The Role of Body Image, Negative Emotions and Sexual Schema Factors In Predicting Sexual Dysfunction in Women with Breast Cancer

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ABSTRACT

Objective: The aim of the present study was to investigate the predictive role of body image, negative emotions and sexual schema in sexual dysfunction. **Method:** In the present study, based on a causal-comparative design, 105 women with breast cancer in the summer of 2013 have answered the Questionnaires Multidimensional Body-Self Relations Questionnaire (MBSRQ), Depression, Anxiety, Stress Scales (DASS-21), Questionnaire of cognitive schema activation in sexual context (QCSASC), Female Sexual Function Index (FSFI). The data were analyzed using descriptive statistics and step by step regression. **Results:** The results showed that, helpless, depression, appearance evaluation and subjective weight have a significant effect on predicting sexual dysfunction. Due to the effect of each variable every one unit increase in helpless scheme and depression respectively decreases 0/33, 0/18 unit to the level of sexual function. Similarly For every one unit increase in each of the appearance evaluation and subjective Weight, sexual dysfunction increases 0/15 and 0/14 per unit, respectively. **Conclusion:** Overall review of variables and Investigation of their effectiveness on sexual function, we find specified pattern in predicting sexual dysfunction and this pattern can be used in different areas of research, prevention, treatment and Effective steps to improve the quality of psychological treatments in women with breast cancer.

Keywords: Breast Cancer, Negative Emotions, Body Image, Sexual Schema, Sexual Function

Breast cancer is unstoppable growth of abnormal cells that in which cells divide more than normal level and causes masses known as cancer that is often without pain and begins as stiffness in the upper and outer breast (Calin, 2003). Breast cancer is the most common cancer

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among women (Heravi, et al., 2005). Every year about one million patients are diagnosed with breast cancer in the world (Garneri, 2004). In Iran, more than 25 percent of all breast cancers occur in women (Taleghani et al., 2006). Of each 8 Iranian women between the ages of 45-55, a person has the chance of developing breast cancer (Mokhtari et al., 2002). After being informed of developing the disease, women experience a lot of stress, treatments such as surgery, chemotherapy treatments and their side effects also exacerbate tensions (Pedram. et al., 2010). On the one hand, the emergence of new therapies has led to increase a large number of patients under treatment and on the other hand, the complications of the disease and treatment options remain for years after treatment (Alavi and Manaie, 2009; Porter et al., 2006; Deshlid et al., 2006; Hayati et al., 2009). In recent years, a significant increase in clinical research to investigate the mechanisms underlying psychological disorders caused by breast cancer and the functions underlying them has been occurred, which sexual function is one of the most important of them. Sexual function is an important part of human life, which has an essential contribution to quality of life and health (Walsh and Berman, 2005; quoted in Naziri et al., 2010). Women's sexual response cycle stages include: libido, arousal, orgasm, subsidence (Sadouck and Kaplan, 2007). One of the most common forms is sexual dysfunction that is created subsequently by breast cancer (Rich et.al, 2008). The sexual dysfunction in women with gynecologic cancer reaches about 81 percent (Anderson, 2013). Studies show sexual dysfunction in women with breast cancer (Brouckel, et al., 2008; Cebiti et al., 2009; Neto et al., 2013; Harirchi et al., 2012) (Aunen et al., 2003; Fabier and et al., 2006). The factors that lead to sexual dysfunction in people with cancer are two categories: physiological factors (symptoms and side effects: fatigue, nausea, vomiting, diarrhea secondary ovarian failure and creating premature menopause, vaginal dryness, decreased achieve orgasms, hot flashes, mood disorders and urinary tract infections) (Gans et al., 1998; Shover et al., 1997; Antonio and Easton, 2006) and psychological factors. Research conducted in the field of sexual dysfunction focused on the role of cognitive and emotional processes in the creation and especially maintenance of these disorders. Of components in the area of sexual dysfunction can be negative emotions, negative body image and impaired sexual schemas (Rich et al., 2008; Banjerball et al, 2003, quoted by Ghasami, Kaplan and Sadouck, 2007; Soltaninejad , 2011).

One of the factors considered in determining sexual dysfunction is negative emotions. Negative emotions include anxiety, depression and stress, which occur due to adverse events or experiences. Some studies suggest that negative emotions are common in women with breast cancer (Marasso et al., 2000; Jesse et al., 2008; Farykhan et al., 2011; Alcaliglo et al., 2008; Mehnert et al., 2009; Montazeri et al., 1383; Alavi and Epstein, 1388; Fan et al., 2008; Borges et al., 2005; Kisan et al., 2003), for treatment of breast cancer because of changing appearance, including hair loss, breast lift or deforming will leave profound psychological effects on patients (Ferrite and Fasl, 2007; Moreira et al., 2010). And this unpleasant experience causes negative emotions (Sepah, 2009; Kernan, 2009). Also, the research done by Azar et al. (2003), Vaziri and

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colleagues (2003) and Bahrami et al (2007) suggest that sexual dysfunction in patients who report more negative emotions is higher.

Another important component suggested in some studies is impair in body image. Body image is the mental picture of the size and shape of the body and includes beliefs, perceptions, thoughts, feelings and behaviors that a person has in connection with their physical appearance (Cash, 1997). Thompson (1990) points out that the physical appearance structure includes three components: 1) cognitive factors (estimation of body size), 2) subjective factors (aspects such as satisfaction, attention, anxiety and cognitive assessment) and 3) behavioral components (avoid situations that cause a person's physical appearance as a factor that is a shame experience). Surgery that leads to the loss of the breast or change its shape will have a negative impact on body image and subsequently sexuality and sexual function in women with breast cancer (Onen et al., 2003; Fabier et al., 2006). Previous studies on the relationship between body image and sexual function in women with breast cancer showed a correlation between body image and sexual function disorders in these patients (Fabier et al. 2006; Barney, 1997; Fabier et al, 2006; Shover, 1994; Takahashi et al., 2005; Lam et al, 2011; Bakht and Najafi, 2010).

In a study on Iranian sample, body image between two groups of women with breast cancer who have undergone surgery or have not has been studied that there is no significant relationship between them (Sadeghi Someeh Oliaei et al., 2012), but this variable has not been studied as a predictor of sexual function.

Another variable that can contribute to the prediction of sexual dysfunction is sexual schema. In general, cognitive schemas as the core of a person's cognitive structure help the person categorize and interpret their experiences in a meaningful way (Beck, 1967, quoted by Nobre. PJ and Pinto-Gouveia. J, 2007). Gender schemas as well as other schema with the meanings they give to the events are responsible for the responsibility of leading meaningful emotional and behavioral responses to external and internal stimuli. Therefore, if the meaning that gives to a particular situation is not complying with the reality, behavioral and emotional responses occurs that leads to sexual dysfunction. In the research on the relationship between schemas and sexual function in women with cancer in America (2007), the sexual schema as a mediator variable between sexual output and psychological output explained a significant variance of recent sexual behavior, responsiveness and satisfaction (Carpenter et.al, 2007). The results of Nobre research showed that people with sexual dysfunction, compared with men with normal sexual function, enables more negative sex schema in sexual positions and in fact, faulty cognitive structure provides the foundation for this sexual dysfunction (Pinto-Gouveia, 2009). Recently, reviewing the role of women's sexual schema in initiating and perpetuating gender schema and sexual dysfunction has been considered, yet this study has not been done on the women with breast cancer.

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In light of what mentioned above, negative emotions, body image and sexual schema as predictors of sexual dysfunction in women with breast cancer have been considered in this study. Although the first and second correlations with sexual function alone have been studied in previous research, no research has been done to investigate the relationship between these factors with each other. However, an examination of the role of predictor components of a disorder is possible if a variable obtained from various studies is reviewed together as a pattern in order to determine the contribution of each one in the pattern. The present study aims to investigate the relationship between negative emotions, body image and sexual schemata with sexual dysfunctions with the aim of determining the contribution of each component in predicting sexual dysfunction in women with breast cancer.

METHODOLOGY

Research Design

This study was designed within the framework of a causal-comparative design. In this design, body image, negative emotions and sexual schema as predictor variables and sexual function has been considered as criterion variable.

Participants

The study population of this research includes 20 to 55-year-old married woman with breast cancer who were undergoing surgery at least 6 months prior to the study. They also referred to treatment centers in Zanjan and cancer-related centers in Tehran to track their treatment. In the present study, to select a sample, purposive sampling method was used. The collection method was in such a way that the researcher attended in the first half of the year 2013 in Vali-Asr hospitals and Ayatollah Mousavi Hospital of Zanjan (clinics and hospitals of Zanjan University of Medical Sciences), University of Breast Cancer Research of Jihad Daneshgahi, Cancer Research Center of Shohadaye Tajrish and Azar Surgery Center (the center linked to cancer in Tehran). Then, a short interview is done with married 20 to 55 years women with breast cancer who had undergone surgery at least 6 months before and is following up their treatment were selected as sample. If they were willing to participate in this research, and were met inclusion and exclusion criteria were selected as research sample. Finally 105 patients were selected and were enrolled in the list of clinical groups after signing the written consent letter.

Inclusion criteria for the clinical group were: age 20 to 55 years old, married, with a unilateral or bilateral history of breast surgery, undergoing surgery at least 6 months prior to the implementation of the study.

Research Tools

Multidimensional Body-Self Relations Questionnaire (MBSRQ):Self-measurement with 47 articles has been made by Cash et.al to assess body image. In this study, the final form of the questionnaire that was prepared in 1997 by Cash is used. This questionnaire has 6 subscales

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appearance evaluation, appearance orientation, fitness evaluation, fitness orientation, preoccupation with weight gain or weight loose, subjective weight and body areas satisfaction, in which the participants response based on the Likert scale (1 = strongly disagree to strongly agree = 5). Reliability and validity of this test has been approved by Cash (Cash, 1997). Its psychometric properties have been studied in Iran. Cronbach's alpha coefficients for all subscales have been reported 0.88, 0.85, 0.83, 0.79, 0.91 and 0.94 which shows a good internal consistency of the questionnaire. Correlation coefficient for each subscale twice within two weeks is 0.78, 0.75, 0.71, 0.69 and 0.89, respectively which shows good test-retest reliability (Rahati, 2004). This tool with 19 items measures women's sexual performance in six independent areas, including sexual desire, arousal, wet, orgasm, satisfaction and pain during sex. Based on the Likert scale (never or almost never = 0/1, always and almost always = 5). The subscale of desire is scored from 1-5 and other subscales are scored from 0-5 (between score 1 and score 5). Alpha coefficient in the study done by Rozen et.al is achieved 0.89 and 0.74 in the study of Mestone (Mestone, 2003). Their psychometric property has been studied in several studies in an Iranian sample (Mohammadi et.al, 2008, Fakhri et.al, 2011). According to the latest study conducted by Fakhri and colleagues, reliability coefficient of the test for each area mentioned above was ranging from 0.73-0.86 and internal consistency was in an acceptable range (a ranging from 0.72-0.90).

Depression, Anxiety, Stress Scales (DASS-21): The questionnaire was developed in 1983 by Lovibond. This scale consists of 21 symptoms associated with negative emotions (depression, anxiety and stress). Each of the three measures of depression, anxiety and stress has 7 questions and the participants' score in each of the three subscales is obtained by adding the terms related to all its items in the subscale. Several studies have shown that the subscales of DASS-21 have good psychometric properties. In a study with non-clinical population, internal consistency coefficients of the three subscales of depression, anxiety and stress are 0.91, 0.84 and 0.90 (Loibando and Loubiand, 1995) and in a study with clinical population is reported 0.96, 0.89 and 0.93, respectively (Brown et.al, 1997). Also Brown et.al reported test-retest reliability of three subscales of DASS-21 with an interval of two weeks between 0.71-0.81. Three-factor structure of DASS-21 scale has been supported in various studies (Loibando and Loubiand, 1995; Brown et al., 1997; Anthony et al., 1998).

A psychometric characteristic of this questionnaire has been approved by the Iranian example. In this study, using confirmatory factor analysis, three-factor structure was confirmed. The internal consistency coefficient scale of depression, anxiety and stress are 0.87, 0.81 and 0.87, respectively and test-retest reliability for this three subscales has been measured 0.84, 0.89 and 0.90 (AsghariMoghadam et.al, 2008).

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Questionnaire of cognitive schema activation in sexual context (QCSASC): In this questionnaire, 28 schemas associated with psychological problems is assessed. These schemes have been designed by JS Beck (1995). In this test, the activation of these schemas in four sexually negative positions which sexual disorders are most likely are examined. The implementation of this test is that the participants will be asked to read four stories. Each person must choose a story that is most similar to his/her life and among ten thrilling presented, they should specify the emotion that is most likely to be occurred for him/her in that situation (anxiety, despair, sadness, fear, guilt, shame, anger, hurt, joy, satisfaction). The participants are required to visualize a story that most likely complies with them and rank each 28 schemas based on Likert Scale (completely incorrect=1 to completely correct=5). One's scoring is by adding 28 items. The higher the score, the higher the activation of negative schemas. Cronbach's alpha 0.94 has a high internal consistency and test coefficient and test-retest 0.66 shows a good reliability (Nobre. PJ and Pinto-Gouveia, 2009). This questionnaire is conducted on samples of men and women addicts in Tehran and its reliability and validity were assessed optimal (Rostami et al., 2009).

Research method: 105 of those who have the criteria for participation in research, such as the 20-55 years age, married, diagnosis of breast cancer and undergoing surgery at least 6 months before the onset of the study were placed in clinical groups. After completing the consent form, all participants completed Multidimensional Body-Self Relations Questionnaire (MBSRQ), Womens' sexual function scale (FSFI), Depression, Anxiety, Stress Scales (DASS-21) and Cognitive Schemas Activation Inventory in the sexual field (QCSASC).

Data Analysis Method: To analyze the data, besides descriptive statistical methods to compare means, stepwise multiple regressions to predict the contribution of each of the negative emotions, body image and sexual schema variables on sexual function is used. Statistical tests above have been done using SPSS-18 computer software.

FINDINGS

The questionnaires of 105 participants were analyzed. The average range of these subjects were 45/67(+)(-)/7/9. the mean and standard deviation of patients' scores in the variables of sexual function, negative emotions, body image and sexual schema are given in Table 1.

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Table 1. Statistical indicator of research variables (sexual function, negative emotions, body image and sexual schema

	Aspects	Mean	SD
Aspects of sexual function	desire	2/47	1/26
	arousal	2/47	1/76
	Lubrication	2/5	2/05
	Orgasm	2/45	1/93
	Satisfaction	3/4	1/73
	pain	2/65	1/95
	Total score of sexual function	15/93	8/9
Subscales of negative emotions	Stress	16/21	10/56
	Anxiety	12/55	9/38
	Depression	12/01	10/54
	Total score	40/51	27/87
Subscales of body image	Appearance evaluation	22/02	3/81
	Appearance orientation	39/11	5/71
	Fitness evaluation	9/68	2/31
	fitness orientation	39/95	6/41
	Subjective weight	7/18	1/56
	Body areas satisfaction	32/92	7/51
	Total score of body image	150/56	15/44
Subscales of sexual schema	Undesirability/rejection	15/44	7/42
	Incompetence	16/97	7/44
	Self-depreciation	4/85	2/49
	Difference /loneliness	7/23	2/88
	Helpless	9/41	4/33
	Total score of sexual schema	53/93	20/89

To determine the contribution of each of the variables of negative emotions, body image and sexual schemas in sexual dysfunction, stepwise multiple regression analysis was used. Subscale scores of negative emotions (stress, anxiety, depression), body image (appearance evaluation, Appearance Orientation, fitness evaluation, fitness orientation, subjective weight, body areas satisfaction) and sexual schemas (Undesirability/rejection, Incompetence, Self-depreciation, difference/ loneliness, helplessness) as criterion variables were entered into the regression equation. The results of this analysis are presented in tables 2 and 3.

The findings presented in Table 2 show that in the regression analysis carried out by the simultaneous arrival of all the variables, predictive variables could explain (predict) about 22 percent variance of criterion variable (sexual function). The F (5.47), degrees of freedom (10) and a significance level (0.001) confirmed that the regression model is significant. Coefficient of determination ($R^2=0.23$) also shows the predictive power of sexual function by negative emotions, body image and negative sexual schema and 77% called error term is the unknown

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impact in the model that is created by other factors. Standard impact coefficients (Beta) also show that the effects of depression and helplessness schema with 0.276, 0.239 values have the largest contribution in predicting sexual function. Significant impact of these variables in explaining sexual function have been approved by t-test in an error level less than 5%. It is observed that these variables have a negative effect on sexual function (in other words, if an increase in depression, sexual function decreased in 0.28 units and per one unit increase in helplessness schema score, sexual function will reduce as 0.24 units).

It is observed that these variables have a inverse effect on sexual function (in other words, in case of an increase in depression, sexual function will decrease 0.28 units and per one unit increase in the scheme in distress, sexual function will reduce as 0.24). Investigating the significance of impact coefficients by t-test showed that the effect of other variables is not significant.

Table 2 multiple regression of sexual function and predictive variables (group, negative emotions, and body image and negative sexual schemas)

Regression Model	Impact (B) Factor	Standard Error (SEB)	Standard Beta(Beta)
Group	-1/73	1/47	-/09
Stress	/11	/12	/11
Anxiety	-/003	/11	-/002
Depression	-/26	/11	-/28*
Body Image	/009	/05	/014
Rejection	/01	/12	/010
Incompetence	-/25	/17	-/191
Self-depreciation	/27	/39	/065
Loneliness	/11	/37	/035
Helpless	-/52	/24	-/24*
R2= 0/23**	N= 194	P<0/05* P<0/01**	

The findings presented in Table 3 are obtained based on stepwise variables to the model. In this method, variables entrance to the model is done stepwise, so that the variables that are mostly correlated with dependent variable are entered the model and if they are eligible to be entered the model in terms of explanation power will be remained in the model; otherwise, they will be exited from the model. This continues until the model significance is reached 95%, the error level reach the maximum of 5%. The model efficiency in each step will be surveyed by F value.

The results of the implementation of the stepwise regression analysis shows that in the first step, "frustration" has the condition for entry into the regression model and could explain about 18 percent of changes in sexual function alone. In the second step, the variable "depression" is added to the model which reaches determination coefficient of the model to about 21% along

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with "helplessness" and in the third and final step, appearance evaluation and mental weight are added to the model. And determination coefficient of the model has reached 24% with the presence of all variables of helplessness, appearance evaluation and mental weight.

Table 3. Stepwise regression model based on variables such as negative emotions, body image and sexual schemas

Step / variable		Determination Coefficient R^2	Added determination of coefficient ΔR^2	F
1	Helpless	/18**	/18	/41
2	Helpless-depression	/21**	/03	25/15
3	Helpless – depression-appearance evaluation	/22**	/02	18/35
4	Helplessness – depression-appearance evaluation-subjective weight	/24**	/02	15/15
			P<05*0/P<0/01**	

Results presented in Table 4. Shows that the impact factor (explanation) of each variable entered the model in each step. According to the impact of each of the variables, it can be concluded that for every unit of increase in helplessness schema and depression, sexual function will decrease as much as 0.33 and 0.18 units. Similarly, an increase in the rate of appearance evaluation and mental weigh, sexual function will increase 0.15 and 0.14 units.

Table 4. Effect of the impacts of variables entered into the model in explaining sexual function

Regression Model	Impact (B) Factor	Standard Error (SEB)	Standard Beta(Beta)
Group	-1/73	1/47	-/09
Stress	/11	/12	/11
Anxiety	-/003	/11	-/002
Depression	-/26	/11	-/28*
Body Image	/009	/05	/014
Rejection	/01	/12	/010
Incompetence	-/25	/17	-/191
Self-depreciation	/27	/39	/065
Loneliness	/11	/37	/035
Helpless	-/52	/24	-/24*
R2= 0/23**		N= 194	P<0/05* . P<0/01**

DISCUSSION AND CONCLUSION

This study aimed to investigate the role of negative emotions, body image and sexual schemas in predicting sexual dysfunction in the women breast cancer. The results showed that the helplessness, depression, appearance evaluation and mental weight have significant effect in

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predicting sexual function. According to the contribution of each variable, it can be concluded that for every one unit of increase in helplessness scheme, sexual function will decrease as much as 0.33 units. Similarly, an increase in depression causes sexual function reduces as much as 0.18 units and the variable of appearance evaluation will increase sexual function as much as 0.15 per one unit of increase and mental weight increases sexual function as much as 0.14 per one unit of increase.

The overall results of this research in the study of negative emotions in women with breast cancer are consistent with the research results of Kisan et al (2003), Maraso et.al (2000), Jesse et al. (2008) Farykhan et al (2011) Alcaliglo et al. (2008) and AlaviManari (2009). In explaining the role of negative emotions variable in predicting sexual dysfunction, it should be noted that women who have undergone surgery tolerate a lot of stress in the long run due to disruption of their body image. So they use emotion-focused coping mechanisms (McGuire, 1978) that cause high levels of anxiety and depression in their patients (Stanflied and Staton, 2004). These disorders also put one's various functions, including sexual functions into problems. The results achieved on the relationship between dimensions of sexual function and body image among several subscales confirmed findings of research done by Fabiar et.al (2006), Barni (1997), Fabiar et.al (2005), Bakht and Najafi (2010) and Harirchi et.al (2012).

In explaining the problems related to body image and sexual function, findings of Fibar et.al (2005) can be pointed out. This study is also consistent with the research results of Holmz, Ouhma and Korso (2008), Garousi and Faezi (2008) (quoted by Bakht and Najafi, 2008) who believed that most of these problems in patients with breast cancer is related with factors such as hair loss caused by chemotherapy, concerns or weight loss or gain, impaired mental health, low self-esteem and low perceived sexual partner of the patient's condition. According to the research done by Nobre. PJ and Pinto-Gouveia (2009) on women with sexual dysfunction, the incidence and diversity of negative sexual schema is more than that of healthy women which the present study is consistent with. Nobre. PJ and Pinto-Gouveia (2008) maintain that most women with sexual problems make incompetence schemas when dealing with negative sexual situations. In women with breast cancer, sexual schemas of helplessness and "incompetence" in anticipation of the sexual function played an effective role. Because of the disease and secondary sexual dysfunction, women with cancer show more helplessness schemas more than incompetence schemas which the dominant schema in women with sexual dysfunction is according to the theory proposed by Nobre and Pinto-Gouveia (2008). Chemotherapy and radiotherapy can cause secondary ovarian failure and create premature menopause, vaginal dryness, Dyspareunia, Decreased sex drive and reduced achieving to orgasms, hot flashes and mood disorders and increased urinary tract infections (Antonio and Easton, 2006). Due to the illness of sexual function, such as vaginal moisture and sex drive by cancer treatments such as radiotherapy, chemotherapy and drugs prevention is disrupted and since the person has no authority on these

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physiologic changes, it is led to feelings of lack of control and more frustration in these patients. That's why; helplessness schema has more predictability for sexual dysfunction.

By general assessing of variables and their influence on sexual function, a specific model in predicting sexual function can be reached which in this model, helplessness, depression, appearance evaluation and mental weight have significant impacts in predicting sexual function, respectively. According to the results raised, many negative emotional reactions have been seen in women with cancer. It can be concluded that helplessness schemas predicts impaired sexual function as cognitive structures related to depression and faulty body image, especially appearance evaluation plays a key role in predicting sexual function in faulty body image, especially appearance evaluation in predicting sexual function in connection with mentioned variables. The combination of these variables, especially the schema of helplessness, depression and appearance evaluation predicts and justifies sexual dysfunction.

One limitation of this study is not examining individual stressors and psychological conditions in the family environment prior to disease and also lack of examining the role of wife and communication patterns as a key component in the sexual life of the patient. Is recommended for future studies, wives of patients and the role of psychosocial stressors on sexual function be studied.

The results of this study provide useful information about the role of negative emotions, body image and sexual schemas in predicting sexual dysfunction in women with breast cancer to clinical psychologists, doctors and researchers that can be used and invoked in different areas of research, prevention and treatment and take an effective step in prevention of sexual dysfunction in this population and increase the quality of psychological treatments in improving sexual function in women with breast cancer and improve their quality of life.

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