



## Occurrence of sexual dysfunctions in mastectomized females with or without breast reconstruction

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**ABSTRACT.** Breast cancer ranks second as the most common in women. Surgery, the usual initial treatment of the disease, triggers important changes in the patient's self-image and interferes in sexuality. Breast reconstruction usually improves life quality and has a positive psychological effect. It was developed a current transversal, observational qualitative research that comprised data collection at the Mastology Service of a hospital in the central region of the state of Rio Grande do Sul, Brazil, aiming to compare the prevalence of sexual dysfunctions in mastectomized females with or without breast reconstruction. The sample consisted of 28 females, aged between 36 and 73 years ( $53.77 \pm 10.77$ ), of whom 17 did not undergo breast reconstruction (G1) and 11 had breast reconstruction (G2). The evaluation card adapted by Etienne & Waitman and Female Sexual Function Index (FSFI) were applied. Descriptive statistics of the evaluated variables, coupled to the normality test of Shapiro-Wilk were undertaken; correlation test of Pearson and correlation test of Spearman were employed respectively for co-relationships of symmetrical and asymmetrical variables. G2 has sexual dysfunction in all domains, whereas G1, although with total score above cut-off point, reveals predictive rates for sexual dysfunction, except in the domain satisfaction. The latter, coupled to libido, showed statistically significant difference between the two groups.

**Keywords:** breast neoplasm, Surgical Oncology, sexuality.

## Incidência de disfunções sexuais em mulheres mastectomizadas com ou sem reconstrução mamária

**RESUMO.** O câncer de mama é o segundo tipo de neoplasia mais prevalente entre as mulheres, sendo o procedimento cirúrgico o mais utilizado no tratamento inicial dessa enfermidade, o qual pode acarretar alterações na autoimagem, podendo interferir na sexualidade. A reconstrução mamária usualmente proporciona melhora na qualidade de vida e no âmbito psicológico. Foi desenvolvida uma pesquisa do tipo transversal, observacional, de caráter quantitativo. A coleta de dados foi realizada no Serviço de Mastologia de um hospital na região Central do Rio Grande do Sul com o objetivo de comparar a prevalência de disfunções sexuais em mulheres mastectomizadas com ou sem reconstrução mamária. A amostra foi constituída por 28 mulheres, com idades entre 36 e 73 anos ( $53,77 \pm 10,77$ ), sendo que, destas, 17 não foram submetidas à reconstrução mamária (G1) e 11 realizaram reconstrução mamária (G2). Foram aplicados a ficha de avaliação adaptada de Etienne & Waitman e o Female Sexual Function Index (FSFI). Foi realizada a estatística descritiva das variáveis avaliadas. Foram utilizados os testes de Shapiro-Wilk para a normalidade, para as correlações de variáveis o de Pearson e para as assimétricas o de correlação de Spearman. De acordo com o instrumento, o G2 possui disfunção sexual em todos os domínios. Já o G1, embora tenha o escore total acima do ponto de corte, apresenta os valores dos domínios preditivos para disfunção sexual, exceto para o domínio satisfação, o qual, assim como desejo, apresentou diferença estatisticamente significativa entre os grupos.

**Palavras-chave:** câncer de mama, cirurgia oncológica, sexualidade.

### Introduction

Breast cancer ranks second as the most prevalent disease among females. In fact, it is a problem of public health worldwide (Vieira, Santos, Santos, & Giami, 2014). There are several treatments towards this disease, even though surgery is the most employed one (Sawada,

Nicolussi, Okino, Cardozo, & Zago, 2009). Surgery may also cause significant changes in female self-image since the patients may have to live without the extirpated breast and the consequences of mutilation, with serious interference on their sexuality and conjugal satisfaction (Cesnik & Santos, 2012).

Further, several studies have shown negative emotions in mastectomized females, such as depression, anxiety, concern on the recidivism of the disease and changes in feminine conviviality, which make them feel sexually less attractive (Aerts, Christiaens, Enzlin, Neven, & Amant, 2014). A post-mastectomy breast reconstruction is an alternative surgery that normally improves the patient's life quality and self-esteem, without decrease in any chance of survival, regardless of the stage of the disease (Neto et al., 2013). Moreover, breast reconstruction may be beneficent in female sexual life since self-image and psychological aspects improve.

Sexuality is structured psychologically and socially, encompassing cultural, subjective, relational and biological aspects (Vieira et al., 2014). Sexuality may be experienced differently in females who have undergone breast cancer treatment. In fact, it may contribute towards sexual dysfunction. Sexual dysfunction occurs in circumstances when the sexual response's organic factors undergo changes, either organic or psycho-organic, and manifest themselves as a persistent or recurring disorder related to sexual desire, subjective or genital excitation in orgasm and/or pain/difficulty in sexual intercourse.

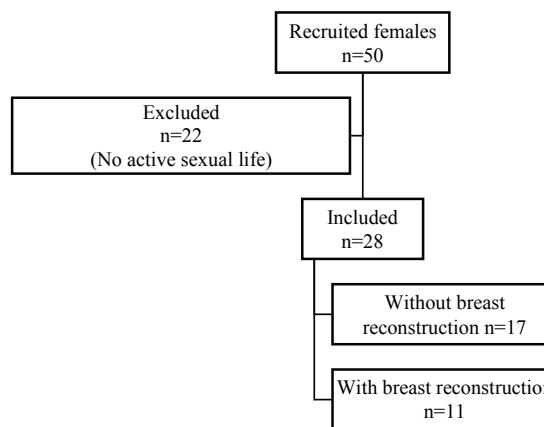
Breast cancer treatment involves several repercussions and the occurrence of sexual dysfunctions should be analyzed by professionals during the patients' therapeutic sessions. The current analysis compares the prevalence of sexual dysfunctions in mastectomized females with or without breast reconstruction.

## Method

A transversal, observational and quantitative research was approved by the Committee for Ethics in Research of the university (Protocol 928,492). Data were retrieved from the Mastectomy Service of a hospital in the central region of the state of Rio Grande do Sul, Brazil, when patients were waiting to see the medical in routine visits. Mastectomized females, at all age brackets, with or without breast reconstruction, but who were sexually active during the last six months were assessed. Patients with neurological problems or who failed to fill the questionnaires were excluded.

Sample calculation was based on results by Moreira et al. (2010) to obtain a 5% significance level (alpha) and a power (beta) level of 90%. Based on these results, a sample of at least sixteen agents, 8 in each group, was foreseen, with and without breast reconstruction, so that the questionnaire Female Sexual Function Index (FSFI) could be applied. Total score was the primary outcome.

Fifty females who had undergone surgery for breast cancer were recruited, however, data were retrieved from 28 females since 22 (44%) were excluded due to lack of active sexual life. Figure 1 demonstrates the flow chart with the exclusion-inclusion criteria adopted in current study.



**Figure 1.** Flow chart of inclusion and exclusion criteria of mastectomized females with or without breast reconstruction with active sexual life.

The sample comprised females, aged between 37 and 73 years ( $53.77 \pm 10.77$ ), which were invited to participate in the research prior to their visit to the doctor. The following questionnaires were used: adapted Etienne and Waitman (2006) assessment card and Female Sexual Function Index (FSFI), validated for the Portuguese language, which is a specific and multidimensional questionnaire to evaluate feminine sexual response. The questionnaire contained 19 questions on five sexual response domains: desire and subjective arousal, lubrication, orgasm, satisfaction, pain or non-comfortableness. Individual scores are the sum of items that comprise each domain (simple score), multiplied by the factor of the domain. A weighed score is thus provided. Total score is obtained by the sum of weighed scores for each domain: the higher the score, the better is the woman's sexual function. Cut-off point of total PSFI score was 26.55 for sexual dysfunctions for the group. Cut-off points for domain analysis were: Desire: 4.28; Arousal: 5.08; Lubrication: 5.45; Orgasm: 5.05; Satisfaction: 5.04; Pain: 5.10 (Rouzi, Sahly, Sawan, Kafy, & Alzaban, 2015).

Descriptive statistics of the variables was first undertaken. Shapiro-Wilk normality test was employed and Pearson and Spearman tests correlation tests assessed symmetric and asymmetric variables respectively. Significance level at 5% was employed for analyses with SPSS 14.0 for Windows.

## Results

Seventeen out of the 28 patients evaluated did not undergo breast reconstruction (G1) whilst 11 patients did so (G2). The two groups were homogeneous with regard to hormone-therapy, as follows: 11 (64.71%) patients of G1 and 8 (72.73%) of group G2. Table 1 demonstrates the females' characterization data.

Table 1 shows that females of both groups are predominantly white, married, and homogenous with regard to age, ethnicity and marital status.

Table 2 shows FSFI assessment of the sexual function of mastectomized females with and without breast reconstruction, featuring means and standard deviation of total scores and domains. Females with total scores below the cut-off point 26.55 were classified with sexual dysfunction, categorized in specific domains which may be affected alone or concomitantly for each female.

Table 2 compares FSFI scores of females with or without breast reconstruction. Mean total score is above cut-off point, with statistically significant difference between the groups. Further, G2 features sexual dysfunction in all domains. Although total scores in G1 lie above cut-off point, it reveals predictive domains for sexual dysfunction, excepting the satisfaction domain which, similar to desire, demonstrates statistically significant difference between the two groups.

## Discussion

Current analysis showed a relationship between mastectomy and sexual functions in females who

had undergone surgery. In corroboration with this procedure, it is known that there are associated collateral effects and traumatic nature of the neoplasm, which frequently cause important deficits in several areas of the sexual function. Dysfunctions may become permanent after years of surgery, with great liabilities for the woman and her partner, as well as for psychological and emotional welfare and her life quality.

Sexual function disorders are associated with deficits in mental health, concern on loss of fertility, rejection and abandonment by the partner (Boquiren et al., 2016). Even when an intense and satisfactory sexual life existed prior to surgery, emotional stress, fatigue, changes in body image and self-esteem caused by breast cancer treatment may challenge the feminine sexual function (Speer et al., 2005).

According to results, breast reconstruction may provide greater repercussions in the females' sexual life when compared to the group which did not undergo surgery. Breast reconstruction may be classified as autologous due to implants (with or without expanders) or an autologous-implant combination. Surgery may be classified as immediate when reconstruction occurred with mastectomy, or late when reconstruction took place at a later date. Breast reconstruction enhances psycho-social benefits and welfare for mastectomized patients (Jagsi et al., 2014). However, relevant anatomic manipulations may occur during reconstruction surgery, or rather, physical discomfort, transitory or permanent alterations in functionality, which may compromise female sexual satisfaction (Oliveira, Morais, & Sarian, 2010).

**Table 1.** Data of mastectomized females, with or without breast reconstruction.

	Without breast reconstruction	With breast reconstruction	p
Age	55 ± 12.36	52.82 ± 6.97	0.600
Ethnicity:			0.399
White	10 (58.82%)	9 (81.81%)	
Brown	5 (29.41%)	2 (18.18%)	
Not informed	2 (11.76%)	0	
Marital status:			0.629
Single	2 (11.76%)	1 (9.0%)	
Married	12 (70.58%)	7 (63.63%)	
Divorced	1 (5.88%)	2 (18.18%)	
Widow	2 (11.76%)	1 (9.0%)	

\*p = significance level.

**Table 2.** Comparison of total scores and domains by Female Sexual Function Index (FSFI) in mastectomized females with or without breast reconstruction, given as means, standard deviation and p.

FSFI	Without breast reconstruction (G1) n=17	With breast reconstruction (G2) n=11	p
Total score	27.57 ± 4.96	21.97 ± 7.59	0.046*
Desire	3.56 ± 0.98	2.78 ± 1.05	0.017*
Arousal	4.16 ± 0.91	3.41 ± 1.29	0.079
Lubrication	4.57 ± 1.74	4.04 ± 1.60	0.402
Orgasm	5.01 ± 0.97	3.78 ± 1.73	0.071
Satisfaction	5.36 ± 0.76	4.0 ± 1.34	0.006*
Pain / discomfort	4.89 ± 1.35	3.96 ± 1.84	0.206

\* scores showing statistically significant difference ( $p \leq 0.05$ ).

Complications in breast reconstruction may include thorax expansion, inefficiency of coughs, changes in sensitivity, infection risks and emotional disorders. Dissatisfaction is frequently related to aesthetic expectations of the women not having been met with due to the reparatory nature of the procedure. Women with breast reconstruction insist that it is not an integral part of their body and they need time for adaptation. This statement is also emitted by females who had an immediate reconstruction since they reported feelings of abnormality with the implanted breast (Vieira et al., 2014).

Besides such repercussions, there are alterations in sexual self-efficiency, vulvovaginal atrophy due to adjuvant hormone-therapy and dyspareunia in mastectomized females, regardless of breast reconstruction (Krychman & Katz, 2012). More than half the women in current study underwent hormone-therapy probably due to deficiency in testosterone which is highly relevant in feminine sexual desire and causes several symptoms, such as decrease in libido, changes in motivation, lessening of well-being and persistent fatigue, affecting the feminine sexual function. The above may explain scores in current study, predicting sexual dysfunction in the desire and pain domains for both groups (Speer et al., 2005).

In spite of the fact that the two groups are prone to sexual dysfunction, scores for the satisfaction domain are above the cut-off point, perhaps due to the circular feminine sexual response model which foregrounds that sexual satisfaction depends on emotional components such as trust, closeness, capacity for sexual surrender, respect, communication, affection and pleasure with sensual touch, shunning the priority of physical components as producers of sexual satisfaction (Basson et al., 2003). It may be suggested that the females studied may possibly present a behavior similar to that described.

## Conclusion

It was observed that females with breast reconstruction had sexual dysfunction in all domains, whereas females without breast reconstruction, although with total score above cut-off point, revealed predictive rates for sexual dysfunction, excepting the domain satisfaction. The latter, coupled to libido, showed statistically significant difference between the two groups.

Breast reconstruction has been regulated only in 2013 by the Brazilian Health Service. The period has

been short and the number of patients that would comply with the inclusion – exclusion criteria is limited. Further, several females reported sexual inactivity which is a relevant fact that must be also discussed.

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