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Study of Sexuality in Women in Complete Release of Non-Metastatic Breast Cancer, About 30 Women

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ABSTRACT

Introduction: Breast cancer is a public health problem because of its frequency and severity. This pathology affects the quality of life of the patient and causes physical, psychological, social and especially sexual sequelae.

Materials and Methods: This is a cross-sectional study of 30 patients followed for non-metastatic breast cancer at Monastir Maternity and Neonatal Center. Data collection was conducted using a fact sheet and two internationally validated scales: RSS (Relationship and sexuality) and BESAA (Body-Esteem Scale for Adolescents and Adults).

Results: Sexual desire was affected by the disease and its treatments in fourteen patients. The ability to achieve orgasm was reduced in eighteen patients Fourteen patients felt less sexually attractive. Twenty one women reported a decrease in the frequency of sexual intercourse. Four women reported a fear of sex. Dyspareunia and vaginal dryness were present in six women. Women aged 35 to 39 years were significantly more afraid of having sex ($p = 0.039$) and less sexual frequency ($p = 0.003$) Hormone therapy was significantly correlated with sexual functioning impairment ($p = 0.009$) and lower sexual frequency ($p = 0.017$). Overall, the alteration of the body image was significantly and positively correlated with sexual fear ($P = 0.011$, $r = + 0.46$). Altered perception of appearance was significantly and positively correlated with sexual fear ($p = 0.008$, $r = +0.477$). The dissatisfaction with weight was significantly and positively correlated with sexual fear ($P = 0.011$, $r = +0.45$).

Conclusion: Women with breast cancer suffer clear sexual sequelae. These women deserve adequate and collaborative care to ensure a better life.

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Introduction

Breast cancer is one of the major public health problems. Indeed, it is the most common cancer in women [1]. Worldwide, nearly one million women with breast cancer each year and almost 40,000 die from this disease [2]. The highest incidence is found in developed countries, but it is also increasing at an alarming rate in low- and intermediate-review countries [3]. In 2014, breast cancer is the most common cancer in Tunisia with an incidence rate of 1.826/100,000/year among women, and its weight on female mortality remains at 22% among 2,800 deceased women [4]. Thanks to early detection and improved treatment, the death rate from breast cancer has decreased. But despite improved survival rates, the literature describes a wide range of difficulties in patients' daily lives [5]. Indeed, the discovery of breast cancer remains a huge shock for women because cancer is a dreaded disease, often perceived as the worst disease, it is a pathology with a strong psychological impact. In addition, the breast, symbolic guarantor of femininity, of maternal and sexual function, is affected. This is why, when the woman is diagnosed as having breast cancer, most often, she immediately feels vulnerable, overwhelmed by the imminence of mortality, aging and infertility [6]. Breast cancer is one of the serious diseases that threaten women's lives and upset them on all levels: physical, psychological, social and sexual, and have clear sequelae. This highlights the particular effect on the life of the couple. The association of sexuality and breast cancer remains a delicate area. In fact, the subject of sexuality still suffers from taboos and silence, the Tunisian does not try to talk about his sexuality within his couple what about the patient suffering from breast cancer who finds herself obliged to hide his sexual problems, not only from his spouse but also from his doctor [7-8]. However, cancer was perceived as a morbid state, a topic not to be discussed under any circumstances [9].

With the therapeutic progress we manage to improve the vital prognosis, the patients survive longer and longer after this disease,

but all the treatments, namely surgery, chemotherapy, radiotherapy, hormone therapy and finally targeted therapies can cause sexual dysfunction [10]. It therefore seems legitimate to wonder about the impact of treatment on affective and sexual life.

This study was carried out in order to evaluate the sexuality of women treated for non-metastatic breast cancer in remission during surveillance as part of the evaluation of the impact of breast cancer and its treatment in these patients. Our objectives were to evaluate the frequency of sexual disorders in these patients, to describe the nature of these disorders and to identify the predictive factors of these disorders.

Materials and Methods

This is a descriptive cross-sectional study. This study was conducted from December 1, 2017 to April 1, 2018 at the consultation of the cancer medicine unit at the maternity and neonatology center of Monastir. Our study included 30 patients followed for non-metastatic breast cancer presenting to the consultation for post-therapeutic control. We explained for all the patients who participated in the study the reasons and the objectives of this work.

The inclusion criteria are as follows: The patients recruited had:

- A histologically proven non-metastatic breast carcinoma,
- An age ≤ 60 years old,
- Completed their adjuvant chemotherapy and/or radiotherapy treatment for at least three months. Current treatments with hormone therapy and/or Trastuzumab (HerceptinR) have been accepted,
- Been in complete remission from their cancer,
- An active sex life and a sexual partner.

The exclusion criteria are as follows:

- Age over 60,
- Lack of consent,
- Intellectual disorders hindering communication,
- Metastatic evolution and/or previous relapse.
- Absence of a sexual partner.

The research was carried out in the consultation room of the cancer medicine unit at the maternity and neonatology center of Monastir. After an explanation to the patients on the progress and the reasons for the study and, in case of consent, the data collection was carried out using a pre-established questionnaire. An interview was proposed for each patient comprising a data collection sheet which included the socio-demographic characteristics (the personal characteristics and the characteristics of their partners) (Appendix 1) and the clinical and therapeutic data which were collected from the files of the patients. All medical records were consulted after patient authorization. Sexuality and body image were assessed using the RSS scale (Relationship and sexuality) (Appendix 2) for the evaluation of sexuality and the BESAA scale (Body-Esteem Scale) for body image. (Appendix 3) The data were entered and then analyzed, anonymously, using version 20.0 of the SPSS software. We used the Student's t test for the comparison of two means, the ANOVA test for the comparison of several means and the bivariate correlation for the comparison of quantitative variables. The p value <0.05 was considered statistically significant.

Results

Characteristics of the Population Studied

The average age of our patients was 47.07 ± 1.21 years with extremes ranging from 35 to 60 years. Half of the population live in an urban area. Seven patients were illiterate, while twelve had a primary level of study, eight had a secondary level and three patients had a higher level. Concerning the partners, eight men were illiterate, six had a primary level, seven had a secondary level and nine a higher level. Twenty patients were housewives. At the time of the study, six women were on sick leave and four patients had returned to work. Regarding the partners, twenty-four had a professional activity. One spouse was unemployed and five others were retired. Half of our study population lived with extended families. Four women had a primary infertility problem and two women had secondary infertility. The women in our population had an average of 3 ± 0.32 dependent children with extremes ranging from 1 to 7. Ten patients were in natural menopause at the time of the study, while eleven women were in menopause induced by chemotherapy. The tumor is classified as Tx in 3.3%, T1 in 20%, T2 in 43.3%, T3 in 16.7% and T4 in 16.7%. Lymph node involvement was N0 in 21 women and N1 in 6 women in our population. Remember that all our patients had non-metastatic breast tumors (M0) according to the study inclusion criteria. All of our patients had been operated on. Twenty women had undergone Patey-type radical surgery and the others had undergone conservative surgical treatment such as lumpectomy with ipsilateral axillary lymph node dissection. None of our patients had undergone breast reconstruction after radical surgery. All our patients had received chemotherapy treatment. 19 women had reported moderate tolerance, 8 women had tolerated it well and 3 women had reported poor tolerance. Eleven women had amenorrhea after chemotherapy. Sixteen patients had received adjuvant hormone therapy, ten of whom were undergoing treatment at the time of the study. Ten patients had tolerated their hormonal treatment well, three patients had poorly tolerated it and three had reported an average tolerance. Ten women had received Herceptin-type targeted therapy, eight of whom were undergoing treatment at the time of the study. All our patients had good tolerance to Herceptin. Twenty-six patients had locoregional radiotherapy. Sixteen patients had reported good tolerance, nine women had moderate tolerance and only one patient had reported poor tolerance.

Study of Sexuality

The average scores for each item making up the three dimensions of the RSS scale are shown in Table I.

The mean scores for each of the 6 items studied separately are shown in Table II.

Table I: Average scores of the 3 dimensions according to the RSS scale

Item	Average score for the study population	Min	Max
Sexual dysfunction:			
2: Negatively affected	1±0,11	0	2
3: Orgasm disorder due to illness	1,86±0,1	0	3
4: Orgasm disorder due to treatments	1,9±0,09	1	3
11: Frequency of sex	2,72±0,08	2	3
12: Possibility of reaching orgasm	2,59±0,09	2	3
Overall average score	10,06±0,4	5	14
Sexual frequency:			
8: Hugs and kisses	2,07±0,14	5	14
13: Satisfaction with the frequency of reports	1,93±0,16	0	4
16: Number of reports in the 2 weeks preceding the interrogation	1,5±0,18	0	3
Overall average score	5,46±0,4	0	10
Sexual fear:			
9: Fear of reports	0,59±0,11	0	2
10: Fear of intercourse partner	0,14±0,06	0	1
Overall average score	0,7±0,16	0	3

Table II: Average scores of the 6 Items of the RSS scale studied separately

Item	Average score for the study population	Min	Max	% of patients
1: I think I have received enough information about how the disease and its treatments could affect my sex life	0,07±0,04	0	1	Altered 28 Preserved 2
5: Possibility of sexual intercourse whenever I want	1,93±0,11	0	3	Altered 28 Preserved 2
6: My partner and I are emotionally separated during the illness	1±0,19	0	3	Altered 3 Preserved 27
7: My partner and I grew closer during illness	1,28±0,19	0	3	Altered 25 Preserved 5
14: I had vaginal dryness that I am treating	0,79±0,77	0	1	Altered 6 Preserved 24
15: My feminine identity was negatively affected after the onset of the disease	1,86±0,23	0	3	Altered 14 Preserved 16

The sexual dysfunction dimension was altered in two patients. Fourteen patients had a sexual life altered by the disease and its treatments (RSS2). The frequency of sexual intercourse (RSS11) was reduced in 21 patients. Sexual desire (RSS3 and RSS4) was reduced in 14 patients and the ability to achieve orgasm (RSS12) was reduced in 18 patients. Overall, this dimension was altered in eight women. Dissatisfaction with the mode of affective relationship in the couple was found in twenty-four patients (RSS8 and RSS13) and four women stated that they had not had sexual intercourse during the two weeks preceding the interview (RSS16). None of our patients had a pathological score of this dimension. Four patients reported fear of sexual intercourse (RSS9). In our study population, twenty-eight patients said that they had not received information about the impact of breast cancer and its treatments on sexual relations (RSS1=0). Three patients and their partners had been emotionally separated during the course of the disease (RSS6) and five patients were emotionally close to their partners (RSS7). Fourteen patients felt less sexually attractive (RSS15). Other sexual disorders such as vaginal dryness were reported in six women (RSS14). The average scores for the three dimensions of body image as well as the overall average score are shown in Table III.

Table III: Evaluation of body image

BESAA	Average scores
Perception of appearance	19,3±0,67 (13-29)
Satisfaction with weight	15,93±0,73 (10-27)
Positive evaluation attributed to others	11,93±0,54 (7-19)
Score global	47,16±1,69 (30-68)

Women between the ages of 35 and 39 developed significantly more fear of intercourse and lower sexual frequency. The bivariate analysis showed that the professional activity of the patients had no impact on the life of the couple. Menopause was not associated with a higher prevalence of sexual dysfunction, sexual frequency, and sexual fear. Clinical tumor size (T) and clinical lymph node status (N) were not correlated with sex alterations. The type of surgery was not associated with a higher prevalence of sexual disorders. Tolerance to chemotherapy was not correlated with the development of a sexual disorder. Amenorrhea after chemotherapy was not associated with a higher prevalence of sexual disorders. Hormone therapy was significantly correlated with impaired sexual functioning and lower sexual frequency. We did not find a significant relationship between the treatment with hormone therapy in progress or not and its tolerance and sexual disorders. Sexual problems were not significantly correlated with either radiotherapy or its tolerance. Sexual problems were not significantly correlated with Herceptin treatment. Appearance perception was significantly and positively correlated with sexual fear (p=0.008; r = +0.477). Satisfaction with weight was significantly and positively correlated with sexual fear (P=0.011; r = +0.45). Overall, the alteration of body image was significantly and positively correlated with sexual fear (P=0.011; r=+ 0.46). On the other hand, the other disorders sex were not associated with significantly impaired body image.

Discussion

Characteristics of the Study Population

Our study population was composed of 30 patients with an average age of 47.07 ± 1.21 years with extremes ranging from 35 to 60 years. Beyond this age, sex life can be disrupted by factors other than breast cancer. Most (83.3%) of the patients were between 40 and 60 years old and only five patients were between 35 and

39 years old and no women under 35 years old. In Tunisia, the percentage of young women under 35 with breast cancer is 13%. It is 3% in Europe [11]. In addition, 20 women were housewives, 7 patients were illiterate and the socio-economic level was low to medium in 22 women because the majority of women of good socio-economic level prefer the private sector for the management of their disease. Two-thirds of our population were premenopausal when diagnosed with breast cancer. This is explained by the fact that breast cancer is related to relative hyperestrogenism which may be due to a late first pregnancy beyond the age of 35 and to late menopause [12]. The management of breast cancer breast in our patients consisted of multiple therapeutic measures (short and long term) to ensure healing and improve its prognosis such as surgery, chemotherapy, radiotherapy, hormone therapy and targeted therapy. Surgery remains the primary treatment for breast cancer. Twenty of our patients had undergone Patey-type surgery (mastectomy and ipsilateral axillary dissection) and the others had undergone conservative surgical treatment such as lumpectomy with ipsilateral axillary lymph node dissection. In the event of a total mastectomy, breast reconstruction can be proposed to the patient, who should be informed of the technical procedures [13]. No patient in our population had benefited from breast reconstruction, which was perceived by our patients as something new and its practice is not routine. Chemotherapy treatment was used in all our patients. Only 3 patients had poorly tolerated it. The majority of our patients (87%) had had adjuvant radiotherapy. Most had reported good tolerance and only one patient had poor tolerance. In our population, sixteen patients had received adjuvant hormone therapy, ten of whom were undergoing treatment at the time of the study. The majority had tolerated it well. A third of our patients had received trastuzumab (Herceptin). This treatment was in progress in eight patients at the time of the study with good tolerance in all our patients.

Impact of Breast Cancer on Sexuality

Various studies have shown that women with breast cancer report sexual disorders such as dyspareunia, vaginal dryness, decreased desire and sexual arousal, difficulty reaching orgasm [14]. The intrapsychic experience changes in women's sexuality includes fear of loss of fertility, negative body image, feelings of sexual disinterest, loss of femininity, depression and anxiety, and alterations in sexual sentiment [15]. The partner also has its problems, but this has not yet been clearly investigated so far [16]. In Tunisia, the influence of breast cancer and its treatments on sexuality remains very little explored [17]. Assessing the quality of sexual life, we found 7% sexual dysfunction, sexual frequency was impaired in almost 27%, and no patient had a pathological sexual fear score.

Sexual desire was affected by the disease and its treatments in fourteen women. The ability to achieve orgasm was impaired in eighteen women. Fourteen patients felt less sexually attractive. Twenty women had reported a decrease in the frequency of intercourse. Four patients reported fear of sexual intercourse. Dyspareunia and vaginal dryness were present in six patients and four patients testified to not having sexual activity during the two weeks preceding the questionnaire. The data in the literature agree with our result. Indeed, according to a Canadian review of the literature, women with breast cancer are more vulnerable to developing sexual dysfunction than healthy women [18-19]. Our results were comparable to a Tunisian study by Zaied using the RSS scale, conducted on 100 women with breast cancer in Monastir, which found 18% sexual dysfunction, 47% reduction in sexual desire, decreased ability to reach orgasm in 61%, sexual attraction in 25%, frequency of intercourse in 53%, and dyspareunia and vaginal dryness were present in 45% of patients [20]. In the Tunisian study by Ellouz of 100 women followed for breast cancer at the Salah-Azaiez Institute in Tunis, 75% of cases were sexually dysfunctional, an alteration in the sexual relationship and in the couple relationship in 47% and 24.7% respectively in the study population, decreased sexual desire in 56%, decreased sexual arousal in 60%, difficulty reaching orgasm in 59%, lubrication insufficient in 53% and penetration pain in 53% and Fifty-seven percent of patients were dissatisfied with their sexuality [21]. The alteration of sexuality in our study population, where the women were followed over a more or less long period, was less severe than that found in the Ellouz study where the cancer follow-up was for a period of 6 months to 1 year. Our results are similar to those of the French and Moroccans. Indeed, a cross-sectional French study, carried out at the Institut Curie in Paris on a sample of 378 women aged 53 on average, treated for cancer of the non-metastatic breast and evaluated by the RSS scale in the 6 months to 5 years following the end of treatment - as in the case of our study - showed the existence of sexual problems following the experience of breast cancer which approach those found in our work: sexual desire was affected in 60% of women, a decrease in the ability to reach orgasm in 51% of cases, 38% of women reported a fear of sexual intercourse and 29% of patients had not had sexual intercourse during the two weeks preceding the interview [22]. In the Moroccan study, where the population is socio-culturally similar to ours, conducted on 80 patients with breast cancer, 62% of the patients included declared that the cancer affected their femininity, dyspareunia constituted 32% of cases and 17% of women saw their marital status change [23].

Sexual Disorders and Socio-Demographic Factors

Age

Studies that compare the experience of breast cancer in young or older women report varying results [24]. Young women may have more sexual difficulties with a diagnosis of breast cancer [25]. For them, the experience of breast cancer and its treatment is difficult to accept: the combination of changes in body image and premature loss of sexual function associated with infertility and concern for their survival long enough to carry their children into adulthood [26]. Studies show that older women suffer more from vaginal dryness and pain on penetration after breast cancer [27]. Women who do not have sex or who are unsatisfied with their sexual relationships after breast cancer are often found above the age of 55 [28].

In our study, age was a determining factor. Indeed, a significant difference found in relation to sexual fear which was greater and sexual frequency which was lower in the sub-population aged 30 to 39 compared to the rest of the population with respectively $p = 0.003$ and $p = 0.039$. This can be explained by a number of reasons, including changes related to hormone treatment, vaginal dryness, dyspareunia, anxiety and stress about her fertility and body image.

Professional Activity

We did not find any correlation between the professional activity of our patients and their partners and sexual disorders. The majority of studies find no relationship between occupation and sexual problems in breast cancer patients [17, 20, 21]. An Iranian study of 150 women with genital cancers including 108 women with breast cancer reported that there was a significant correlation between sexual functioning and occupation [29]. Another study showed that the return of patients to their social and professional life is associated with problems of social, professional, family and marital rehabilitation. This can have a negative impact on their sexual relations [30].

Sexual Disorders and Clinical Factors

All our patients had a better prognosis since women with metastatic cancer were excluded. It has been proven that patients with a better prognosis experience fewer negative behaviors and poor perceptions of their individual capacities and their living environment [31]. Among our results of this study, there is no relationship between the sexual disorders and the stage of the disease (TNM stage). In accordance with the results of this study, the results of the study in southern Tunisia conducted on 50 women in remission from breast cancer which showed that there was no significant relationship between sexual satisfaction in women and the stage of the disease [32]. Similarly, in our patients, menopausal status does not present a predictive factor. Most studies find no correlation between menopausal status and sexual problems in cancer patients [20, 21, 32].

Sexual Disorders and Therapeutic Factors

Surgery

The breasts are an erogenous zone, both symbolic and physiological, which can be strongly sexually invested [33]. Caressing the breasts can increase sexual desire, and in some women even cause an orgasm [34]. The surgery is therefore experienced as particularly mutilating, especially in the case of mastectomy [15]. In our study, breast surgery, whether conservative or radical, had no impact on the sexual life of our patients as assessed by the RSS. Several studies about the interference of breast surgery on the relationship of the couple but the results are divergent. Some studies have noted that patients who have had a mastectomy have more sexual problems than those who have had a lumpectomy [28, 35, 36]. Mastectomy presents itself as a mutilating surgery leading to a decrease in self-esteem which reflects on with satisfaction and sexual desire [37, 38]. AL-Ghazal et al, [39]. Prove that women who have had a mastectomy feel less attractive. One study showed no observed difference beyond six months after surgery [40]. Nevertheless, other studies, like our case, have found that the type of surgery does not intervene as an element that can cause sexual disorders [41, 42]. These results are consistent with those noted by research in northern, southern and central Tunisia [20, 21, 32]. Regarding breast reconstruction, some believe that it facilitates the professional life and social relations of women [43]. A Japanese study compared groups of patients who underwent mastectomy, skin-sparing mastectomy, or breast-sparing mastectomy plus immediate breast reconstruction with women who underwent radical mastectomy and women who underwent surgery conservative breast. Greater satisfaction and better body image were observed in those who underwent breast reconstruction and breastfeeding preservation, and less satisfaction and worse body image were observed in the radical mastectomy group [44]. In our series, none of our patients had breast reconstruction.

Chemotherapy

It is difficult to distinguish between the effects of conventional chemotherapy and those of hormonal treatments on the pathophysiological level [45]. Chemotherapy has several side effects including digestive disorders, weight gain, fatigue and alopecia but above all its impact on ovarian function, it can result in amenorrhea which can lead to permanent early menopause [9, 46]. Quality of sexual life, this chemo-induced menopause can be the cause of sexual dysfunction comparable to that found in healthy women who have naturally menopausal [9]. In addition, women who received treatment with chemotherapy develop more sexual disorders than those who received therapy without chemotherapy [47]. These women suffer from sexual difficulties on several parameters such as libido, reduced sexual desire, lubrication, dyspareunia and vaginal dryness [48, 49].

All of our patients had received adjuvant chemotherapy, which is considered in the literature to be one of the major predictors of sexual disorders [50].

Hormone Therapy

In the context of evaluating the interference of hormone therapy on the quality of sexual life, in our patients, we found a significant difference between these two groups. These results are consistent with the results reported by the literature which show that, on the one hand, young women, affected by a rapid and early menopause following hormonal treatment, on the other hand, the reappearance of climacteric signs of menopause in already menopausal women, are as many daily discomforts, the appearance of hot flashes, vaginal dryness, disturbances of their sleep and in the long term of factors having a negative effect on the quality of sexual life [51]. Some authors prove that women on hormone therapy retain their sexual activities. Therefore, the continuity of the sexual relationship does not mean the absence of problems in sexuality, but may just be compliance with a social duty of women to meet the sexual needs of the husband under the concept of "sexual obedience" [32, 52]. On the contrary, several studies comparing women on hormone therapy with women without this treatment [20, 27, 41] have shown that this type of treatment does not affect sexual relations. They concluded that hormone therapy causes side effects such as itching or vaginal irritation which does not therefore seem to suggest an overall alteration in the sexuality of patients [20].

Radiation Therapy

In our work, radiotherapy was not correlated with sexual disorders. The analysis of the literature shows that women treated by radiotherapy often experience subjective signs such as fatigue, possible pain in their breast and arm and changes in breast volume and skin irritation. These sensations can have a negative effect on their sexuality [53]. Tattoos present indelible marks, which always remind women of their experience of cancer, and which can threaten their sexual life, again the daily exposure of the breasts during radiotherapy leading to them no longer being observed as sexual organs [42]. In addition, sex life also goes through good heart and lung function, but radiotherapy can break down this function, so may be the cause of long-term sexual dysfunction [54]. For this, new irradiation techniques have been developed for less toxicity [55].

Targeted Therapies

The evaluation of sexuality in our patients did not reveal any correlation between sexual disorders and treatment with Trastuzumab. Regarding sexuality, few data are available for targeted therapies. Patients of both sexes treated for breast cancer and under targeted molecular therapies can have sexual disorders and have an impact on the life of the couple [56].

Sexual Disorders and Body Image

The concept of "body image" is defined as a self-representation that arises "at the crossroads of the body and the psyche; it covers the permanence of the self in space, in time and in relations to the world" [57]. It is comprised of perceptions, representations, feelings and attitudes, serves to balance and stabilize life. It represents the basis of identity [58].

The breasts play a preponderant role in the life of the woman, stimulating erotic, and symbol of beauty, seduction and motherhood. They will often help the woman to win the source of desire. Cancerous conditions of the breasts can upset her body image, as well as her treatments, for example surgery can mutilate the breast, mastectomy is both an attack on bodily integrity and on the image of the body as a whole [20]. For this the woman will try to accept this new image and adapt to these changes but these changes can cause phycological reactions and sexual repercussions.

Moreover, in our series, the alteration of body image significantly increased the prevalence of sexual fear.

Overall, women in our population have maintained a preserved body image. In the southern Tunisian study, the mean QLQ-BR23 body image score was 47.7% and it would indicate an altered body image, but its alteration had no significant impact [32]. On the subject of sexuality. Our results were comparable to the Tunisian study where the image was kept, but it differs from another Tunisian study, which showed a prevalence of 45% of women with a disorder of the body picture [20, 59].

Conclusion

Breast cancer is the most common cancer in women in Tunisia. It is a public health problem due to its frequency, severity and physical, social and psychological impact. With scientific progress, the prognosis is increasingly improved by various short-term and long-term treatments. Nevertheless, the trauma of being diagnosed and treated for breast cancer remains a huge shock that can turn the patient's life upside down and lead to major sequelae in all areas of life, particularly sexual influences. The care of a patient with breast cancer not only seeks to cure her, but also to help her maintain a normal emotional and sexual life, if possible better than before the disease. Our work aims to evaluate sexuality in patients treated for non-metastatic breast cancer in remission during surveillance. Overall, the image of the body and its different dimensions seems to be preserved in our patients. In our series, the alteration of body image significantly increased the prevalence of sexual fear (P=0.011). In our study, sexuality is affected in a more or less significant number of our patients in remission of breast cancer. Sexuality remains an important aspect in life that must be protected. Nevertheless, given the seriousness of this pathology, recovery, recurrence-free survival and overall survival remain the major objectives for women with breast cancer, as well as for the caregiver. In addition, many women report a lack of information about the impact of cancer and its treatments on their sex lives.

• Appendix 1: Data collection sheet

Sexuality and breast cancer

Data collection sheet

Questionnaire date: …… /……/2018 Sheet n° :…….

Current age: …….. Age au moment de diagnostic : ……...

Origin: 1- Rural 2-Urban /__ /

Level of education: 1- Illiterate 2-Primary 3-Secondary 4-University /__ /

Level of education: 1- Illiterate 2-Primary 3-Secondary 4-University /__ /

5-Retired 6-Other, specify:……

Current activity: 1- return to work 2- sick leave /__ /

Level of education of the husband: 1- Illiterate 2-Primary 3-Secondary 4-University /__ /

Husband's profession: 1-No profession 2-Worker 3-Civil servant 4- Senior manager /__ /

5-Retired 6-Other, specify: ……

Number of children:/__ / /__ /

Sterility: 1- No 2- primary 3-secondary /__ /

Living conditions: 1-alone 2-with the big family /__ /

Menopause: 1-Yes 2-No /__ /

If yes: age of menopause: /__ / /__ /

Amenorrhea CT: 1-Yes 2-No /__ /

Stade TNM :

T 1-Tx 2-Tis 3-T1 4-T2 5-T3 6-T4a 7-T4b 8-T4c 9-T4d /__ /

N 1-Nx 2-N0 3-N1 4-N2 5-N3 /__ /

Surgical treatment: 1-Yes 2-No /__ /

Type of intervention: 1-conservative 2-radical /__ /

Breast reconstruction: 1-Yes 2-No /__ /

Castration: 1-Yes 2-No /__ /

Chemotherapy: 1-Yes 2- No /__ /

Tolerance: 1-Bad 2-Average 3-Good /__ /

Radiotherapy: 1-Yes 2-No /__ /

Tolerance: 1-Bad 2-Average 3-Good /__ /

Tolerance: 1-Bad 2-Average 3-Good /__ /

Si oui : Type : 1-TAM 2-AA 3-TAM+AA /__ /

In progress: 1-Yes 2-No /__ /

Tolerance: 1-Bad 2-Average 3-Good /__ /

Herceptin: 1-Yes 2-No /__ /

In progress: 1-Yes 2-No /__ /

Tolerance: 1-Bad 2-Average 3-Good /__ /

Appendix 2: The RSS scale (Relationship and sexuality):

This scale consists of 19 items distributed as follows:

- ✓ 5 items defining the "sexual dysfunction" dimension and which are items 2, 3, 4, 11,12,
- ✓ 3 items corresponding to the "sexual frequency" dimension and which are items 8, 13,16,
- ✓ 2 items forming the "sexual fear" dimension and which are items 9 and 10, 9 additional items related to sexuality: 1.5, 6, 7.14, 15.17, 18 and 19.

The scores for each item vary from (0 to 3) or from (0 to 4). An overall average score is obtained by calculating the average of all the answers. An average score was also calculated for each dimension and for each item studied separately. These average scores allow, during the analytical study, the comparison of the sub-groups.

We used a version of the RSS questionnaire translated into Arabic. For each item, we considered that sexuality is negatively affected for the following values:

Sexual dysfunction: **score global pathologique ≥ 13**

- Item 2 : score de 2 à 3
- Item 3 : score = 2
- Item 4 : score =2
- Item 11 : score = 3
- Item12 : score =3

Sexual frequency: global pathological score ≤ 4

- Item 8 : score ≤ 2
- Item 13 : score ≤ 2
- Item 16 : score = 0

Sexual fear: overall pathological score of 4 to 8

- Item 9: score from 2 to 4
- Item10: score from 2 to 4

The other items: pathological if

- Item 1: score = 0
- Item 5: score from 0 to 2
- Item 6: score from 3 to 4
- Item 7: score from 0 to 2
- Item 14: score = 0
- Item 15: score from 3 to 4

Appendix 3: The BESAA (Body-Esteem Scale for Adolescents and Adults)

It is a body image esteem measurement scale for children under 18 developed by B.K Mendelson in 1982.

It was modified and validated for the assessment of adolescents and adults in 1997. It comprises 23 items grouped into 3 dimensions:

- Appearance perception: BE-appearance (1, 6.7*,9*,11*,13*, 15, 17*,21*,23).
- Satisfaction with weight: BE-weight (3.4*, 8, 10, 16.18*,19*,22).
- The positive evaluation attributed to others: BE-attribution (2, 5, 12, 14,20).

Each item is scored on a 5-point scale ranging from 0 to 4. The asterisk denotes items whose scores should be reversed (0=4, 1=3, 2=2, 3=1, 4=0).

The score ranges from 0 to 92 and has only a dimensional value. The higher the score, the better the body image esteem.

We used a version of the BESAA questionnaire translated into Arabic.

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