

Breast Surgery on the Post-operative Well-being of Women: A Prospective Evaluation

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Research

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Abstract

Background. Mammoplasty is the most common surgery that is used for both breast augmentation in healthy women (aesthetic plastic) and breast reconstruction (disease-related plastic) in women who have been diagnosed with and surgically treated for regional breast cancer with radical mastectomy (MRM). When compared to breast reconstruction surgery, aesthetic breast surgery is perceived to result in more favourable aesthetic outcomes.. This study aimed to examine the long-term effects of mammoplasty on the psychological adaptation of women.

Methods. A total of 44 30–50-year-old women participated in this study. They were divided into two groups based on the type of breast surgery that they had undergone (augmentation surgery [AS] vs. reconstruction surgery [RS]) and the time that had elapsed since their surgery (≤ 3 years vs. > 3 years).

Results. Our findings suggest that the psychological well-being of women who undergo AS declines over time. The women who had undergone AS ≤ 3 and > 3 years earlier did not differ in any of the indicators of emotional functioning. The only exception was their level of satisfaction with their breasts. We examined the impact of mammoplasty on the satisfaction levels and well-being of women who had undergone RS (after MRM). As expected, they were less satisfied with their breasts than those who belonged to the AS group. However, this was true only among those who had undergone their surgery ≤ 3 years earlier.

Conclusions. In conclusion, our findings underscore the need to provide psychological support to those who have undergone AS and RS. To shorten the adaptation process and enhance their mental well-being, personalised psychological interventions should be provided.

Introduction

Mammoplasty is the most common surgery that is used for both breast augmentation in healthy women (aesthetic plastic) and breast reconstruction (disease-related plastic) in women who have been diagnosed with and surgically treated for regional breast cancer with modified radical mastectomy (MRM).

Several studies have focused on aesthetic surgery, but they have primarily paid attention to its technical aspects. Nava et al.[1] have proposed that the measures adopted in augmentation surgery (AS) should be chosen based on an evaluation of post-operative complications, re-intervention rates, the reasons for re-operation, and patient-reported outcomes. Moreover, they have underscored the need for a national register and mandatory reporting policies to identify and promote decisional pathways that yield better patient outcomes. Several studies have examined the surgical outcomes of mammoplasty and paid special attention to its technical aspects. In their review article, Coombs [2] reviewed the literature on the breast augmentation surgical procedure and discussed the evolution of implants, patient assessments, and post-operative complications. Currently, aesthetic surgery offers innovative solutions that ensure the safety and health of women and are cognizant of their physical characteristics [3–5]. Some studies in

this domain have focused on the psychological and emotional effect of mammoplasty. The effects of AS on the psychological and sexual well-being of women first become apparent after 2 to 6 weeks. Zaborsk [6] found that breast AS does not influence neuroticism levels. This suggests that the constitutional personality traits of women who undergo such operations remain relatively unchanged after the surgical intervention. However, neuroticism may modulate the psychological changes that women experience after breast augmentation (e.g. higher post-operative life satisfaction).

In this regard, Coriddi [7] reported a significant improvement in self-reported quality of life. Specifically, there were significant changes in the level of satisfaction with one's breasts and psychosocial and sexual well-being. Swanson⁸ adopted a psychological perspective and found that 91% and 64% of breast augmentations are successful in improving self-esteem and quality of life, respectively. Despite these positive outcomes, the researchers did not report pre-operative satisfaction levels so it is difficult to refer this result to its baseline value.

AS is used even in disease-related surgery (i.e. reconstruction surgery [RS] after MRM for regional breast cancer). The large population of women who pursue breast augmentation has implications to the reconstructive surgeon as many patients who undergo present for reconstructive surgery have the desire for enhancement of their native breast volume. Patients who undergo breast RS after a mastectomy report greater satisfaction with surgical outcomes and a better body image than women who do not opt for reconstructive measures [8–9]. Most of the studies that have examined the outcomes of breast cancer treatment have focused on disease-free or overall survival and the effectiveness of therapeutic oncology regimens [10–12]. Few studies have examined the behavioural and psychological aspects that are related to breast surgery (disease-related plastic).

Wehrens [13] found that the psychological profiles of women who undergo RS are significantly better. Specifically, they tend to be more extroverted, socially and sexually active, talkative, and animated and more likely to take initiatives. a positive emotional pattern in early time after plastic surgery. In Shekhawat [14] study, such women reported high levels of satisfaction (89%) with their post-reconstruction body image and overall satisfaction. Then parameters such as anxiety and femininity showed a positive trend after RS over 1 year from the surgery plastic. When compared to breast RS, aesthetic breast surgery is perceived to result in more favourable aesthetic outcomes.

In past studies, the outcomes of AS and RS have predominantly been examined within a short duration after the procedure. Some studies have examined temporal changes in psychological variables. However, it is important to investigate the long-term positive and negative psychological sequelae to better understand their emotional adaptation process.

This study aimed to examine the long-term effects of mammoplasty on the psychological adaptation of women. Post-operative surveys were conducted to examine changes in patient satisfaction and quality of life after breast surgery

Methods

Ethical Statement

Ethical approval to conduct this study was granted by the Institutional Review Board of the University of L'Aquila, Italy (Prot. N° 36032/2017), and S. Salvatore Hospital of L'Aquila (Italy) (i.e. the hospital from which the participants were recruited).

Informed consent was obtained from each participant, and the study adhered to guidelines outlined in the Declaration of Helsinki [15].

Participants

A total of 44 30–55-year-old (mean = 40.4 ± 5.9) women participated in this study. They were living in Italy, and their education levels were as follows: high school graduate (45.5%), graduate (34.5%), and not graduated (20.5%). Further, 70.5% of them were employed.

We contacted 56 eligible patients, and 44 of them provided informed consent. Twelve patients declined the invitation to participate in the study. The participants were classified into 2 groups: a) the RS group, which consisted of 22 women who had undergone mammoplasty (mastectomy) after receiving a diagnosis of breast cancer and b) the AS group, which consisted of 22 women who had undergone mammoplasty for aesthetic reasons. RS group women have been enrolled in Oncological Division of S. Salvatore Hospital during their scheduled follow-up; A group women have been enrolled in hospital during their screening session for cancer prevention. Medical staff identified the eligible women and the recruitment was voluntary.

Eligible participants met the following inclusion criteria: a) age > 18 years, b) outpatients who have undergone breast surgery, and c) willingness to participate in the study and provide written informed consent.

The exclusion criteria were as follows: a) contraindications for mammoplasty (e.g. the presence of severe psychopathology, dysmorphic disorder, and/or severe systemic diseases), c) cancer recurrence, d) a prior diagnosis of cancer or concurrent diagnosis of another cancer, e) mastectomy after breast cancer recurrence, and f) the presence of severe chronic diseases or significant physical or psychological disabilities that could invalidate informed consent or their responses.

Table 1 presents the demographic characteristics of the participants.

Sociodemographic Variables

Two types of data were collected. First, demographic data were collected using self-report measures. we selected independent variables for inclusion in the analyses if they were characteristic of the age/life stage (e.g. educational level, occupational and marital status). Second, clinical data were collected using psychological assessments.

Assessments

The psychological measurement was conducted by the self-report questionnaire in order to detect demographic characteristics of the participants and the BREAST-Q test to evaluate the emotional impact of breast surgery.

Demographic Questionnaire. This self-report measure was used to assess the demographic characteristics of the participants (e.g. age, educational level, occupational status, time since mammoplasty, type of surgical intervention).

Italian Version of the BREAST-Q (i.e. post-operative version) [16]. The BREAST-Q assesses the patient-reported outcomes of plastic and reconstructive breast surgery. We applied respectively subscale for both kind of surgery composed of five indexes measuring well-being and satisfaction: satisfaction with breasts, satisfaction with outcome, psychosocial well-being, sexual well-being. All subscales are scored from 0 to 100 by Rasch score. Higher scores are indicative of greater satisfaction or better functioning.

Procedure

This study was conducted in collaboration with general practitioners and breast cancer specialists. They identified eligible participants, who were subsequently enrolled by appointments. Informed consent was obtained at the time of enrolment. Trained clinical psychologists, who were blinded to the objectives of the study, administered the psychological assessments in a quiet, dedicated room within the hospital. The duration of the evaluation procedure was 40 minutes. The data were collected anonymously.

Study Design

The participants were divided into two groups depending on the type of breast surgery (i.e. AS vs. RS) that they had undergone and the time that had elapsed since their surgery (i.e. ≤ 3 years vs. > 3 years). Descriptive statistics were computed to examine their characteristics. With regard to continuous variables (e.g. age, scores on the BREAST-Q scales), their medians and 25th to 75th percentiles (IQRs) were ascertained. The Wilcoxon-Mann-Whitney test was used to examine between-groups differences. A χ^2 analysis was performed to compare the categorical variables (age classes, geographical location, education, occupation, time after surgery) reported as counts and column percentages.

All statistical analyses were conducted using Stata (Release 15/IC, College Station, TX: Stata Corp LP). All the tests were two-tailed, and the statistical significance was defined as $p < 0.05$.

Results

A total of 44 patients participated in this study. As shown in Table 1, their median age was 40.5 years (IQR = 36.5–44.5). and the two age classes analysed (≤ 40 years and > 40 years) were equally represented. More than half of the participants ($n = 24$, 54.55%) were from Central Italy, and almost half of them ($n = 20$, 45.45%) were high school graduates. Most of them were employed ($n = 30$, 68.18%), and

they primarily worked as clerks ($n = 15, 34.09\%$). Further, 28 (63.64%) participants had undergone their surgery within the past three years. Median scores for BREAST-Q scales were as follows: 52.5 (IQR = 42–69.5) for satisfaction with breasts, 75 (IQR = 61–100) for satisfaction with outcome, 62.5 (IQR = 48.5–89) for psychological well-being, and 55 (IQR = 31–65) for sexual well-being. Comparing the characteristics of the study sample between AS and RS groups (Table 1), statistically significant differences emerged for BREAST-Q.

Specifically, the scores that the AS group obtained on the satisfaction with breasts, psychological well-being, and sexual well-being scales were higher than those obtained by the RS group (59.5 vs. 47, $p = 0.019$; 79 vs. 53, $p = 0.010$, and 65 vs. 41, $p = 0.005$, respectively).

Scores for BREAST-Q scales were compared on the basis of the time after surgery (\leq or > 3 years), also between groups AS and RS (Table 2). Best scores on Satisfaction with Breasts scale were found in the first three year after surgery (59.5 vs. 45.5, $p = 0.017$). This was especially true for the AS group (78.5 vs. 52.5, $p = 0.029$). Considering this timeframe, significant higher scores on satisfaction with breasts and sexual well-being scales were recorded in the group AS compared to the group RS (78.5 vs. 50, $p = 0.023$; 65 vs. 41, $p = 0.016$, respectively). Among those who had undergone breast surgery > 3 years earlier, those who belonged to the AS group obtained significantly higher psychological well-being scale scores than those who belonged to the RS group (73.5 vs. 56.5, $p = 0.036$).

Discussion And Conclusions

This study examined the psychological well-being of women who had undergone mammoplasty. more, we payed attention to the post-operative effect over time from the surgical intervention. Specially, we analysed the emotional trend to the changing in post-treatment comparing the reaction/adaptation to their new condition. We examined the variables satisfaction and well-being after breast surgery analysing psychological outcomes in 2 conditions of mammoplasty: aesthetic or disease-related.

With regard to aesthetic surgery, the findings of several studies have underscored the positive effects of AS on women. Lately, Randquist [17] highlighted the positive post-operative BREAST-Q measurement in AS, sustaining the satisfaction with breast remains consistently favourable in 70% for all respondents. Positive changes in the other BREAST-Q indices were also observed. However, our finding showed the mammoplasty in aesthetic surgery can affect partially well-being of women toward to negative feeling over the time. Women who had undergone AS ≤ 3 and > 3 years earlier did not differ in any of the indicators of emotional functioning. The only exception was their level of satisfaction with their breasts. We compared the two groups of women who differed in the time that had elapsed since their surgery. There was a significant group difference in the satisfaction with breasts scale scores among those who belonged to the AS group. it lower. in late time getting negative feeling. These unexpected findings (e.g. a decline in satisfaction among participants who had undergone AS) underscore the need to undertake in-depth investigations into the role of emotional regulation in the decision to opt for aesthetic surgery. Such efforts should be mindful of not only a lack of self-acceptance that results from the need to conform to

social norms and cultural standards but also the effectiveness of AS without integrated assistance. In this study, psychological and sexual well-being scores did not change over time. These findings support the efficacy of aesthetic AS.

We examined the impact of mammoplasty on the satisfaction levels and well-being of women who had undergone RS (after MRM). As expected, women who belonged to the RS group were less satisfied with their breasts than those who belonged to the AS group. However, this was true only among those who had undergone their surgery ≤ 3 years earlier. This finding suggests that these differences attenuate into non-significance over time. Over time, their levels of satisfaction with their breasts decline, and group differences attenuate into non-significance. This finding is not surprising because women opt for RS after receiving a cancer diagnosis and undergoing mastectomy. Therefore, their decision to seek measures to alter the appearance of their breasts is not undergirded by aesthetic preferences or psychological needs. In contrast, women opt for RS to address the ramifications of therapeutic surgeries (e.g. removal of cancer tissue). Oncological treatment has complex effects on the emotional functioning of patients [18–19]. In this regard, psychological interventions have been found to be effective in improving their post-treatment functioning [20].

In this study, we focused on psychological and sexual well-being. The time that had elapsed since their surgery appeared to be a predictor of negative adaptation to changes in their breasts. Their impact on women's body image and perceived sexuality persists over time. Thus, psychological fragility, which results from RS after MRM, may be a barrier that hinders their attempts to resume a normal life.

In conclusion, our findings underscore the need to provide psychological support to those who undergo AS and RS. With regard to AS, the provision of psychological support will ensure that patients do not experience psychological fragility after they undergo AS. Indeed, it is not a remedy for a negative body image or self-perception. However, AS can enhance psychological and sexual well-being, but it does not facilitate adaptation or enhance satisfaction. The post-operative emotional functioning (e.g. self-perceptions, body image) of women who undergo RS tends to be non-optimal. However, over time, they adapt to physical changes in their breasts. Therefore, to shorten this adaptation process and enhance their mental well-being, personalised psychological interventions should be provided. Tailored psychological support interventions that help patients accept the appearance of their breasts and foster positive body perceptions should be provided immediately after RS.

Declarations

Compliance with Ethical Standards

Funding

This study did not receive funding from any source.

Conflict of Interest

The authors declare no conflicts of interest.

Ethical Approval

Ethical approval to conduct this study was granted by the Institutional Review Board of the University of L'Aquila, Italy (Prot. N° 36032/2017), and S. Salvatore Hospital of L'Aquila (Italy) (i.e. the hospital from which the participants were recruited).

Informed Consent

All the participants provided informed consent prior to participation, and the study was conducted in accordance with the guidelines outlined in the Declaration of Helsinki.

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Tables

Table 1
Description of the participant characteristics of the study sample, comparing them between Augmentation (AS) and Reconstruction (RS) Surgery Groups.

	Total N = 44	Surgical Groups		p
		AS n 22 (50.00%)	RS n 22 (50.00%)	
Age (years): median (IQR)	40.5 (36.5–44.5)	39 (34–45)	42 (39–44)	0.158*
Age groups: n (%)				0.070**
≤ 40 years	22 (50.00)	14 (63.64)	8 (36.36)	
> 40 years	22 (50.00)	8 (36.36)	14 (63.64)	
Educational level: n (%)				0.828**
Middle school	9 (20.45)	4 (18.18)	5 (22.73)	
High school	20 (45.45)	11 (50.00)	9 (40.91)	
University	15 (34.10)	7 (31.82)	8 (36.36)	
Occupational status: n (%)				0.195**
Unemployed	14 (31.82)	5 (22.73)	9 (40.91)	
Employed	30 (68.18)	17 (77.27)	13 (59.09)	
Time since surgery: n (%)				1.000**
≤ 3 years	28 (63.64)	14 (63.64)	14 (63.64)	
> 3 years	16 (36.36)	8 (36.36)	8 (36.36)	
BREAST-Q scales				
Satisfaction with breasts: median (IQR)	52.5 (42–69.5)	59.5 (48–80)	47 (42–55)	0.019*
Satisfaction with outcomes: median (IQR)	75 (61–100)	88.5 (61–100)	71 (61–75)	0.216*
Psychological well-being: median (IQR)	62.5 (48.5–89)	79 (62–93)	53 (43–63)	0.010*
Sexual well-being: median (IQR)	55 (31–65)	65 (53–65)	41 (22–60)	0.005*

IQR = inter-quartile range

	Total	Surgical Groups		p
	N = 44	AS	RS	
		n	n	
		22 (50.00%)	22 (50.00%)	
*Wilcoxon-Mann-Whitney test				
** χ^2 test				
IQR = inter-quartile range				

Table 2

Breast-Q scores stratified for the time elapsed from surgery (≤ 3 years, > 3 years), comparing Augmentation (AS) and Reconstruction (RS) Surgery Groups.

	Time since surgery		p*
	≤ 3 years	> 3 years	
	n	n	
	28 (63.64%)	16 (36.36%)	
Satisfaction with breasts: median (IQR)	59.5 (45.5–78.5)	45.5 (39.5–55.5)	0.017
AS	78.5 (58–85)	52.5 (44–57.5)	0.029
RS	50 (45–61)	42 (33–46.5)	0.055
p*	0.023	0.141	
Satisfaction with outcomes: median (IQR)	75 (63–100)	65 (57–75)	0.081
AS	100 (65–100)	65 (57–100)	0.360
RS	75 (61–100)	64 (52–71)	0.109
p*	0.270	0.597	
Psychological well-being: median (IQR)	60 (48.5–92)	68.5 (47.5–79)	0.769
AS	83.5 (58–100)	73.5 (70–85.5)	0.515
RS	52.5 (48–60)	56.5 (38–65)	0.973
p*	0.088	0.036	
Sexual well-being: median (IQR)	55 (29–65)	55 (35.5–65)	0.819
AS	65 (53–65)	61.5 (51–65)	0.730
RS	41 (22–60)	42 (25–58.5)	0.810
p*	0.016	0.138	
*Wilcoxon-Mann-Whitney test			
IQR = inter-quartile range			