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The Assessment of Sexuality in Patients Treated for Breast cancer

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Abstract: The prognosis of breast cancer has significantly improved in recent years thanks to advances in therapeutic options. Quality of life is increasingly recognized as a fundamental criterion in evaluating treatment outcomes. This highlights the particular impact on sexuality. Our objective is to evaluate the sexual well-being of Moroccan individuals undergoing treatment for non-metastatic breast cancer. This is a retrospective study involving a series of 230 sexually active patients treated for breast cancer at the Radiotherapy Department of the National Institute of Oncology in Rabat between January 1, 2022, and July 31, 2022. Sexual function was assessed during the end-of-treatment consultation using the Relationship and Sexuality Scale (RSS).The mean age of the patients was 47.24 years with a range from 32 to 65 years .Surgical treatment was radical mastectomy in 44% of instances, conservative lumpectomy was performed along with axillary lymph node dissection in 56% of cases.. The majority of patients (85.2%) received chemotherapy. More than half of the participants (71%) received adjuvant hormone therapy. Hormone therapy consisted of tamoxifen in 67.3% of cases and aromatase inhibitors in 32.7%. In terms of sexual dysfunction, more than half of the patients (61%) reported impaired sexual functioning. Specifically, the frequency of sexual intercourse and sexual desire (RSS 3 and RSS 4) decreased in 54% and 43% of our patients, respectively. In 65% of patients (measured by RSS 8 and RSS 13), dissatisfaction was noted concerning the emotional relationship dynamics within the couple. Regarding apprehension regarding sexual intercourse, 23% of patients reported experiencing such fear. Therapeutic management appears to have an impact on sexual function in patients with breast cancer. It is important to consider these disorders during management given their frequency and their impact on quality of life, even remotely from treatment and in the absence of any signs of disease progression.

Keywords:- *Breast Cancer, Sexuallity, Treatment.*

I. INTRODUCTION

Breast cancer represents a significant health concern worldwide. As per the World Health Organization (WHO), several treatment strategies are used for breast cancer: tumor-removing surgery such as lumpectomy or mastectomy, chemotherapy, radiotherapy, and finally hormone therapy. Literature data show the potential effects of each of these treatments on the quality of life and sexual well-being of patients, whether in the short or long term, are considerable. However, the specific impact of these treatments on sexuality remains insufficiently explored among Moroccan patients.

The issue of sexuality becomes even more prominent in a couple facing breast cancer, which can disrupt its balance and challenge its norms. With a significantly improved prognosis for the disease and an increasingly significant concern for the quality of life of patients and their loved ones, breast cancer and sexuality are no longer seen as an oxymoron: treating a cancer patient is not just about relieving their physical suffering, but also about helping them adapt to the reality of their illness and protecting their emotional, relational, and sexual life. Hence, this study was undertaken to evaluate how treatments for non-metastatic breast cancer affect the sexual well-being of Moroccan patients.

II. MATERIALS AND METHODS

This is a retrospective descriptive and analytical study conducted at the National Institute of Oncology in Rabat, between January 1, 2022, and July 31, 2022.

Our target population consisted of sexually active patients undergoing treatment for non-metastatic breast cancer. 230 patients were included. Patient recruitment was carried out at the end-of-treatment consultations. We included all sexually active patients with histological confirmation of breast cancer and treated with adjuvant radiotherapy who provided informed oral consent to participate in the study. We excluded from the study all non-autonomous patients and those with severe neurological or cognitive diseases.

Data collection was conducted after obtaining consent using a pre-established questionnaire in the Arabic language. For the study, a data collection form was filled out for each patient, which included: Sociodemographic characteristics of the patients and their partners (age, place of residence, level of education, and occupation for both the patient and her spouse). Clinical data (menopausal status, tumor characteristics: TNM stage) and therapeutic data (surgical treatment (type, breast reconstruction), chemotherapy (type, duration), hormone therapy (type,

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duration)) were collected using exploitation forms from computerized medical records in the ENOVA system.

The evaluation of sexuality was conducted utilizing the RSS (Relationship and Sexuality Scale). This scale (RSS) consists of 19 items distributed as follows:

- Five items defining the "sexual dysfunction" dimension: items 2, 3, 4, 11, 12.
- Three items exploring the "sexual frequency" dimension: items 8, 13, 16.
- Two items forming the "sexual fear" dimension: items 9 and 10.
- Nine items pertaining to sexual aspects: items 1, 5, 6, 7, 14, 15, 17, 18, and 19.

Each item is scored on a scale ranging from 0 to 3 or from 0 to 4. A comprehensive average score is derived by computing the mean of all responses. Furthermore, an average score is computed for each dimension and each item individually. These average scores facilitate subgroup comparisons during analytical investigations. Regarding each item, negative impacts on sexuality were determined under specific conditions:

➢ *Sexual Dysfunction*

A pathological condition is indicated by a global score of ≥ 13. For Item 2, a score ranging from 2 to 3 signifies dysfunction. Item 3 and Item 4 both denote dysfunction with a score of 2, while Item 11 and Item 12 indicate dysfunction with a score of 3.

➢ *Sexual Frequency*

A pathological condition is indicated by a global score of ≤ 4. For Item 8 and Item 13, dysfunction is marked with a score of ≤ 2, whereas Item 16 denotes dysfunction with a score of 0.

➢ *Sexual Fear*

A pathological condition is indicated by a global score ranging from 4 to 8. Item 9 and Item 10 signify fear with a score ranging from 2 to 4.

Other items are deemed pathological under the following circumstances:

- Item 1 denotes dysfunction with a score of 0;
- Item 5 indicates dysfunction with a score ranging from 0 to 2;
- Item 6 signifies dysfunction with a score ranging from 3 to 4;
- Item 7 denotes dysfunction with a score ranging from 0 to 2;
- Item 14 denotes dysfunction with a score of 0;
- Item 15 signifies dysfunction with a score ranging from 3 to 4.

Data entry and analysis were conducted using SPSS software (version 21) and presented in tabular form. Statistical tests employed included the t-student test for comparing two means, ANOVA for comparing multiple means, and bivariate correlation for comparing quantitative variables. A p-value < 0.05 was considered statistically significant.

For ethical considerations ,we explained the purpose of our study, its purely scientific nature, and the content of the questions to the patients before data collection. Similarly, they were informed about the anonymous nature and confidentiality of the information collected.

III. RESULTS

The average age of the patients was 47.24 years, ranging from 32 to 65 years. Additionally, 83% of the patients had received education,54% had a low socioeconomic status, 53% were unemployed, 87% were married, and 94% had family support. A majority of the participants, accounting for 52%, were in menopause. The T2N1M0 stage of the TNM AJCC 8th edition 2018 breast cancer classification was the most predominant (T2: 53%; N1: 64%). Invasive carcinoma was the most common histological type (82%).

Surgical treatment was radical mastectomy in 44% of cases and partial mastectomy with removal of axillary lymph nodes in 56% of cases. The majority of patients (85.2%) received chemotherapy. The entire population received adjuvant radiotherapy. More than half of the participants (71%) received adjuvant hormone therapy. Hormone therapy consisted of tamoxifen in 67.3% of cases and aromatase inhibitors in 32.7%.

In terms of sexual dysfunction, a majority of patients (61%) reported impaired sexual functioning. Specifically, the frequency of sexual intercourse and sexual desire (RSS 3 and RSS 4) decreased in 54% and 43% of our patients, respectively. 65% of patients (as indicated by RSS 8 and RSS 13) expressed dissatisfaction with the emotional dynamics within their romantic relationship. Concerning the dimension of anxiety related to sexual intercourse, 23% of patients acknowledged experiencing fear in this regard.

Regarding the patients' knowledge about the subject, the vast majority of participants (91%) stated 23% of patients reported not receiving information regarding the effects of breast cancer on sexual relationships (RSS1).More than half of the patients (59%) felt less sexually attractive, with 42% experiencing vaginal dryness. The overall score for the 3 dimensions of body image was 52.3, with a minimum of 32 and a maximum of 70. The relationship between sexual disorders and sociodemographic parameters is studied in Table 1.

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Table 1: Relationship Between Sexual Disorders and Sociodemographic Parameters in a Group of 230 Women with Breast Cancer after Treatment and Follow-up at the National Institute of Oncology

Variables	Sexual Disorders					
Sociodemographic Parameters	**Sexual dysfunction**	**P**	**Frequency sexual**	**P**	**Sexual fear**	**P**
Age		0,3		0,1		0,2
30-40 years	12,1±1 5		1±1,3		2±0,5	
41-50 years	9,02±1,8		2±1,8		0,5±0,1	
51-60 years	11,2±1,2		3,99±1,1		0,41±0,12	
61-70 years	10,5±1,5		8±0,4		1,5±0,5	
Occupation		0,88		0,72		0,2
Unemployed	8±1,2		4±1,8		0,51±0,5	
Worker	6,5±1,5		5,2±1,7		1,53±0,4	
Civil servant	9±2,1		7±2		2,3±0,5	
Senior executive	11,1±2.7		5±3,9		1,3±1,2	

Regarding the analytical study, sexual disorders were not significantly correlated with either age or socioeconomic status.

The analysis of the relationship between sexual disorders and clinical data is summarized in Table 2. We found no significant association between sexual disorders and menopause, tumor size, or lymph node status. Regarding patients' knowledge about the subject, almost all participants (91%) stated that they had not received information about the impact of breast cancer on sexual relationships (RSS 1).

Table 2: Relationship Between Sexual Disorders And Clinical Data In A Group Of 230 Women With Breast Cancer After Treatment And Follow-up At The National Institute of Oncology

Variables	Sexual disorders					
Clinical Data	**Sexual dysfunction**	**P**	**Frequency sexual**	**P**	**Sexual fear**	**P**
Menopause		0,52		0.14		0,68
Yes	8,2±1,1		5,1±0,5		0,9±1,3	
No	9,1±0,3		4,3±0,9		0,71±0,1	
Tumor size (T)		0,19		0,3		0,1
T1	10,1±1,1		6±0,3		2±0,5	
T2	8±0,4		5,9±1,9		0,5±0,17	
T3	11±1,8		3,1±2		2,41±1,2	
T4	6±1,5		4,5±2,4		1,5±0,5	
lymph nodes		0,68		0,54		0,52
N0	11±1,2		12±1,8		0,1±0,2	
N1	14±1		10,5±1,7		0,53±0,3	
N2	5,7±2,1		8±0,8		0,3±0,1	
N3	11,1±0,7		0,3±0,1		1,3±0,4	

The study of the relationship between sexual disorders and therapeutic data is summarized in Table 3. Unlike sociodemographic and clinical data, there was a significant relationship between sexual disorders and therapeutic data. For surgical treatment, there was a significant relationship between the type of surgical treatment offered to the patients and sexual disorders: patients who underwent radical treatment developed significantly more sexual dysfunction and sexual fear compared to patients treated conservatively (p=0.02 and p=0.06, respectively). Regarding chemotherapy, it was observed that patients who received chemotherapy reported more sexual disorders such as decreased sexual frequency (p=0.03) and developed more sexual anxiety and phobia (p=0.04) compared to patients who did not receive chemotherapy.

While hormone therapy showed a significant association with impaired sexual functioning and sexual fear, patients placed on hormonal treatment reported more fear and sexual dysfunction compared to patients with negative Hormonal Receptors (p=0.001 and p=0.06, respectively).

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Table 3: Relationship Between Sexual Disorders and Therapeutic Data in a Group Of 230 Women with Breast Cancer After Treatment and Follow-up at the National Institute of Oncology

		Sexual dysfunction%		p	Frequency sexual%		p	Sexual fearù		p
		Normal	**Altered**	**0.02**	**Normal**	**Altered**	**0.1**	**Normal**	**Altered**	**0.06**
Type of surgery	Mastectomy	37.6	62.4		30.7	69.3		40.9	59.1	
	Tumorectomy	64.3	35.7		33.9	66.1		67.6	32.4	
		Normal	Altered	0.03	Normal	Altered	0.01	Normal	Altered	0.04
Chemotherapy	NO	61.3	38.7		54.9	45.1		68.4	31.6	
	YES	37.8	62.5		30.1	69.9		56.1	43.9	
		Normal	Altered	0.001	Normal	Altered	0.2	Normal	Altered	0.06
Hormone therapy	YES	70.6	29.4		30.3	69.7		67.1	32.9	
	NO	30.1	96.9		33.3	66.7		56.9	43.1	

IV. DISCUSSION

The sexual health of women treated for breast cancer, as well as the impact on their sexual lives, has long been neglected or even completely overlooked in oncology care. Yet, in these patients, cancer and often invasive treatments affect organs with a strong emotional, affective, relational, and symbolic charge. The impact on body image can be significant, complicating the relationship with one's own body and consequently the relationship with others. While it is now known that the couple is generally preserved, the same cannot be said for sexuality. Deeply affected in their femininity and intimacy, patients struggle to maintain or regain their sexual health during and after their therapeutic journey. For about ten years now, the issue of "cancer and sexuality" has emerged from the shadows, and voices are being heard: those of women, couples, who sometimes dare to challenge caregivers, psycho-oncologists, sexologists, who in turn relay the voices of the patients.

We found a 61% prevalence of sexual dysfunction in our study population. The literature data align with our findings. According to a Canadian literature review (1), women diagnosed with breast cancer exhibit elevated levels of sexual dysfunction when contrasted with women who are not affected by the disease (2), with a prevalence ranging from 32% to 93% (2,3,4). Our findings paralleled those of a study conducted in the southern region of Tunisia (5) on fifty women who had previously battled breast cancer and were now in remission, using the European Organization for Research and Treatment of Cancer (EORTC) quality of life scales and the QLQ-B23, which revealed sexual impairment with a decrease in sexual intercourse frequency in 53.2% of patients, decreased sexual attraction in 80.9%, and dyspareunia in 42.5%. However, the scale utilized in this study does not encompass all aspects of sexual health. (6) as is the case with the FSFI or the Relationship and Sexuality Scale (RSS) (7).

In the Tunisian study by Zaied (8), performed on a cohort of 100 women diagnosed with breast cancer in Monastir and using the RSS, only 18% had sexual dysfunction, characterized by reduced sexual desire in 47% of women, 61% reported a reduction in their capacity to attain orgasm, decreased sexual appeal in 25%, A diminished occurrence of sexual intercourse was noted in 53% of patients, while 45% reported experiencing dyspareunia. Notably, sexual dysfunction tends to manifest shortly following a breast cancer diagnosis and throughout the treatment process (9).

Various studies have reported a range of sexual disorders in Western women diagnosed with breast cancer commonly experience various sexual issues, including dyspareunia, vaginal dryness, reduced libido, diminished sexual arousal, and challenges in achieving orgasm and sexual dissatisfaction (10). These disorders have also been observed in Moroccan, Turkish, and Iranian women (11,12,13). Regardless of its origin and socio-cultural conception of sexuality, a woman affected by breast cancer may experience a significant upheaval in her sexual life, which impairs her quality of life. Sexual dysfunction linked to the experience of cancer is multifactorial. Some authors have cited rural origin (8), age (14), anxiety-depressive disorder, and the type of treatment (2,10) as contributing factors.

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

Through the literature, several studies have explored the influence of cancer therapy on sexual well-being and sexual disorders have been reported. Authors have been able to identify some predictive factors for a more or less harmonious sexuality (15). Almost half of our patients (61%) had their sexual life affected by the disease. Indeed, the frequency of intercourse, sexual desire (RSS3 and RSS 4), and the ability to achieve orgasm (RSS12) decreased in 54%, 43%, and 54% of patients, respectively. Comparing our results to those observed in Ellouze's study, we find that in the latter, the prevalence of sexual dysfunction can reach 75% of cases. 56% of women experienced a decline in sexual desire, while 60% reported reduced sexual arousal and difficulty achieving orgasm in 59% (16). These values are similar to those found in our study, except for a higher prevalence of sexual dysfunction in Ellouze's study compared to ours. In our patient cohort, 65% expressed discontentment with the quality of emotional connection within their relationships (as indicated by RSS 8 and RSS

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13).Similarly, a Tunisian study found a change in the sexual function of partners after the diagnosis of breast cancer in 38.3% of cases.

This same study demonstrated the effect of the partner's sexual difficulties on the sexual dissatisfaction of Tunisian women with breast cancer (5). Regarding the dimension of sexual fear, 23% of our patients reported a fear of sexual intercourse. According to a French study conducted on 378 women treated for breast cancer without metastasis and assessed using the RSS scale, 38% of women reported sexual fear, and 29% reported no sexual intercourse in the two weeks preceding the survey (17). In our study, almost all participants (91%) stated they reported a lack of information regarding the effects of breast cancer on sexual relationships (RSS1). This finding aligns with Jeannin's study in 2012, which indicated that healthcare professionals cited barriers to providing information about cancer and accessing psychological support. Therefore, it was necessary not only for the patient to feel the need for information and psychological support but also to request it (18). Regarding the couple's relationship, during the illness, 24% of our patients and their partners experienced emotional distancing (RSS 6). A change in the dynamics of the couple was noted in 68.08% of cases in the study by Mnif et al. in 2016 (5). The alteration of the couple's relationship was identified by Ellouze et al. in 2018 as a factor related to sexual dysfunction in women with breast cancer (16).

The management of breast cancer in our population included various treatments appropriate for this disease: radical surgery (mastectomy) was performed in 44% of patients, and conservative surgery (tumorectomy) was performed in 56% of patients. Recent studies suggest the advantage of conservative surgery in terms of its impact on sexuality, indicating mastectomy results in a notable decrease in postoperative comfort with one's partner compared to lumpectomy.(19,20).

In our population, sexual disorders were significantly correlated with surgery. Patients who underwent total mastectomy reported more dysfunction (p=0.02) and more sexual fear (p=0.06) compared to patients treated with tumorectomy. Aerts L et al., explored sexual dysfunction in patients treated with radical and conservative treatment and reported the advantage of conservative surgery in terms of its impact on sexuality, indicating that mastectomy constitutes a physically and psychologically violent step and consequently leads to a significant increase in sexual disorders (21).

All treatments for breast cancer can potentially cause sexual dysfunction, with chemotherapy being the most implicated. It frequently leads to side effects such as digestive disturbances, alopecia, or weight gain. Additionally, chemotherapy can result in chemically induced ovarian insufficiency and consequently sexual disturbances comparable to those reported by healthy menopausal women (22).

Chemotherapy was prescribed for 85.2% of patients. Several studies have confirmed the impact of chemotherapy on sexuality, as it induces prolonged amenorrhea, vaginal dryness, decreased desire, sexual arousal, and difficulty achieving orgasm. Younger women are more likely to develop sexual dysfunctions due to physical and psychological consequences (23,24).

These literature findings are consistent with our results, as sexual disorders were significantly correlated with chemotherapy. Patients who received chemotherapy, constituting over 80% of cases, presented more sexual disorders compared to those who did not receive chemotherapy. Specifically, patients who underwent chemotherapy experienced more dysfunction (p=0.03) and sexual fear (p=0.04) compared to those who did not receive chemotherapy. A Chinese study published in 2021 by Aiying Qi et al. demonstrates that chemotherapy, through its side effects such as prolonged amenorrhea and vaginal dryness, induces sexual dysfunction (25).

Our results indicate that the majority of participants (71%) received adjuvant hormone therapy, and 34.6% of them have not yet completed their treatment. Furthermore, two-thirds of women tolerated their hormonal treatment well. According to Fourati et al., hormone therapy has been associated with difficulties in arousal, orgasm, and dyspareunia (26).

The literature indicates that hormone therapy works by reducing the growth of cancer cells by preventing the body from producing certain hormones. This hormone therapy can impact patients' sexual lives owing to its side effects such as fatigue, loss of libido, nausea, and vomiting. By using hormone therapy as a treatment for their cancer, most women are able to experience pleasure and achieve orgasm while undergoing this therapy. However, this treatment sometimes induces menopause, which is not necessarily permanent, and consequently vaginal dryness, which is a side effect that may affect sexual pleasure (27).

In the same context, Baumgart J. et al. explored the impact of hormone therapy on sexuality by comparing sexual disorders among patients receiving hormone therapy and patients with hormone receptor-negative tumors not receiving hormone therapy. The group of patients treated with either aromatase inhibitors or tamoxifen presented more sexual disorders compared to patients with hormone receptor-negative tumors not receiving hormonal treatment. This aligns perfectly with our results, as our findings indicate that hormone therapy was significantly associated with sexual dysfunction, and our patients undergoing hormone therapy reported more fear (p=0.06) and sexual dysfunction (p=0.001) compared to patients with hormone receptor-negative tumors.

Treatments are perceived by women as an assault on their physical integrity. They affect how women perceive and conceive their bodies. The influence of cancer and its therapies on sexual wellbeing varies from person to person. Sexual desire often diminishes with increased stress conditions.

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V. CONCLUSION

Breast cancer is indeed a major health issue that is increasingly prevalent in our society. Therapeutic management can affect the sexual function of patients. It is crucial to consider these sexual disorders in breast cancer management due to their frequency and impact on quality of life. Therefore, Considering the communication gap between medical professionals and breast cancer patients regarding sexual concerns, it's advisable to implement educational programs highlighting the significance of addressing sexuality in this patient population. By incorporating a more holistic approach to breast cancer management, which includes addressing the sexual needs and patients' well-being, we can improve their overall well-being and satisfaction with their treatment. This requires increased awareness, better communication between healthcare professionals and patients, as well as appropriate training to address these delicate issues effectively and empathetically.

REFERENCES

[1]. Male DA, Fergus KD, Cullen K. Sexual identity after breast cancer:sexuality, body image, and relationship repercussions. Curr OpinSupport Palliat Care 2016;10(1):66—74.

[2]. Lee M, Kim YH, Jeon MJ. Risk factors for negative impacts on sexualactivity and function in younger breast cancer survivors. PsychoOncol 2015;24(9):1097—103.

[3]. Schover LR, Baum GP, Fuson LA, Brewster A, Melhem-BertrandtA. Sexual problems during the first 2 years of adjuvanttreatment with aromatase inhibitors. J Sex Med 2014;11(12):3102—11.

[4]. Raggio GA, Butryn ML, Arigo D, Mikorski R, Palmer SC. Prevalenceand correlates of sexual morbidity in long-term breast cancersurvivors. Psychol Health 2014;29(6):632—50.

[5]. Leila M, Nada C, Kais C, Jaweher M. Sexuality after breast can-cer: cultural specificities of Tunisian population. Pan Afr Med J2016;25.(1).

[6]. Maiorino MI, Chiodini P, Bellastella G, Giugliano D, Esposito K. Sexualdysfunction in women with cancer: a systematic review withmeta-analysis of studies using the female sexual function index.Endocrine 2016;54(2):329.

[7]. Berglund G, Nystedt M, Bolund C, Sjödén PO, Rutquist LE. Effectof endocrine treatment on sexuality in premenopausal breastcancer patients: a prospective randomized study. J Clin Oncol2001;19(11):2788—96.

[8]. Zaied S, Ben Fatma L, Laadhari A, Boudegga MZ, Hochlef M,Chabchoub I, et al. Étude de la sexualité chez les femmestunisiennes en rémission complète d'un cancer du sein nonmétastatique : à propos de 100 femmes. Bull Cancer 2013;7:689—96.

[9]. Emilee G, Ussher JM, Perz J. Sexuality after breast cancer: a review.Maturitas 2010;66(4):397—407.

[10]. Castelo ARP, Oriá MOB, Chaves AFL, Bezerra KC, Fernandes AFC,Vasconcelos CTM, et al. The impact of breast cancer on femalesexuality: an integrative literature review. Glob J Health Sci2017;9(5):180.

[11]. Ouahbi H, El'emrabet FZ, Amaadour L, Benhami M, Sy O, Benbra-him Z, et al. Sexuality and quality of life of the young womanwith breast cancer in a Moroccan context: experience of themedical oncology department CHU Hassan II FEZ. The Breast2017;32:S86.

[12]. Alacacioglu A, Ulger E, Varol U, Yildiz I, Salman T, Bayoglu V, et al.Depression, anxiety and sexual satisfaction in breast cancerpatients and their partners-izmir oncology group study. AsianPac J Cancer Prev 2014;15(24):10631—6.

[13]. Shandiz FH, Karimi FZ, Rahimi N, Abdolahi M, Anbaran ZK, Gha-semi M, et al. Investigating sexual function and affecting factorsin women with breast cancer in Iran. Asian Pac J Cancer Prev2016;17(7):3583—6.

[14]. Boquiren VM, Esplen MJ, Wong J, Toner B, Warner E, Malik N. Sexualfunctioning in breast cancer survivors experiencing body imagedisturbance. Psycho Oncol 2016;25(1):66—76.

[15]. This P, Lachowsky M. Après un cancer gynécologique, comment bien vivre sa sexualité?. Oncologie. 1 avr 2008;10(4): 250-3.

[16]. Ellouz F, Marrakchi N, Raies H, Masmoudi S, Mezlini A, M´rad MF. Dysfonction sexuelle chez 100 femmes tunisiennes atteintes d´un cancer du sein. Sexologies. 1 janv 2019;28(1): 43-8.

[17]. Brédart A, Dolbeault S, Savignoni A, Besancenet C, This P, Giami A *et al*. Prevalence and associated factors of sexual problems after early-stage breast cancer treatment: results of a French exploratory survey. Psychooncology août 2011;20(8): 841-50.

[18]. Jeannin N, Pelletti CL D. La profession infirmière face à l´annonce en cancérologie?: place et enjeux de la dimension psychologique. Prat Organ Soins. 24 oct 2012; 43(3): 177-85.

[19]. Kwait RM, Pesek S, Onstad M, Edmonson D, Clark MA, Raker C *et al*. Influential forces in breast cancer surgical decision making and the impact on body image and sexual function. Ann Surg Oncol. oct 2016;23(10): 3403-11.

[20]. Cortés-Flores AO, Vargas-Meza A, Morgan- Villela G, Jiménez-Tornero J, del Valle CJZF, Solano-Genesta M *et al*. Sexuality among women treated for breast cancer: a survey of three surgical procedures. Aesthetic Plast Surg.déc 2017;41(6): 1275-9.

[21]. Aerts L, Christiaens MR, Enzlin P, Neven P, Amant F. Sexual functioning in women after mastectomy versus breast conserving therapy for early-stage breast cancer: a prospective controlled study. Breast. 2014 Oct;23(5):629-36. doi: 10.1016/j.breast.2014.06.012. Epub 2014 Jul 28. PMID: 25082211.

[22]. Jankowska M. Sexual functioning in young women in the con-text of breast cancer treatment. Rep Pract Oncol Radiother2013;18(4):193—200.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUN162

[23]. Malinovszky KM, Gould A, Foster E, Cameron D, Humphreys A, Crown J *et al*. Quality of life and sexual function after high-dose or conventional chemotherapy for high-risk breast cancer. Br J Cancer. 18 déc 2006;95(12):1626-31.
[24]. Ganz PA, Desmond KA, Belin TR, Meyerowitz BE, Rowland JH. Predictors of sexual health in women after a breast cancer diagnosis. J ClinOncol. août 1999;17(8): 2371-80.
[25]. Qi A, Li Y, Sun H, Jiao H, Liu Y, Chen Y. Incidence and risk factors of sexual dysfunction in young breast cancer survivors. Ann Palliat Med. 2021 Apr;10(4):4428-4434. doi: 10.21037/apm-21-352. PMID: 33966393.
[26]. Fourati A, Louchez M-M, Fournier J, Gamoudi A, Rahal K, El May M-V *et al*. Screening for common mutations in BRCA1 and BRCA2 genes: interest in genetic testing of Tunisian families with breast and/or ovarian cancer. Bull Cancer (Paris). Nov 2014;101(11): E36-40.
[27]. Beck AM, Robinson JW, Carlson LE. Sexual intimacy in heterosexual couples after prostate cancer treatment: what we know and what we still need to learn. Urol Oncol. avr 2009;27(2):137-43.
[28]. Baumgart J, Nilsson K, Evers AS, Kallak TK, Poromaa IS. Sexual dysfunction in women on adjuvant endocrine therapy after breast cancer. Menopause. 2013 Feb;20(2):162-8. doi: 10.1097/gme.0b013e31826560da. PMID: 22990756.