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Determination of The Relationship Between The Tendency Towards Breast Reconstruction After Mastectomy and The Quality of Sexual Life and Social Appearance Anxiety

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ABSTRACT

This study aimed to determine the relationship between the tendency among women to undergo breast reconstruction after mastectomy and the quality of sexual life and social appearance anxiety.
This descriptive and cross-sectional study was conducted in 138 patients who underwent mastectomy at the general surgery and oncology department at Van Yüzüncü Yıl University Dursun Odabaşı Medical Centebetween May 2019 and July 2020. Data were collected using the "personal information form," the "tendency to breast reconstruction after mastectomy scale (TBRAMS)," the "sexual quality of life-female (SQOL-F) scale," and the "social appearance anxiety scale (SAAS)."
The mean scores on the TBRAMS, SQOL-F scale, and SAAS were 27.19 ± 2.68, 64.48 ± 9.26, and 46.10 ± 12.22, respectively.
The results showed that the mean TBRAMS, SQOL-F, and SAAS scores of the patients were at a moderate level, and a negative relationship was observed between the mean TBRAMS score and the SQOL-F scale and SAAS scores.

Keywords: breast cancer, breast reconstruction, mastectomy, sexual quality of life, social appearance anxiety

What is already known about this topic?

- Regardless of the stage of breast cancer, reconstructing the breast after mastectomy is a surgical option that does not reduce the chances of survival of the patient; it improves the self-esteem and body image and has a positive effect on the sexual functions and quality of life.

What does this article add?

- This study showed that the social appearance anxiety decreased with an increase in the tendency towards breast reconstruction among women who have undergone mastectomy.
- As the tendency towards breast reconstruction increases, the quality of sexual life decreases,
- Women had a moderate tendency towards breast reconstruction.

Introduction

Breast cancer is the most common type of cancer worldwide, and approximately 1.7 million women are diagnosed with breast cancer every year. One in 8 women has a lifetime risk of developing breast cancer (1). Further, breast cancer constitutes 18% of cancers seen among women and accounts for 9% of deaths due to cancer worldwide (2). Cancer is a chronic and fatal disease that affects the mental and psychosocial well-being of an individual and affects aspects such as self-respect, body perception, quality of life, sexual life, and social life (3,4,5). Breast cancer in particular, negatively affects these factors in women.

Surgery is the primary treatment for patients with breast cancer. Mastectomy, which is the partial or complete removal of the breast, is one of the various surgical options for breast cancer (6). Most patients who undergo mastectomy experience

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physical and mental effects and negative psychosocial effects such as a feeling of guilt, anger, hopelessness, uncertainty about the future, suicidal thoughts, embarrassment due to the lack of breasts, depression, anxiety, isolation, fear of being distanced by their husband, problems caused by breast prosthesis, and fear of being distanced by family and friends (7,8). In particular, mastectomy negatively affects self-esteem, sexuality, and body image in women (9).

The breast is an important part of a woman's sexuality and body image, and thus, removal of breasts can hamper the sexual quality of life and increase the social appearance anxiety of women. Social appearance anxiety is a result of negative evaluations of body image and appearance of women by the society (10,11,12). Mastectomy affects the physical appearance of women and thus can cause psychological problems. Therefore, the reconstruction of the breast plays an important role in addressing the problems experienced by women who have lost their breasts because of mastectomy (13).

Regardless of the stage of breast cancer, reconstructing the breast after mastectomy is a surgical option that does not reduce the chances of survival of the patient; it improves the self-esteem and body image and has a positive effect on the sexual functions and quality of life (14,15,16). Therefore, this study aimed to determine the tendency among women to undergo breast reconstruction after mastectomy, and the relationship between breast reconstruction and sexual quality of life and social appearance anxiety.

Materials and Methods

Study Type: This was a descriptive and cross-sectional study.

Study Population and Sample: The study was conducted from May 2019 to July 2020 in women who were registered at Van Yüzüncü Yıl University Dursun Odabaş Medical Center General Surgery and Oncology department for mastectomy. The study population consisted of women who had undergone mastectomy and/or were examined after mastectomy at the general surgery department, outpatient clinic, and oncology unit of the Yüzüncü Yıl University Dursun Odabaş Medical Center. The women were called, and the women who agreed to participate in the study were included in the study group (N = 138).

Inclusion Criteria

- Women aged 18–65 years (the sexual quality of life scale was reported to be valid and safe for this age group) (17).
- Conscious and without any mental or cognitive impairment
- Provided voluntary agreement to communicate, cooperate, and participate in the study
- Underwent mastectomy ≤6 months ago (within the framework of expert opinions received from oncologists involved in the development of the original scale, it was concluded that it would be more appropriate to apply this scale 6 months after surgery) (18).

Data Collection: The data were collected using the "personal information form," the "tendency to breast reconstruction after mastectomy scale (TBRAMS)", the "sexual quality of life-female (SQOL-F) scale," and the "social appearance anxiety scale (SAAS)." The administration of the questionnaires took 15–10 min.

The personal information form consists of 18 questions about the demographic and disease characteristics of the patients.

The TBRAMS was developed by Salehi et al (18) in 2012 in the Persian language to determine the tendency towards breast reconstruction among women who underwent mastectomy, which was later translated and published in English. The Turkish validity and reliability of this scale was established by Günaydınlı (19) in 2018. The TBRAMS consists of 21 items; it has 4 subdimensions, namely, "main factors," "secondary factors," "minor barriers," and "factors causing fear." The total score on the TBRAMS was a sum of the scores obtained on each subdimension. The lowest and the highest possible scores on the scale were 21 and 42, respectively. A higher score indicates a greater tendency towards breast reconstruction. The Cronbach's alpha coefficient was determined as 0.84 in the study by Günaydınlı.[19] In this study, the Cronbach's alpha coefficient was 0.61.

The *SQOL-F scale* was developed by Symonds et al in 2005 (20). The Turkish validity and reliability of this scale was established by Tuğut and Gölbaşı in 2010 (17). This is a 6-point Likert-type scale that consists of 18 items. The scale can be administered to women aged 18–65 years. A high score indicates a better SQOL. Tuğut and Gölbaşı (17) reported that the Cronbach's alpha was 0.83. In this study, the Cronbach's alpha value was 0.64.

The *SAAS* was developed by Hart et al in 2008 (21) to assess the cognitive, behavioral, and emotional concerns of people about their appearance. The Turkish validity and reliability of this scale was established by Doğan (11). This is a 5-point Likert-type scale that consists of 16 items. The SAAS score ranges from 16 to 80, and a high score indicates an increase in the social appearance anxiety. The Cronbach's alpha coefficient was reported as 0.93 by Doğan (11). In this study, the Cronbach's alpha value was 0.94.

Statistical Analysis: Statistical Package for Social Science (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.) package program was used to evaluate the data. Number, mean, percentage distributions, standard deviation, variance analysis and Pearson correlation because the data were normally distributed analysis were used in the statistical evaluation of the data. The reliability of the scales was tested with Cronbach alpha analysis. Considering the number of patients who underwent breast cancer-related surgery in previous years, 129 patients were planned to be included in the study in line with the 95% confidence interval according to the power analysis, and 138 patients who met the research criteria and agreed to participate in the study were formed.

Ethical Aspects of the Study: The study was conducted in accordance with the principles of the Declaration of Helsinki. Approval was obtained from Erzurum Atatürk University Faculty of Medicine thics Committee (22.04.2019/199). Information was given to the participating women about the purpose of the study, the method, and the time they were asked to allocate for the study. Verbal consent of the participants was obtained, stating that the data collected during the study will only be used within the scope of the study and that confidentiality will be strictly ensured.

Results

The distribution of the descriptive characteristics of the women is shown in Table 1. Most women in the study were illiterate (41.4%), unemployed (87.0%), had an arranged marriage (83.3%), had a spouse that was literate (35.5%) and employed (80.4%), had a moderate income level (61.6%), were living within a nuclear family (79.0%), were living in a city (58.0%), were non-smokers (86.2%), had a moderate health level (41.3%), were satisfied with the breast surgery (44.9%), and did not have any complications (97.1%).

The mean age of the women was 48.06 ± 8.18 years; the mean age of their spouses was 50.91 ± 8.39 years. The mean number of children of the women in the study was 3.89 ± 1.96; their mean age at diagnosis was 43.21 ± 7.92 years, and the mean time passed since diagnosis was 15.24 ± 7.38 years.

The mean scores of women on the different subdimensions of the TBRAMS were as follows: main factors, 13.55 ± 1.98; secondary factors, 4.69 ± 0.76; minor barriers, 5.65 ± 0.74, and factors causing fear, 3.28 ± 0.62; the total score on the TBRAMS was 27.19 ± 2.68. The total scores on the SQOL-F scale and the SAAS were 64.48 ± 9.26 and 46.10 ± 12.22, respectively (Table 2).

A statistically negative correlation was observed between the TBRAMS main factors subdimension score and the total mean with the SQOL-F scale score and between the secondary factors subdimension score and the total mean with SAAS score (Table 3).

Discussion

The results of the relationship between the tendency towards breast reconstruction among women who underwent mastectomy and sexual quality of life and social appearance anxiety obtained in this study were discussed in line with those obtained in previous studies.

The mean total TBRAMS score showed that women had a moderate tendency towards breast reconstruction. Moderate scores were reported for the subdimensions of main factors, secondary factors, and minor barriers, and low scores were reported for factors causing fear. Günaydınlı's (19) reported a moderate total score of 29.63 ± 4.64 on the TBRAMS, a high score of 15.52 ± 3.20 on the main factors subdimension, a moderate score of 5.14 ± 1.15 on the secondary factors subdimension, and low scores of 5.50 ± 1.23 and 3.47 ± 0.95 on the subdimensions of minor barriers and factors causing fear, respectively. The mean scores reported in the study by Günaydınlı were similar to those reported in this study. Shandiz et al (18) and Awan (22), respectively, reported that 57.4% and 41.6% of the women showed a tendency towards breast reconstruction after mastectomy. The breast is a very important organ for women in many regards, especially in terms of sexuality and body perception. The loss of such an important organ can have many negative effects on women. Breast reconstruction surgery in women who have undergone mastectomy helps in improving their quality of life. A moderate mean score on the TBRAMS

Table 1: Distribution of the Demographic Characteristics of The Women

	Mean	SD	Min–Max
Age, years	48.06	8.18	28–65
Age of the spouse, years	50.91	8.39	28–68
Number of children, n	3.89	1.96	0–10
Age at diagnosis, years	43.21	7.92	23–61
Time passed since diagnosis, years	15.24	7.38	6–40

Characteristics		n	%
Educational level	Illiterate	57	41.4
	Literate	34	24.6
	Primary-middle school	18	13.0
	High school	18	13.0
	Bachelor's and higher	11	8.0
Employment status	Unemployed	120	87.0
	Employed	18	13.0
Type of marriage	Arranged	115	83.3
	By meeting	23	16.7
Educational level of the spouse	Literate	49	35.5
	Primary school	21	15.2
	Middle school	21	15.2
	High school	28	20.3
	Bachelor's and higher	19	13.8
Employment status of spouse	Employed	111	80.4
	Unemployed	27	19.6
Income level	Low	39	28.3
	Moderate	85	61.6
	High	14	10.1
Family type	Nuclear	109	79.0
	Extended	29	21.0
Place of permanent residence	City	80	58.0
	District-small town	39	28.3
	Village	19	13.8
Smoker	Yes	19	13.8
	No	119	86.2
Health evaluation	Bad	21	15.2
	Moderate	57	41.3
	Good	50	36.3
	Very good	10	7.2
Degree of satisfaction with the surgery	I am very satisfied	37	26.9
	I am satisfied	62	44.9
	I am undecided	32	23.2
	I am not that satisfied	7	5.0
Development of complications	Yes	4	2.9
	No	134	97.1

n:Number of Patients, SD: Standart Deviation, Min: Minimum, Max :Maximum

Table 2: The minimum–maximum and mean scores on the Tendency to Breast Reconstruction after Mastectomy Scale, Sexual Quality of Life-Female scale, and Social Appearance Anxiety Scale

Scales		Mean	SD	Min–Max
TBRAMS	Main Factors	13.55	1.98	11-19
	Secondary Factors	4.69	0.76	3-6
	Minor Barriers	5.65	0.74	4-8
	Factors Causing Fear	3.28	0.62	3-6
	Total	27.19	2.68	22-33
SQOL-F		64.48	9.26	42.22-91.11
SAAS		46.10	12.22	18-74

SD: Standart Deviation, Min: Minimum, Max: Maximum, TBRAMS: Tendency to Breast Reconstruction After Mastectomy Scale, SQOL-F**:** Sexual Quality of Life-Female Scale, SAAS: Social Appearance Anxiety Scale

Table 3: Relationship Between The Women's Mean TBRAMS, SQOL-F Scale, and SAAS Scores

Scales			SQOL-F	SAAS
TBRAMS	Main Factors	r	-.260**	-.529**
		p	0.002	0.000
	Secondary Factors	r	-.143	-.522**
		p	0.094	0.000
	Minor Barriers	r	.014	.134
		p	0.874	0.117
	Factors Causing Fear	r	.050	.088
		p	0.563	0.304
	Total	r	-.218*	-.482**
		p	0.010	0.000
SAAS		r	.344**	
		p	0.000	

*p < 0.05, **p < 0.01

TBRAMS: Tendency to Breast Reconstruction After Mastectomy Scale, SQOL-F: Sexual Quality of Life-Female Scale, SAAS: Social Appearance Anxiety Scale, p: İstatistiksel anlamlılık, r: Korelasyon katsayısı, p < 0.05 is defined as statistically significant, p < 0.01 is defined as highly statistically significant

observed in this study may be attributed to the family structure, socioeconomic status, place of residence, employment status, insufficient information provided to women about reconstruction surgery, lack of complete understanding of the procedure by women because of their low educational level, or a thought that elimination of cancer is more important than breast reconstruction.

Additionally, the women in this study refrained from breast reconstruction surgery because of high costs, difficulty to reach the hospital, fear of recurrence, complications, and the need for repeated surgery. Ng et al (23) reported results similar to those observed in this study; Ng et al. reported that Singaporean women were more concerned about the effects of medical treatments on the diagnosis of cancer and its progression and recurrence, psychosocial problems, and the high cost of reconstruction than protecting the breast.

The mean SQOL-F scale scores indicated that the women had a moderate sexual quality of life. In the study entitled "Examination of body liking and sexuality in women who underwent mastectomy in the pre- and post-menopausal period," Özdem (24) reported a medium mean SQOL-F score of 64 ± 19.10 in women who underwent mastectomy. In the study entitled "Effect of mastectomy on sexual quality of life and marital adjustment in women with breast cancer," Telli (25) reported a medium mean SQOL-F score of 43.3 ± 29.0 in women who underwent mastectomy. In the study entitled "Evaluation of the effects of mastectomy on self-esteem and sexual life," Topuz (26) reported a moderate SQOL-F mean score of 63.380 ± 21.432. The results of this study are similar to

those reported in previous studies. The breast is an organ that represents femininity and attractiveness and plays an important role during sexual intercourse and sexual sensitivity. Factors such as how women perceive their breasts, their communication with their spouses and family, and social structure, education, and state of consciousness affect their perceptions.

Previous studies reported that mastectomy had a negative effect on the sexual life of women who underwent different surgical procedures because of breast cancer (27). Öztürk and Akyolcu (15) reported that in 125 patients with breast cancer, total mastectomy caused sexual problems. Ertem et al (28) reported that women did not think about sexuality, and their desire to engage in sexual intercourse decreased after they were diagnosed with cancer. Ljungman et al (29) reported that 28% of women with breast cancer experienced sexual problems. Previous studies reported sexual dysfunction in 68% of women who were undergoing treatment for breast cancer, which was 45% more than the incidence in women who had completed treatment (30). Çidem (31) reported negative effects on the sexual life of women with breast cancer. Previous studies reported a considerable negative effect on body perception and sexual experiences of women diagnosed with breast cancer, and women who underwent a mastectomy had a significantly decreased frequency of sexual intercourse, and that the sexual desire decreased in women after the mastectomy (32,33,34). Leila et al (35) reported that 80.9% of women with breast cancer experienced decreased sexual attraction and that 42.5% of women had dyspareunia. A study conducted to investigate the perception of sexuality among women who underwent mastectomy showed that the lack of sexual interest was higher in women who underwent mastectomy (36) Alamış (37) reported that the frequency of sexual intercourse decreased by 90.9% in women with breast cancer after surgery, and their sexual satisfaction decreased by 93.9%. Previous studies indicate that breast cancer and mastectomy significantly affect the sex life of women. Breast cancer has a negative effect on the sexual life of a woman, which in turn decreases her quality of life. Therefore, the loss of the breast negatively affects the sexuality of a woman. In this study, 87% of the women were housewives and unemployed. Typically, women are in charge of taking care of the children. If a woman has more than one child, she may not be able to give sufficient time and attention to both herself and her spouse, because she needs to care for more people. In such a situation, if a woman must undergo surgery for the removal of the breast, which is an extremely important organ for women, it can severely affect the quality of sexual life of women.

The mean SAAS score in this study was at a moderate level. Özkaraman et al (38) reported that women with breast cancer had a SAAS score of 34.30 ± 9.35, which corresponds to a moderate level. Işık (39) reported that in women with gynecological cancers, the mean SAAS score was 40.47 ± 14.99, which also corresponds to a moderate level. In the study by Mete (40) examining the effect of breast reconstruction after mastectomy on self-esteem and social appearance anxiety, the mean SAAS score was 30.91 ± 9.86. Many studies have been performed on the body image of women who underwent mastectomy. Koçan and Gürsoy (41) reported that compared with women who received a breast-conserving treatment, those who underwent mastectomy had a more negative body image. Somogyi et al (42) reported that mastectomy negatively affects body perception and self-esteem. Ahmad et al (43) reported that in women with breast cancer, the discomfort associated with the changes in the body of the women was one of the most striking problems. Jabłoński et al (44) reported that compared with women who received breast-conserving surgery, those who underwent mastectomy experienced more problems in terms of clothing, appearance, and being naked around their partner. Huang and Chagpar (14) reported that women who underwent mastectomy had a low body image; further, the women felt less attractive, did not like their appearance, felt incomplete, had limited hobbies, and avoided communicating with other people. Trusson et al (45) showed that women whose breasts had been removed avoided social environments because they felt embarrassed and were afraid that people would notice the lack of breasts. Denizgil and Sönmez (27) reported a significantly different body perception score between women who underwent mastectomy and those who had breast-conservation surgery. Öztürk and Akyolcu (15) compared the various types of surgeries for breast cancer and showed that women who underwent mastectomy had a negative body image and self-esteem. Body image is the feelings, thoughts, and perceptions an individual has about her/his own body. Social appearance anxiety can be evaluated as a result of negative body image related to the body and appearance of an individual (11). Surgery is one of the methods for the treatment of breast cancer, and surgical removal of a part or the entire breast augments the emotional problems of women.

Removal of the breast may cause serious problems in women for many years such as deterioration of body perception, change in female appearance, and loss of sexuality, and attractiveness. The physical appearance of the woman changes after surgical treatment, and this change may be perceived as a threat to self-esteem (46). The appearance of women changes radically in women who undergo mastectomy. In particular, in societies where the breast is seen as a symbol of femininity and sexuality, even the fear of losing the breast poses a considerable threat to the self-esteem and body image.

A negative correlation was observed between the total TBRAMS score and the total SQOL-F scale and SAAS scores. In other words, as the tendency towards breast reconstruction increases, the quality of sexual life decreases, and social appearance anxiety decreases. Or it would be correct to make the opposite assessment for this study. Removal of the breast is the primary reason for the poor quality of sexual life in women who undergo mastectomy. Since the quality of sexual life of women is low, they may be more prone to reconstruction. The reconstruction of the breast can give women sexual satisfaction, and this can lead to an increase in the quality of sexual life of women. Results of previous studies show that the breast is an indispensable organ for women representing attraction. In fact, many studies reported that women whose breasts were removed experienced serious problems in their sexual lives. We found that the breast is an indispensable part of motherhood and sexuality for women in the region where this study was conducted. In short, it can be concluded that breast reconstruction will positively contribute to the sexual life of women who have undergone mastectomy.

Results of this study showed that the social appearance anxiety decreased with an increase in the tendency towards breast reconstruction among women who have undergone mastectomy. The increase in social appearance anxiety shows that women had a negative body image. Therefore, the tendency towards breast reconstruction is expected to be higher in these women. Reconstruction of the breast will enable women to wear the clothes of their choice, be more comfortable in social situations, and be more confident about their body.

Conclusion and Recommendations: The mean TBRAMS, SQOL-F scale, and SAAS scores were at a moderate level, and a negative relationship was observed between the TBRAMS score and the SQOL-F scale and SAAS scores. Additional studies examining the effects of breast reconstruction on sexual quality of life and social appearance anxiety should be performed to provide information about breast reconstruction and to support women who have undergone a mastectomy, to provide society-oriented trainings, considering the educational levels, and to ensure an increase in the tendency towards breast reconstruction.

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Authors' Contributions: TŞ and ZKÖ were responsible for the conception and design of the study. TŞ and ZKÖ were responsible for acquisition and analysis of data; furthermore, ZKÖ was in charge of statistical analysis. TŞ and ZKÖ drafted the manuscript and approved the final version. All authors read and approved the final manuscript.

Implications For Practice: Regardless of the stage of breast cancer, reconstructing the breast after mastectomy is a surgical option that does not reduce the chances of survival of the patient; it improves the self-esteem and body image and has a positive effect on the sexual functions and quality of life. Therefore, this study important to determine the tendency among women to undergo breast reconstruction after mastectomy, and the relationship between breast reconstruction and sexual quality of life and social appearance anxiety.

Data Availability Statement: The authors confirm that the data supporting the findings of this study are available within the article its supplementary materials.

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