



One-year Follow-up of Body Image Changes and Sexual Satisfaction in Women Undergoing Cosmetic Breast Surgery

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Quantitative Study

Abstract

Background: Body image is an important psychiatric element in women, and breasts are the main body parts that determine women's body image. Therefore, this study was conducted with the aim to evaluate the sexual and body image satisfaction of women undergoing cosmetic breast surgery.

Methods: The present study was a descriptive study. The study population included 185 women who were undergoing cosmetic breast surgery and voluntarily participated in this survey in Behsima clinic and Dr. Keshavarz's clinic, Shiraz, Iran, between June 2016 and December 2017. Data were collected using the Sexual Satisfaction Questionnaire and Body Image Concern Inventory (BICI) (Littleton et al.) 6 months and 1 year after surgery. After data collection, data were compared among 3 different measurements using repeated-measures ANOVA in SPSS software. The significance level in this study was 0.05.

Results: The mean \pm SD of age of the participants was 35 ± 1.89 years; the majority of the participants (56.25%) were 31-40 years old. More than half of the participants (50%) were college graduates. The mean score of sexual satisfaction was 118.34 ± 25.4 , 121.12 ± 26.8 , and 125.13 ± 15.42 , before surgery, and 6 and 12 months after surgery, respectively, and that of body image scores were 32.28 ± 9.5 , 29.06 ± 9.91 , and 29.15 ± 10.64 , respectively. There was a significant difference among the 3 intervals ($P < 0.001$).

Conclusion: An increase was observed in the sexual satisfaction and body image of a group of healthy women at the 6-month and 12-month follow-up after cosmetic breast surgery.

Keywords: Body Image, Mammoplasty, Sexual Satisfaction

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Introduction

Physical attractiveness is seen as a positive trait when pursuing opportunities socially and in other areas of life, as it offers advantages to others who are less desirable. Previous studies have shown that elective plastic surgery is becoming more common as a means of achieving a perceived perfect body image and meeting psychological and social needs (Bailey, Gammage, & van Ingen, 2017; Goodman et al., 2016; Esmalian & Nodargahfard, 2020; Zehra, Doyle, Barry, Walsh, & Kell, 2020; Medeiros de Morais et al., 2017; Erbil, 2018). Body image is an important psychological construct of self-concept, which refers to the individual's feelings, attitude, and understanding about his/her physical appearance and beauty (Bailey et al., 2017). Distorted body image is associated with several psychopathologies like reduced self-esteem, depression, eating disorders, and substance abuse not only in adolescents and young adults (Goodman et al., 2016; Esmalian & Nodargahfard, 2020), but also in older adults in which it impairs their quality of life (QOL) (Zehra et al., 2020; Medeiros de Morais et al., 2017) and causes psychopathologies (Erbil, 2018).

The formation of a positive body image in an individual can be influenced by various factors, including social and cultural norms, indicating acceptance by others, parents' and peers' perspectives, and media (Walker, Krumhuber, Dayan, & Furnham, 2021). In line with the rising popularity of social media, a growing number of young people are undergoing cosmetic procedures, with the number officially rising from 17.2% in 2014 to 18.2% in 2017 (Aldosari, Alkarzae, Almuahaya, Aldahri, & Alrashid, 2019). Along with the alarming data on body image dissatisfaction, there is also the question of high national divorce rates and the end of intimate relationships. Divorce and a lack of maternal affection may have psychological consequences on all children of divorce and divorcees, such as elevated depressive symptoms and lower marital satisfaction (Chun, Jang, Choi, Shin, & Park, 2016). Breasts are one of the main body parts determining body image and sexual attractiveness (Sadikaj, Moskowitz, & Zuroff, 2017).

In addition to the relationship between general body image and sexual self-concept, sex appeal, subjective well-being (Horvath, Smith, Sal, Hevesi, & Rowland, 2020), and sexual satisfaction in women (Kvalem, Graham, Hald, Carvalheira, Janssen, & Stulhofer, 2020), breasts play a major role in their sexual and marital satisfaction (Brandao, Pedro, Nunes, Martins, Costa, & Matos, 2017). After controlling for confounding variables, linear regression research showed that appearance dissatisfaction was substantially linked to sexual pleasure in Scandinavian women and men, as well as Belgian men. As a result of research, attractiveness assessment tended to play an equal role in sexual pleasure in both older adults and younger adults (Kvalem et al., 2020).

The British Association of Aesthetic Plastic Surgeons (BAAPS), the only organization solely dedicated to advancing safety, innovation, and excellence in cosmetic surgery, has released its annual audit. According to the new figures, over 28,000 procedures took place in 2018, a small increase of 0.1% in 2017. Women underwent 92% of all cosmetic procedures recorded, and as of 2017, the 3 most popular procedures for women were breast augmentation, breast reduction, and blepharoplasty (eyelid surgery). The biggest increases for women were in liposuction which rose 12%, and facelifts which rose 9% (Nerini, Matera, Di Gesto Policardo, & Stefanile, 2019). These statistics show the importance of breasts for women. Iran, along with other countries, has faced a growing tendency toward cosmetic

procedures among women, which has changed this issue to a fashion trend in the community, involving a great proportion of adolescents and young adults (Chun et al., 2016; Sadikaj et al., 2017; Horvath et al., 2020; Kvalem et al., 2020).

The reason for this growth has to be further elucidated by studies; some Iranian researchers have suggested that most women undergoing cosmetic procedures have narcissistic personality traits (Kasmaei, Farhadi, Karimy, Kazemi, Morsali, & Nasollahzadeh, 2020), while others have suggested that dissatisfaction with body image and weight is the leading cause of the tendency towards cosmetic procedures (Barati, Kazemi Kilehgolan, Parsafar, Jalilian, & Afshari, 2019). Iranian studies have not investigated women's body image and sexual satisfaction after cosmetic breast surgery; however, studies in other countries have indicated that cosmetic breast surgery significantly improves women's QOL, body satisfaction, and self-esteem and decreases body image-related psychopathologies like eating disorders (Saariniemi, Helle, Salmi, Peltoniemi, Charpentier, & Kuokkanen, 2012). Body image and sexual satisfaction are dominated by cultural and social factors, and to the best of our knowledge, no Iranian study has addressed this issue; thus, the present study was conducted with the aim to evaluate sexual and body image satisfaction of women 1 year after undergoing cosmetic breast surgery.

Methods

The present study was a descriptive study. The study population included women undergoing cosmetic breast surgery in Behsima Clinic and Dr. Keshavarz's clinic, Shiraz, Iran, between June 2016 and December 2017. The protocol of the study was approved by the Ethics Committee of Shiraz University of Medical Sciences, Iran. A total of 100 women were considered as the sample of this study. According to Kline (2011), SEM analysis requires a large sample size. Kline (2011) suggests that a sample size of less than 100 is considered small, 100-200 is considered as a medium sample size, and more than 200 is considered a large sample size. According to Cochran's formula, 196 people were selected as a sample based on the placement of an undetermined size community., of which 6 people did not have the inclusion criteria and were excluded from the study process. Of the remaining 190 women, only 185 women were completely willing to participate in the study. The researcher referred to the selected clinics and selected participants according to the inclusion and exclusion criteria. The participants entered the study voluntarily. The inclusion criteria consisted of married women who were undergoing breast surgery, had a minimum literacy of reading and writing, and were willing to participate in the study. Then, the researcher explained the study objectives and steps to eligible participants and asked them to participate in the study. Patients, who signed a written informed consent form, received explanations about completing the Sexual Satisfaction Questionnaire for women and Body Image Concern Inventory (BICI) designed by Littleton, Radecki, and Berenson (2005). The patients completed this questionnaire before surgery, 6 and 12 months after the operation.

All procedures were performed by 1 surgeon after correct positioning of the patient on the operating room table and implementing general anesthesia based on the same protocol. The surgical procedure of breast augmentation was as follows. First, preoperative markings were made on the patient's breasts in an upright position, used as the reference point during the procedure. The inframammary approach was used for the complete visualization of the implant pocket. The incision was made in the predicted new inframammary fold, along with the proposed

markings, and electrocautery was used to continue dissection with specific attention to preserving the lateral intercostal cutaneous nerves. Then, implants were carefully placed by a minimal-touch technique. The implant pocket was closed with a separate layer of a suture before closing the skin.

The Hulbert Index of Sexual Assertiveness (HISA) includes 25 items which are scored on a 5-point Likert scale ranging from 0 (Always) to 4 (Never) (Hurlbert, 1991). In questions 3, 4, 5, 7, 12, 15, 16, 17, 18, 21, 22, and 23, the scores are reversed (always = 4; never = 0). A high test score indicates a high degree of sexual assertiveness. The total score of the index ranges from 0 to 100. David Farley Hulbert obtained a Cronbach's alpha coefficient of 0.86 for the HISA (Hurlbert, 1991). The factor coefficients of the items ranged between 0.33 and 0.89, indicating a satisfactory score for the questionnaire, which was confirmed by Manavipour, Pirkhaefi, Rouhani, and Dibaji (2009) with a Cronbach's alpha of 0.89. A Cronbach's alpha coefficient of 0.76 confirmed the reliability of the questionnaire used in this study.

The second questionnaire completed in this study, was the Body Image Concern Inventory (BICI) designed in 2005 by Littleton et al. (2005). This questionnaire includes 19 questions, measuring the 2 dimensions of dissatisfaction and the individual's shame regarding his/her appearance, self-examination, concealment of perceived defects, and the degree of interference with the individual's appearance in social function. Each question is scored on a 5-point Likert scale ranging from never (score 1) to always (score 5). Higher scores indicate a greater fear of the body and distorted body image. Littleton et al. (2005) reported Cronbach's alpha coefficients of 0.93, 0.92, and 0.76 for the total inventory and the first and second factors, respectively. In Iran, the reliability of the Persian version of the BICI was confirmed by Basak Nejad (2008) with a Cronbach's alpha coefficient of 0.95. In the present study, the reliability coefficient of the questionnaire was confirmed with a Cronbach's alpha coefficient of 0.81.

The collected data was entered into the SPSS software (version 22.0; IBM Corp., Armonk, NY, USA). The quantitative variables are presented as mean \pm standard deviation (SD) and categorical variables as frequency (percentage). Mauchly's test of sphericity was used to assess equality of variance between groups; thus, the questionnaires' scores were compared among 3 different measurements using repeated-measures ANOVA. The Bonferroni post hoc test was used for the pairwise comparison of the variables. P-values of 0.05 or less were considered statistically significant in all tests.

Results

The Mean \pm SD of age of the participants was 35 ± 1.28 with the majority (56.25%) aged 31-40 years. Most patients (50%) had a bachelor's degree, 7 patients (21.87%) had an associate's degree, 6 patients (18.75%) had a high school diploma, 2 (6.25%) had a master's degree, and 1 individual had pre-high school education. Of the total 32 patients, most had a marriage duration of 10-20 years (68.75%), and only 5 patients (15.62%) had a marriage duration of 1-9 years, and 5 patients (15.62%) had a marriage duration of 21-30 years. Most patients (43.75%) had either 1 or 2 children, and only 2 patients (6.25%) had 3 or no children.

The results of the HISA showed that the mean \pm SD of the scores before surgery was 118.34 ± 25.4 that increased to 121.12 ± 26.8 after 6 months and 125.13 ± 15.42 after 1 year. Mean \pm SD of the body image scores were 32.28 ± 9.5 , 29.06 ± 9.91 , and 29.15 ± 10.64 before, 6 months after, and 1 year after surgery, respectively (Table 1).

Table 1. Results of descriptive analysis of the studied variables

Variables	Three intervals	Mean \pm SD	P-value
Sexual Satisfaction	Before surgery	118.34 \pm 25.4	0.001
	6 months after surgery	121.12 \pm 26.8	
	6 months after surgery	125.13 \pm 15.42	
Body Image Changes	Before surgery	32.28 \pm 9.5	0.001
	6 months after surgery	29.06 \pm 9.91	
	6 months after surgery	29.15 \pm 10.64	

The results presented in table 2 show that Mauchly's test of sphericity is not significant, which indicates the assumption of sphericity, so the repeated measures test can be used.

As can be seen in table 3, the results of ANOVA showed a significant difference among the 3 intervals ($P = 0.001$); further analysis with the Bonferroni post hoc test showed a significant difference between before surgery and 6 months after surgery ($P = 0.001$) and before surgery and 1 year after surgery ($P = 0.001$), while there was no difference between 6 and 12 months after surgery ($P = 0.1$).

As can be seen in table 4, the results of ANOVA showed a significant difference among the 3 intervals ($P = 0.001$); further analysis with the Bonferroni post hoc test showed a significant difference between before surgery and 6 months after surgery ($P = 0.001$) and before surgery and 1 year after surgery ($P = 0.02$), but there was no difference between 6 and 12 months after surgery ($P = 0.46$).

Discussion

The purpose of this study was to evaluate the satisfaction of women with their body image and sexuality after reconstructive breast surgery. The results of the present study showed a significant increase in sexual satisfaction and body image 6 months and 1 year after surgery compared to before the operation, while there was no difference between 6 and 12 months after surgery. In accordance with numerous studies, for example, the studies by Chun et al. (2016), Brandao, Pedro, Nunes, Martins, Costa, and Matos (2017), Nerini et al. (2019), Sobanko, Dai, Gelfand, Sarwer, and Percec (2018), and Khazir, Dehdari, and Mahmoodi (2014), the results of the present study indicate that cosmetic breast surgery may increase patients' sexual satisfaction and improve their body image. As sexual attractiveness is associated with sexual satisfaction and functioning, breasts can play a major role in this regard, and dissatisfaction with breasts reduces women's self-esteem and reduces their sexual satisfaction (Chun et al., 2016). The increasing frequency of breast augmentation in the United States indicates the growing desire of women to undergo this surgery (Brandao et al., 2017) to increase their self-esteem (Sobanko et al., 2018).

Women's tendency toward and motivation for cosmetic breast surgery is considered a cultural orientation, and many cultural norms play a significant role in this regard. For example, in Iran, the growing tendency of women towards different cosmetic procedures on their face, breasts, etc. in previous decades has made this issue into a fashion trend that young women tend to follow (Nerini et al., 2019).

Table 2. Results of Mauchly's test of sphericity regarding the assumptions of using repeated measurements

Variables	Mauchly's W	Chi-square	df	P-value
Sexual Satisfaction	0.03	7.99	2	0.11
Body Image Changes	0.70	3.46	2	0.29

df: Degree of freedom

Table 3. The comparison of sexual satisfaction and body image by time periods using analysis of variance

Source of variance	Indexes	Value	F	P-value	Eta
Intra-subject comparison of sexual satisfaction	Pillai's Trace Test	0.84	79.68	0.001	0.84
	Wilks' Lambda	0.16	79.68	0.001	0.84
	Hottelling's Trace Test	5.31	79.68	0.001	0.84
	Roy's Largest Root Test	5.31	79.68	0.001	0.84
Comparison of body image within the subject	Pillai's Trace Test	0.58	21.34	0.001	0.58
	Wilks' Lambda	0.41	21.34	0.001	0.58
	Hottelling's Trace Test	1.42	21.34	0.001	0.58
	Roy's Largest Root Test	1.42	21.34	0.001	0.58

With the increased rate of women who have undergone several plastic surgeries, especially in Tehran, Iran, women who have natural faces, breasts, etc. are also drawn to this fashion trend and seek cosmetic surgery (Gladfelter & Murphy, 2008). Considering that the attitude towards cosmetic surgery is closely associated with Iranian's feelings about their body image, psychological aspects of the tendency and motivation of Iranian women based on cultural issues have to be further investigated (Baratloo & Khoudi, 2016).

The increased body image scores in the present study indicate the significant role of cosmetic breast surgery in women's sense of body image. Sarwer et al. (2005) and Sarwer and Crerand (2004) also reported an improvement in the body image of women undergoing cosmetic surgery. Cash, Duel, and Perkins (2002) have reported increased satisfaction with the surgical results and body image changes 2 years after breast augmentation with silicone gel-filled implants (Sarwer & Crerand, 2004), which is in line with the results of the present study. Alderman, Pusic, and Murphy (2016) have also reported that breast augmentation surgery with Natrelle silicone-filled breast implants or saline-filled breast implants improves body image in healthy women (Cash et al., 2002), which confirms the results of the present study.

Women who have a distorted body image may be drawn to cosmetic surgery due to undiagnosed psychopathologies, such as body dysmorphic disorder and eating disorders. Therefore, patients who complain of a distorted body image should receive a specialized consultation before surgery, as these patients might be dissatisfied with the results of the procedure and seek repeated surgeries due to their underlying psychological disease (Alderman et al., 2016). In the present study, all patients were examined by the physician in order to rule out any psychopathologies and the results, indicating satisfaction with the surgical results and the change in the appearance of their breasts, confirmed that all participants were healthy.

In the present study, both body image and sexual satisfaction increased after surgery, and 6 months and 1 year after surgery, which is in line with the study by Pujols et al., who reported a close association between body image and sexual satisfaction (Chun et al., 2016).

Table 4. Comparison of sexual satisfaction by time periods using the Bonferroni test

Variables	Three intervals	SS	MS	P-value*
Sexual Satisfaction	Before surgery up to 6 months after surgery	2.78	0.49	0.001
	Before surgery up to 1 year after surgery	6.78	2.33	0.020
	6 months to 1 year after surgery	4.00	2.73	0.460
Body Image Changes	Before surgery up to 6 months after surgery	3.21	0.48	0.001
	Before surgery up to 1 year after surgery	3.12	0.77	0.001
	6 months to 1 year after surgery	0.09	0.58	0.010

SS: Sum of squares; df: Degree of freedom; MS: Mean of squares

The indirect association between body image and sexual satisfaction is caused by the significant affect of body image on self-esteem, which plays a key role in sexual satisfaction. Furthermore, body image is directly associated with sexual satisfaction, as a woman who is ashamed of her body appearance has problems in her sexual and marital relationships, which affects her sexual satisfaction (Kvalem et al., 2020; Crerand, Franklin, & Sarwer, 2006).

Several studies have also reported significant improvements in sexual satisfaction and body image after elective reconstructive breast surgery, but these studies focused mainly on patients with breast cancer who had undergone therapeutic or risk-reducing mastectomy and suggested that different reconstruction techniques could increase sexual satisfaction and body image more prominently (Ackard, Kearney-Cooke, & Peterson, 2000; Gopie, ter Kuile, Timman, Mureau, & Tibben, 2014; Rojas, Onstad, Raker, Clark, Stuckey, & Gass, 2017). Although the results of these studies are consistent with the result of the present study, and confirm the significant role of breasts in women's sexual satisfaction and body image, the preoperational psychiatric status of patients who have lost their breasts for several months or years significantly predicts post-surgical satisfaction (Braude, Kirsten, Gilchrist, & Juraskova, 2017) and are not comparable to women who undergo breast surgery for cosmetic reasons.

One of the limitations of the present study was the number of patients who discontinued their participation in the study (18 out of 50), which could have affected the result. As all patients in the present research were satisfied with the surgical outcome, it could be possible that women who were dissatisfied with the results did not complete the study protocol. We tried to reduce the effect of this phenomenon on our results and tried to contact the patients who were lost to follow-up and ask the reason. Another limitation of the present study was an inability to record or control other factors that affect the study outcomes such as psychological, cultural, and familial factors; for example, marital satisfaction and interpersonal relations between spouses can have a great impact on their sexual satisfaction, but we could not control this issue in our subjects. A limitation in the study design was the lack of a control group to confirm that the results are completely associated with breast surgery. Future studies with a larger sample size, longer follow-up, and a control group can add to the results of the present study.

Conclusion

The present study examined 100 women who underwent elective cosmetic breast surgery, and showed that the procedure significantly improved their body image and sexual satisfaction; however, the small sample size and lack of a control group preclude the generalization of the findings of the study to the Iranian population. By presenting this study, physicians can gain insights into the impact of these 2 aspects (body image and sexual satisfaction) of the procedure, which will guide researchers' future research on this topic.

Conflict of Interests

Authors have no conflict of interests.

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The study population included women undergoing cosmetic breast surgery in Behsima clinic and Dr. Keshavarz's clinic, Shiraz, Iran. The protocol of the study was approved by the Ethics Committee of the Islamic Azad University of Shiraz (IR.IAU.SHIRAZ.REC, 067).

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