0.271
Sig. (two-tailed)	0.000		0.001	0.091
<i>N</i>	40	40	40	40
<i>Post-SSE</i>				
Pearson correlation	– 0.360*	– 0.507**	1	– 0.119
Sig. (two-tailed)	0.022	0.001		0.463
<i>N</i>	40	40	40	40
<i>Age</i>				
Pearson correlation	0.114	0.271	– 0.119	1
Sig. (two-tailed)	0.486	0.091	0.463	
<i>N</i>	40	40	40	40

\*\*Correlation is significant at the 0.01 level (two-tailed)

\*Correlation is significant at the 0.05 level (two-tailed)

**Table 4** Results of Chi-square test comparing body image concern across marital status

	Value	<i>df</i>	Asymp. Sig. (two-sided)
Pearson Chi-square	31.246 <sup>a</sup>	23	0.117
Likelihood ratio	42.235	23	0.009
Linear-by-linear association	2.945	1	0.086
<i>N</i> of valid cases	40		

<sup>a</sup>48 cells (100.0%) have expected count < 5. The minimum expected count is 0.45

social ideals of beauty, which leads to satisfaction or dissatisfaction with their bodies [30]. The research by Juhl et al. [31] suggested that personality characteristics,

including neurotic traits, can affect satisfaction or dissatisfaction with breast cosmetic surgery in these patients. Patients seeking facelift procedures often have emotional and social concerns about their facial appearance, which are significantly higher than the general population, and these psychological attitudes can be reflected in the outcome of treatment [32]. Results of the research by Felix et al. [33] which are consistent with the findings of the present study revealed that rhinoplasty significantly reduces the score of body dysmorphic disorder or appearance-related concerns. Besides, this research finding is consistent with the results obtained by Grammas and Schwartz [34] who report that rhinoplasty enhances body image satisfaction. However, these results are inconsistent with the study carried out by Hashemi [35] who showed that the levels of body image concern in patients undergoing rhinoplasty increased in a three-month follow-up. In this research, it was shown that probably the reason for this increased concern is the expectation of receiving praise from others, which increases body image concern according to the principles of learning theories. However, it should be mentioned that satisfaction with the outcome of cosmetic surgery is associated with body image perception. Hence, when we speak of body image satisfaction, we are not referring to the beauty described by others, but it refers to one’s mental reaction to physical appearance (Table 7).

Moreover, results of the study by Bani Asadi [36] indicated that rhinoplasty surgery does not have a significant effect on an individual’s sexual body image and the only variable that can influence sexual body image is having surgeries with the aim of achieving beauty and removing apparent imperfections related to body structure and sexual organs, which is consistent with the findings of this study. Multiple studies have been conducted on the impact of rhinoplasty on body image and self-conception, but the results of some of the studies are incongruent with the findings of the present research. For example, the study by Naderi and Akbari [37] aimed to compare self-esteem in three groups of people requesting cosmetic surgery, people who have conducted cosmetic surgeries and ordinary people suggested that there is significant difference

**Table 5** Results of Chi-square test comparing sexual body image across marital status

	Value	df	Asymp. Sig. (two-sided)
<i>Chi square tests</i>			
Pearson Chi-square	29.899 <sup>a</sup>	31	0.523
Likelihood ratio	41.188	31	0.104
Linear-by-linear association	0.204	1	0.652
N of valid cases	40		

<sup>a</sup>64 cells (100.0%) have expected count < 5. The minimum expected count is 0.45

**Table 6** Results of Chi-square test comparing sexual self-esteem across marital status

	Value	df	Asymp. sig. (two-sided)
Pearson Chi-square	31.919 <sup>a</sup>	32	0.471
Likelihood ratio	43.961	32	0.077
Linear-by-linear association	0.037	1	0.848
N of valid cases	40		

<sup>a</sup>66 cells (100.0%) have expected count < 5. The minimum expected count is 0.45

between these three groups in the index of self-concept and this index has been reported to be higher in the group that has undergone surgery. Results of the research by Klassen et al. [38] also revealed that cosmetic surgery can be effective in promoting the indices of self-esteem and body image. Results of a systematic research, including 37 prospective and retrospective studies, done by Honigman

et al. [39] revealed that cosmetic surgery is accompanied by positive psychological effects in the indicators of anxiety, body image, self-esteem, mood, social interactions and quality of life. Results of the study by Von Soest et al. [40] also displayed that cosmetic surgery has positive impacts on self-esteem and body image. Results of the research conducted by Pasha et al. [37] indicated that a significant difference exists between duals undergoing cosmetic surgery and ordinary people in terms of body image.

The findings reported by Roosenboom et al. [41] and Wähmann [42] indicated a significant long-term improvement in QoL following rhinoplasty. Also, Mousavi et al. [43] suggest that QoL improves up to 6 months following rhinoplasty. In one prospective study, the authors demonstrate an improvement in the subjective perception of the nasal appearance and the associated quality of life indicating the body image as an important domain of patient’s satisfaction in functional rhinoplasty [44].

A meta-analysis was conducted by Yang et al. [45] comparing preoperative and postoperative patient satisfaction following aesthetic rhinoplasty using the Rhinoplasty Outcomes Evaluation scale which is a validated instrument routinely used to assess patient satisfaction. Further comparison of outcomes was performed based on age and duration of follow-up. Post-rhinoplasty ROE scores were significantly higher than the pre-rhinoplasty scores in all follow-up groups ( $p < 0.0001$ ), indicating positive improvement in QoL following the procedure. From a pooled analysis of 8 studies, a significant improvement in patient satisfaction and QoL was reported following aesthetic rhinoplasty (SMD = 5.87; 95% CI

**Table 7** Spearman’s correlation results for education and body image concern, sexual body image and sexual self-esteem

		Correlations				
			Post-BIC	Post-SBI	Post-SSE	Education
Spearman’s rho	Post-BIC	Correlation coefficient	1.000	0.655**	− 0.394*	− 0.381*
		Sig. (two-tailed)	.	0.000	0.012	0.015
		N	40	40	40	40
Post-SBI		Correlation coefficient	0.655**	1.000	− 0.533**	− 0.205
		Sig. (two-tailed)	0.000	.	0.000	0.204
		N	40	40	40	40
Post-SSE		Correlation coefficient	− 0.394*	− 0.533**	1.000	0.405**
		Sig. (two-tailed)	0.012	0.000	.	0.009
		N	40	40	40	40
Education		Correlation coefficient	− 0.381*	− 0.205	0.405**	1.000
		Sig. (two-tailed)	0.015	0.204	0.009	.
		N	40	40	40	40

\*\*Correlation is significant at the 0.01 level (two-tailed)

\*Correlation is significant at the 0.05 level (two-tailed)

3.55–8.19). These results are in accordance with a study conducted by Cingi [46].

Mattei et al. [47] conducted a study and found that cosmetic surgery has a positive effect on both states of distress associated with psychological well-being and disturbance associated with body image. In a new study in Singapore, it was found that patients with low to moderate dysmorphic disorder who have nose defects confirmed by surgeons benefit from rhinoplasty [48].

Nevertheless, there are studies that do not show the positive effect of rhinoplasty on the psychological components of applicants. For example, the research by Dowling et al. [49] indicates that cosmetic surgery has no significant effect on self-esteem although it has been accompanied by improved anxiety syndrome, depression and body dysmorphic disorder.

Cook et al. [50] maintained that the evidence showing the effectiveness of cosmetic surgery in psychological components is not convincing. Furthermore, in a study on 55 patients undergoing rhinoplasty, Edgerton et al. [51] demonstrated that some of the symptoms of personality disorder can occur after rhinoplasty. Mental health specialists have conducted numerous studies in this regard due to the importance of body image in social communication and interpersonal relationships. Results of their studies show that some people have a permanent mental preoccupation about their physical appearance and report excessive and disturbing fear of being ugly or unattractive despite their physical appearance being natural or almost natural [52]. These individuals do not pay attention to report by others about their appearance, which in most cases is better than their own, and choose to undergo surgery while spending expensive costs and tolerating a lot of pain and suffering [53]. In addition, most of the selected traits of attractiveness and seduction for women are related to their facial organs. The importance of a sense of femininity in building sexual self-esteem is crucial. Indeed, it was determined that when respondents show lower sexual self-esteem, they tend to estimate their bodies as being “more masculine” [54].

Besides, it was found that cosmetic surgery improves the quality of life, self-esteem and self-image of healthy patients psychologically [55]. Dissatisfaction with appearance is the main reason for the tendency to undergo cosmetic surgeries. Therefore, one cannot be sure which patients will benefit from this kind of surgery. The reason is that some of them have unrealistic expectations or distorted body image.

Heroer [56] came to the conclusion that patients with higher psychological distress associated with low self-awareness about appearance before surgery benefit more from the surgery that has been performed properly and will have greater satisfaction. Thus, perhaps the reason why no

significant difference was found in sexual body image before and after surgery in this study is the low level of psychological distress associated with self-awareness about appearance before surgery.

Perhaps the reason for the widespread use of cosmetic surgery is the existence of factors such as variety seeking, the possibility of change in the face, a minimum level of dissatisfaction, the persistence of change and the increasing concentration of mass media on appearance. Findings of our study indicated that rhinoplasty has been accompanied by a decrease in the index of body image concern although this surgery has made no significant effect on the indices of sexual self-esteem and sexual body image. Given the contradictory results that have been reported in this area, it is necessary to conduct more randomized clinical trials. These findings can have important clinical applications in the horizon of the prospect of psychiatric disorders treatment in the field of cosmetic surgery. The current study was subject to certain limitations in the implementation process, the most important of which included the sample selection procedure in which the age range was limited to patients of 20–40 years, which limits the generalizability of the findings. The convenience sampling method suggests the possibility of the intervention of motivational components, and finally, the failure to implement the follow-up made it impossible to investigate the stability of the resulting changes. We suggest that a similar research be done on a male sample in future studies and the obtained results be compared with the findings of the present research. Further, we suggest the use of a greater sample size, more groups and a follow-up in subsequent studies.

A possible explanation for the improvement in sexual body image among the female participants of this study is the Islamic dress code in Iran, according to which women are required to cover their head and body and are only allowed to reveal their face and hands in public. Since only their face can be seen in public, women are more inclined to undergo rhinoplasty to improve their sexual body image through such operations. Regarding cultural and religious aspects, a study found that for practicing Muslim Emirati females living in their native Muslim country for whom wearing the hijab is a normal aspect of everyday life just like Iranian females, perception of facial attractiveness is compromised by wearing this garment. They argue that this effect of wearing the hijab is not consistent with a preference for one’s own cultural group (cultural endogamy) and may, instead, occur because wearing a hijab occludes external features, such as hair and ears, which normally contribute to the perception of human facial attractiveness. “In sum, while wearing the hijab may be dominated by male attitudes toward suppressing female attractiveness toward males, the findings from this study suggest that female Muslims perceive the negative influence of wearing

the hijab on female facial attractiveness”, they suggested [57].

Contrarily, another study found that women who practiced more strict Islamic veiling techniques showed increased body satisfaction and self-esteem and decreased depression scores and desire for cosmetic rhinoplasty. Findings show that observance of a strict religious practice has a protective effect on psychological health. In addition, the authors concluded that the females with veils were less likely to report a fear of becoming fat and overvaluing the importance of shape and weight and public’s, which stem from an Islamic value system that places due emphasis on dignity and internal beauty rather than shame about how one may look, from the authors’ point of view [58].

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#### Compliance with Ethical Standards

**Conflict of interest** The authors have not mentioned any conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee.

**Informed Consent** Informed consent was obtained.

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