

Original Article

Patient Satisfaction with Breast Reconstruction After Mastectomy

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Abstract

Background: Patient satisfaction has great importance in breast reconstruction after mastectomy, which alters patient's body image negatively. The satisfaction level obtained from the results reported by patients who have undergone breast reconstruction is an important source of rapid feedback on the fulfillment of treatment-related expectations.

Aim: Therefore, in this study we aimed to evaluate patient satisfaction, which is the key criterion of the quality of health care, regarding how patient's expectations were met with breast reconstruction.

Material and methods: The universe of this descriptive study consisted of all patients who underwent breast reconstruction operation following mastectomy in a university hospital between 2010 and 2015 and the sample of the study consisted of 50 patients who underwent breast reconstruction operation following mastectomy at least six months ago, fulfilled the study criteria and consented to attend the survey. The survey was conducted using a data collecting form, which was developed in concordance with the relevant literature by the researcher and contained a total 32 questions, by the method of phone conversation with patients. Mann-Whitney U test and Kruskal-Wallis test was used for univariable analyses and Logistic Regression analysis was used for multivariable analyses.

Results: The mean age of the patients included in the survey was 46.45 ± 8.82 and mean BMI was 26.09 ± 3.08 . 74% of patients were married and 16% were smoking. While 86% of the patient included in the survey expressed that they were very satisfied and/or satisfied with the reconstructed breast, only 14% of them expressed their dissatisfaction.

Conclusion: It was found that the majority of patients expressed their satisfaction with the reconstructed breast, the average score of satisfaction of patients who smoked was lower, and those in the prosthesis group had the lowest satisfaction level.

Key words: Breast reconstruction, satisfaction, mastectomy

Introduction

Mastectomy is the most efficient and common method for the treatment of breast cancer patients; it decreases the rates of relapse and increases survival. Losing a breast due to mastectomy poses a threat to the woman's identity. Mastectomy, one of most severe trauma that a woman can encounter through a lifetime (Bulut & Demir, 2015), causes the woman to perceive herself as crippled, missing, sick and ugly and can damage the women's quality of life,

sexuality, plan and expectations for future by exposing her to problems including anxiety, depression, anger, guilt and fear (Bulut & Demir, 2015; Akyolcu, 2008; Kern, Zarth, Kimmig & Rezai, 2015; Gutzke & Olasa, 2010; Haekens, Enajat, Keymeulen & Van der Hulst, 2011). Breast reconstruction surgery aims to minimize these negative effects by restoring the breast, which is vitally important for woman's identity, and its popularity is gradually rising (Baltaci, Gulluoglu & Selimen, 2011). In 2008,

approximately 500.000 women underwent breast surgery (cosmetic and reconstruction after mastectomy) in the USA (Spector, Mayer, Knafel & Pusic, 2010). According to the statistics of American Society of Plastic Surgeons, 80.908 breast reconstructions were performed in 2000 and 79.458 were performed in 2008 (American Society of Plastic Surgeons, 2009). However, very few women undergo breast reconstruction in Turkey despite the fact that breast cancer is the most common type of malignancy in women (Noyan et al., 2006).

The primary goal of breast reconstruction is to improve the altered body image and quality of life of woman and meet her expectations about the look of the breast repaired after surgical intervention (Haekens, Enajat, Keymeulen & Van der Hulst, 2011; Noyan et al., 2006; Pusic et al., 2012). The patient's expectations, which have great importance in breast reconstruction, are about the perception of the repaired breast by the patient. Understanding patient expectations about breast reconstruction intervention gives an opinion about how the patient is going to perceive the repaired breast and is critical for providing optimal care (Fingeret, Nipomnick, Crosby & Reece, 2013).

The importance of reaching the highest level of satisfaction with the new breast look in breast reconstruction is indisputable. Therefore, the feedback of patients, who underwent breast reconstruction, about body image, quality of life and satisfaction is significant. The satisfaction level obtained from the results reported by patients who have undergone breast reconstruction is an important source of rapid feedback on the fulfillment of treatment-related expectations (Fingeret, Nipomnick, Crosby & Reece, 2013). Therefore, we aimed to determine the level of satisfaction of patients who underwent breast reconstruction after mastectomy.

Methodology

Sampling: The study was conducted in a descriptive manner in order to determine the level of satisfaction of patients who underwent breast reconstruction after mastectomy in the Plastic, Reconstructive and Aesthetic surgery clinic of a university hospital in Istanbul between 15 November and 30 November 2015. The universe of this descriptive study consisted of all

55 patients who underwent breast reconstruction operation following mastectomy in a university hospital between 2010 and 2015. The sample of the study consisted of 50 patients who underwent the reconstruction intervention at least six months ago, had no communication problems and completed cancer-related treatment. By including 50 patients with breast reconstruction, the majority of the universe was reached.

Questions of the study: In the study, these questions were aimed to be answered:

Are patients satisfied with breast reconstruction after mastectomy?

Are descriptive characteristics of patients effect the level of satisfaction?

What are the factors associated with the level of satisfaction?

Data collection instruments: Data collection was performed using a data collecting form developed by the researcher. The form had two parts. The first part consisted of 23 questions including descriptive characteristics such as patient's age, education status, body mass index (BMI), and data about the disease and surgical interventions such as the technique of surgical intervention, type of reconstruction, timing of reconstruction, radiotherapy etc. The second part consisted of 10 questions (satisfaction with the shape of breast, size of breast, look of breast, conformity to body, effect on comfort, weight, symmetry, surgical scars, sexual life and sensation) generated in order to determine the level of satisfaction with breast reconstruction in the light of literature (Haekens, Enajat, Keymeulen & Van der Hulst RR., 2011; Fingeret, Nipomnick, Crosby & Reece, 2013).

Study development: After the approval of the ethics committee and institution, the contact information of the patients with breast reconstruction was obtained. Patients who underwent breast reconstruction after mastectomy were reached by phone. The researcher explained the aim of the study and asked the patients if they volunteered to participate in the study. After obtaining their verbal consent, first, questions of the personal information form was asked and then questions for determining the level of satisfaction were asked. Phone conversation with each patients lasted for approximately 25 to 30 minutes.

Ethical consideration: Permissions from Clinical Studies Ethics Committee of Istanbul University Cerrahpaşa Medical Faculty and Dean's Office were obtained prior to the start of the study (83045809/604.01/02). The aim and content of the study was explained to the participating patients in detail. The researchers clarified that the subjects were free to participate in the study, and took elaborate care for including volunteer and willing individuals because the answers needed to be given voluntarily.

Statistical analysis: SPSS (Statistical Package for Social Sciences) for Windows version 17.0 software was used for statistical analyses. Descriptive statistics were presented as mean, median, number and percentage, whenever appropriate. Mann-Whitney U test and Kruskal-Wallis test was used for univariable analyses and Logistic Regression analysis was used for multivariable analyses. Significance was set at $p < 0.05$ with 95% confidence interval.

Results

The mean age of the patients included in the survey was 46.45 ± 8.82 . The mean BMI was 26.09 ± 3.08 . Seventy-four percent ($n=37$) of patients were married. Family history of 24% ($n=12$) was positive for breast cancer. Sixteen percent ($n=42$) were smoking and 72% ($n=36$) had no concomitant disease. Eight percent ($n=4$) of patients underwent simple mastectomy, 42% ($n=21$) underwent modified radical mastectomy and 50% ($n=25$) underwent skin-sparing mastectomy. Reconstruction surgery was performed at the same session with mastectomy in 28% ($n=14$) of patients while 72% ($n=36$) underwent reconstruction in a later session. Fifty-eight percent ($n=29$) were reconstructed using implants, 26% ($n=13$) with autologous tissue and 16% ($n=8$) with both implant and autologous tissue. Sixty-four percent ($n=32$) of patients received chemotherapy and 44% ($n=22$) of patients received radiation therapy. Sixteen percent ($n=8$) of patients felt pain when touching the breast after reconstruction and mean pain score was 5.00 ± 0.75 (range: 4-6).

Table 1. Level of satisfaction with reconstruction

Statements	Level of satisfaction								Mean	Sd
	Very satisfied		Satisfied		Dissatisfied		Very dissatisfied			
	n	%	n	%	n	%	n	%		
Are you satisfied with the shape of your breast?	24	48.0	18	36.0	4	8.0	4	8.0	2.24	0.92
Are you satisfied with the size of your breast?	28	56.0	16	32.0	6	12.0	0	0.0	2.44	0.70
Are you satisfied with the way your breast fits your body?	29	58.0	15	30.0	5	10.0	1	2.0	2.44	0.81
Are you satisfied with the comfort of prosthetic breast when you move?	31	62.0	11	22.0	7	14.0	1	2.0	2.44	0.81
Are you satisfied with the look of your breast in clothes?	36	72.0	12	24.0	2	4.0	0	0.0	2.60	0.55
Are you satisfied with the weight of your breast?	37	74.0	11	22.0	2	4.0	0	0.0	2.70	0.54

Are you satisfied with the symmetry of your breast?	12	24.0	30	60.0	7	14.0	1	2.0	2.06	0.68
Are you satisfied with the way your surgical scar looks?	2	4.0	35	70.0	11	22.0	2	4.0	1.74	0.59
Are you satisfied with your breast in your sexual life? (n=38)	9	23.7	24	63.2	5	10.0	0	0.0	2.11	0.61
Are you satisfied with the sensation of your breast?	17	34.0	22	44.0	11	22.0	0	0.0	2.12	0.75

Cronbach Alpha (α)=0.912

Graph : Distribution of satisfaction levels

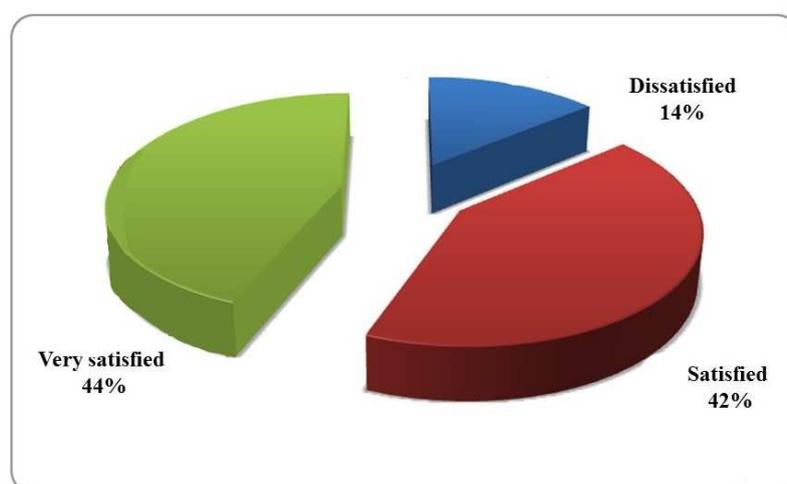


Table 2. Level of satisfaction according to patients' descriptive characteristics

Characteristics	Mean	Sd	Z/KW	P
Age			-0.030 ^a	0.976
<50	22.66	5.16		
≥50	22.11	5.74		
Marital status			-1.912 ^a	0.056
Married	23.22	5.21		
Single	20.31	5.23		
Education			1.631 ^b	0.202
Primary school	24.07	4.37		
High school	22.39	5.20		
College	20.58	6.36		
Family history			-0.639 ^a	0.523
Positive	21.75	5.63		
Negative	22.68	5.28		

Smoking			-2.659 ^a	0.008*
Yes	18.00	5.83		
No	23.31	4.84		
BMI classification			-0.824 ^a	0.410
<25	23.79	3.65		
≥25	21.65	6.04		
BMI	r=-0.158 ^c		p=0.273	

BMI: Body Mass Index *= $p < 0.05$, a=Mann-Whitney U test, b=Kruskal-Wallis Test, c=Spearman correlation test

Table 3. Mean satisfaction scores according to surgical and systemic treatment and type and timing of surgical treatment

	Mean	Sd	Z/KW	P
Characteristics				
Surgical treatment			-0.634 ^a	0.526
MRM+Simple mastectomy	22.60	5.66		
Skin-sparing mastectomy	22.32	5.07		
Timing of reconstruction			-1.075 ^a	0.282
Same session	21.29	5.88		
Later session	22.92	5.11		
Type of reconstruction			6.804 ^b	0.033*
Implant	20.72	5.96		
Autologous tissue	24.54	3.76		
Both	25.38	1.41		
Chemotherapy			-1.330 ^a	0.183
Yes	23.19	5.08		
No	21.17	5.65		
Radiation therapy			-0.668 ^a	0.504
Yes	22.86	5.51		
No	22.14	5.25		
Pain when touching the breast			-0.532 ^a	0.595
Yes	21.88	5.89		
No	22.57	5.28		

MRM: Modified Radical Mastectomy

*= $p < 0.05$, a=Mann-Whitney U test, b=Kruskal-Wallis Test

Table 4: Factors associated with high levels of satisfaction

Factors	P	OR	95% C.I.
Model- Married vs. Single 2	0,048	5,217	1,015-26,821
Autologous / Autologous+Implant vs. Only Implant	0,005	6,802	1,766-26,200
Constant	0,167	0,577	-

Model 2 X²:12,266; p:0.002, Model method: Forward Stepwise; OR: Odds Ratio

Cronbach Alpha value of items generated to determine the level of satisfaction with the new breast was calculated to be 0.912. Patients were very satisfied with the weight and look of the breast after reconstruction but not satisfied with the surgical scar (Table 1). Forty-four percent (n=22) of patients were very satisfied, 42% (n=21) were satisfied and 14% (n=14) were dissatisfied after reconstruction. Mean satisfaction score was 22.46±5.2 (Graph).

The level of satisfaction of patients had a statistically significant difference only for the status of smoking. The mean satisfaction score of patients who smoked (18.00±5.83) was significantly lower than the mean satisfaction score of patients who did not smoke (23.31±4.84) (p<0.05) (Table 2).

When the level of satisfaction was evaluated according to the type of reconstruction, it was revealed that patients in the implant group had significantly lower level of satisfaction than other groups (p<0.05) (Table 3).

Independent factors that affect high level of satisfaction after reconstruction were found to be marital status (OR: 5.217 p:0.048) and type of reconstruction (OR:6.802 p:0.005) (Table 4).

Discussion

Studies conducted with women who underwent breast reconstruction after mastectomy revealed that the majority was satisfied with the newly-formed breast (Haekens, Enajat, Keymeulen & Van der Hulst RR., 2011; Ditsch, 2013; Edsander-Nord, Brandberg, Wickman, 2001; Andrade, Baxter & Semple, 2011; Zhong, 2012; Yueh, 2010; Shaikh-Naidu, 2004). Similar to these studies, the level of satisfaction was high in

our study as well. However, Ditsch et al (2013) found a statistically significant difference between the statement that questions the appearance of surgical scar after reconstruction and revealed that the level of satisfaction with the appearance of surgical scar affected general level of satisfaction. In other words, the answer to the question whether the patient is satisfied with the surgical scar decreased the general level of satisfaction (Ditsch et al., 2013). The contribution of surgical scar appearance to the level of satisfaction was low in the present study, as well.

The existing data in the literature about the association between age and satisfaction is contradictory. While certain studies indicate that the level of satisfaction with the reconstructed breast increases with age (Andrade, Baxter & Semple, 2011; Shaikh-Naidu, 2004). Alderman et al (2000) found no significant association between age and level of satisfaction. In our study, we could not find a significant association between age and level of satisfaction either (Alderman et al., 2000).

There are studies in the literature showing that the level of satisfaction in smoking women is lower (Kern, Zarth, Kimmig & Rezai, 2015; Fischer, Nelson, Serletti & Wu, 2013) and the rate of complications after breast reconstruction increase in smoking patients (Chang, Reece & Wang B, 2000; Sadok et al. 2019; Thorarinsson, Frojd & Kolby L, 2017; Selber, Kurichi & Vega, 2006; Sousa et al., 2018). Concurrently, mean satisfaction score of smoking patients was significantly lower than nonsmoking patients in the present study.

Kern et al (2015) and Fischer et al (2013) report that obese patients have lower rates of satisfaction due to high risk of complications, higher breast volume and greater ptosis. However, we found no significant difference between mean satisfaction score and BMI (Kern, Zarth, Kimmig & Rezai, 2015; Fischer, Nelson, Serletti & Wu, 2013).

Studies have shown that skin-sparing mastectomy is a safe procedure with well aesthetic results that ensures high psychological and physical well-being (van Verschuer et al., 2016; Hurley, McArdle, Joyce & O'Broin, 2018). This study, however, was not able to exhibit a statistical association between the type of mastectomy and level of satisfaction.

Reports about the impact of timing of reconstruction on satisfaction with the new breast and conflicting; studies in the literature indicate that both simultaneous and late reconstruction have psychological benefits. While some found that simultaneous reconstruction yield higher satisfaction and well-being than later reconstruction (Yucel & Kurul, 2003; Begum, Grunfeld, Ho-Asjoe & Farhadi 2011; Schain, Wellisch, Pasnau & Landsverk, 1985; Al-Ghazal, Sully, Fallowfield & Blamey, 2000). We couldn't find a significant difference in satisfaction levels in terms of the timing of reconstruction.

The physical behavior of breast reconstructed with autologous tissue is similar to natural breast. Fading of scar tissue formed after surgical intervention and softening of the tissues used yields to better results with time. Also, autologous tissues respond to weight gains and losses like the normal breast and therefore it is reported that no asymmetry occurs between two breasts after reconstruction in case of weight gain or loss (Gutzke & Olasa, 2010; Yucel & Kurul, 2003). Many studies report higher level of satisfaction with breast reconstructions performed using autologous tissues (Yueh, 2010; Shaikh-Naidu, 2004; Alderman et al., 2000; Moberg et al., 2018; Sgarzani et al., 2015; Cederna et al., 1995; Durry et al., 2019). In our study, we found a significant difference between the type of reconstruction and the level of satisfaction ($p < 0.05$). Satisfaction level was lower in reconstruction with implants and higher in reconstruction with autologous tissue.

In conclusion, we found that women participating in the study were generally satisfied with the breast reconstruction. Independent factors that affected the level of satisfaction were marital status and type of reconstruction. Postmastectomy breast reconstruction is surgical intervention that improves the body image and quality of life of women. Healthcare workers should be aware of the variables that affect women's satisfaction with life in order to plan and carry out appropriate nursing care. Therefore, providing consultation to every women undergoing mastectomy about breast reconstruction prior to surgery is important in terms of both psychosocial adaptation and body image of women with breast cancer.

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