Original Research Article

Lived experiences of sexuality among women undergoing breast cancer treatment at a major cancer center in Ghana

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ABSTRACT

Aim: This study explored the sexuality-related lived experiences of women diagnosed with breast cancer during multimodal breast cancer treatment.
Study design: Qualitative exploratory descriptive design
Place and Duration of Study: Participants were recruited from the Oncology Department of the Komfo Anokye Teaching Hospital, Ghana from March to May 2018.
Methodology: A purposive sampling was used and data was saturated with 10 participants. Data was analysed by thematic analysis.
Findings: Four (4) main themes and 12 subthemes were identified. Breast cancer treatment resulted in reduced sexual desire and strength for sexual intercourse, loss of hair, skin color, weight, breast and self-esteem, as well as loss of money and income on account of high cost of treatment and loss of job.
Conclusion: Addressing sexuality needs of people living with breast cancer is relevant to improving their quality of life.

Keywords: sexuality, breast cancer, body image, palliative care,

1. INTRODUCTION

Globally, breast cancer is the most commonly diagnosed cancer and the major cause of cancer death among women, with an estimated 1.7 million new cases and 521,900 deaths in 2012 [1]. Cancer of the breast accounts for 25% of all cases of cancer and 15% of all cancer-related deaths among women [1]. In developed countries, breast cancer accounts for about 50% of all cases of cancer and 38% of deaths. Rates are generally high in Northern America, Australia, New Zealand, and Northern and Western Europe; intermediate in Central and Eastern Europe, Latin America, and the Caribbean; and low in most of Africa and Asia [1].

Breast cancer (BC) has become a major public health concern globally [2]. Breast cancer forms one tenth of all newly diagnosed cancer cases worldwide [3]. Of the new cases of breast cancer, five per cent (5%) occurs in women who are less than 40 years of age [4].

The continuing global demographic and epidemiologic evolutions signal an ever-increasing cancer burden over the next years, particularly in low- and middle-income countries (LMICs). In Nigeria, breast cancer has become the leading female malignancy [5] and a recent study from Nigeria gave an estimate of 500,000 breast cancer new cases annually and more than 40% of women were affected [6].

The annual incidence of breast cancer in Ghana is estimated to be about 26 cases per 100,000 women and mortality rate is about 15 deaths per 100,000 women [7]. Thus, in Ghana, breast cancer is the most prevalent type of cancer among women and the leading cause of cancer-related death among women [8].

Management of breast cancer mostly requires a combination of treatment (multimodal treatment) including surgery, chemotherapy, radiotherapy and hormonal therapy and targeted therapy; with each patient requiring different combination in different sequences for cure or palliation [9].

Women undergoing breast cancer surgery from lumpectomy, mastectomy to breast reconstruction, need information about physical and psychological effects of the treatment [10]. Along with the physical side effects of radiation and chemotherapy, rehabilitation issues of having an implant, libido and sexuality concerns during various stages of breast cancer therapy, menopausal problems and fertility effects of chemotherapy, especially for premenopausal women need to be addressed [11].

The impact of treatment is associated with varied side effects such as changes in body image, with or without breast reconstruction, changes in sexual self-esteem, vulvovaginal atrophy as a result of chemotherapy and or adjuvant hormone therapy, and loss of libido secondary to dyspareunia. These are noted as common in survivors of breast cancer [12].

Women are affected sexually by diagnosis and treatment. Further, psychological pain in confronting the changes in the body, feelings of anger and victimization, depression and a feeling of inadequacy in body image and femininity have been reported by previous studies [13].

Sexuality and sexual functioning is a cardinal domain of health-related quality of life in people living with breast cancer [14]. Young women go through a time in their lives where sexual self-identity has recently matured, their professional obligations are demanding and they bear interpersonal and childbearing expectations, all of which can suffer a devastating turn around with breast cancer diagnosis and its physical and psychological aftermath. Although these women's sexuality and directed interventions have remained largely unaddressed so far, concepts are evolving and treatment options are becoming diversified, chiefly on the field of non-hormonal pharmacological therapy of sexual dysfunction.

There can be issues of reproduction and fertility. Sexual changes that are experienced immediately after chemotherapy may be loss of desire, diminished arousal, and weakened orgasm. According to Aitken &Hossan (2022) much of these problems are caused by psychological distress such as anxiety and fear of rejection rather than actual physical effects alone [15].

People living with breast cancer spend prolonged periods of time working through the treatment phase of the disease. Thus, breast cancer has taken on the form of a chronic impairment. Patients have to move out of the initial survival mode of coping with their cancer to trying to incorporate into their lives the concepts of self-realization [16].

Sexuality encompasses feelings about one's own body, the need for touch, interest in sexual activities, communication of one's needs to a partner, and the ability to engage in satisfying sexual activities [17]. Sexuality of women extends beyond the ability to have intercourse, and includes ideas of body image, femininity, desirability and childbearing capabilities [18]. It has strong emotional, intellectual and sociocultural components. Though all cancers can affect sexuality and intimacy, there are specific concerns for people living with breast cancer.

Unfortunately, the available data on sexuality after breast cancer diagnosis and its treatment is non-specific and most of the studies are retrospective. Concerns of most studies focus on the overall satisfaction with sex or coital frequency; consequently, most experts believe that sexual morbidity in breast cancer patients is widespread, complex, more disruptive, and less identified than had previously been speculated [19]. Early prognosis and advancement in treatment have led to a growing number of survivors of breast cancer [20]. As a result, quality-of-life issues have become a matter of great importance and particular attention must be paid to the sexuality of these women. However, sexuality experience following breast cancer diagnosis appears scanty especially, in developing communities such as Ghana, where cultural and traditional norms frown

on open discussions of sexual issues. Exploring the sexuality-related experiences of womenfollowing breast cancer diagnosis and treatment within the socio-cultural context of Ghana will afford scientific evidence on the phenomenon. It is for this reason that this study seeks to explore the experiences of women diagnosed with breast cancer, with a focus on sexuality.

The aim of the study is to explore the sexuality experiences of women diagnosed with breast cancer during multimodal breast cancer treatment at Komfo Anokye Teaching Hospital Oncology Department, Kumasi Ghana.

2. METHODOLOGY

2.1 Study Design

A qualitative exploratory descriptive design was employed in this study. This design was used to explore, understand and describe the experiences of women undergoing breast cancer treatment regarding sexuality [21]. The design was useful since little is known in the area of sexuality of women undergoing breast cancer treatment.

2.2 Study Setting

The study was conducted at KATH, a tertiary referral hospital with over 1200 beds. The hospital is located in Kumasi which is the capital town of the Ashanti Region of Ghana. The hospital's Oncology Directorate was the outlet for recruitment of study participants. The department is the only national radiotherapy centre in the Kumasi Metropolis that sees and treats people living with cancer. Cancer treatment services are given to clients with malignant tumours and haematological cancers. The centre sees and treats about 575 newly diagnosed patients annually. The highest treated cases at the centre are cervical cancers followed by breast cancers. The treatment modalities available at the unit are chemotherapy, hormone therapy, radiotherapy and brachytherapy. The Department runs a once weekly outpatient clinic for people living with breast cancer.

2.3 Population

The study population consisted of all women who had been diagnosed with breast cancer and were being treated at the Oncology Department. Women ≥18 years who had received breast cancer treatment were included in this study. However, those who were too ill to communicate were excluded.

2.4 Sampling

The number of participants involved in this study were 10. The data reached saturation by the 10th interview as successive participants gave similar responses and no new themes or subthemes were generated. Purposive sampling technique was used to recruit participants who were within the inclusion criteria.

2.5 Data Collection Procedure and Instrument

A semi-structured interview guide was used to collect data through in-depth one-on-one face-to-face interviews. The interview guide contained six (6) open-ended questions which were developed based on the research questions, the objectives of the study and on the literature review. Demographic information were collected before the main interview. The interviews lasted between 45 and 90 minutes and were tape-recorded with the participants' permission.

Firstly, the first author sought the assistance of the charge nurse to identify people living with breast cancer who had undergone various disease directed therapies (surgery, chemotherapy,

radiotherapy, hormonal therapy). The identified patients who met the inclusion criteria were contacted in person during their outpatient department clinic and the purpose of the study as well as its benefits and risks explained to them. Those who agreed to participate were scheduled for an interview at a time and date suitable to them and the first author.

An information sheet was prepared and given to each participant to read and was interpreted to participants who could not read. Those who agreed to participate in the study were asked to sign or thumbprint a consent form. Interviews were conducted by the first author. Field notes were taken to depict aspects of participants' non-verbal communication that were relevant to the study objectives.

2.6 Data Analysis and Management

Identification number was given to each participant based on the order of recruitment. Each participant was assigned a number (P01 to P10) in order of recruitment into the study. The interviews were transcribed in English. Transcript was re-read severally to understand each respondent's perception and experiences and they were coded to form themes and subthemes for analysis. In cases, where a participant responded to a question in a way that fell beyond the scope of the developed coding system, a new code was added. Non-verbal expressions were also analysed from field notes taken during data collection. Data was analysed concurrently with data collection using thematic analysis.

Transcripts were saved on a password-protectedexternal drive to prevent future loss of data. Audiotape and external drive were kept in a safe and confidential place which will be accessible to only the researcher and the supervisors. Measures were employed to store and protect the raw data for at least 5years after publication of study findings.

2.7 Ethics

Ethical approval (ID: CHRPE/AP/284/18) was granted by the Committee on Human Research Publication and Ethics of the Kwame Nkrumah University of Science and Technology. A written informed consent was obtained voluntarily from all participants after the purpose of the study and its benefits, as well as assurance of their confidentiality were explained.

2.8 Limitation

There were differences in their treatment regimen which could have resulted in differences in degrees of sexual dysfunction or displeasure.

2.9 Methodological Rigour

The researchers ensured trustworthiness using the criteria of credibility, dependability, confirmability and transferability. To ensure credibility and dependability of study findings, interviews were coded independently, and compared and discussed by three of the authors. A detailed description of the research setting, methodology and background of study participants has been reported to ensure transferability of study findings. The first author worked closely with study supervisor from the start of the study till the end in order to meet the criterion of dependability. Study findings were discussed with participants during their subsequent reviews to meet the criterion of confirmability.

3. RESULTS AND DISCUSSION

3.1 Description of Study Participants

Ten women were interviewed as participants in this study. Most of the respondents (5/10) were between ages 31-38 years, followed by ages between 40-48 years (4/10), with the least above 50

years (1/10). The married amongst the participants were eight (8), with one (1) divorced and one (1) single. Two of the participants were Muslims and the rest were Christians. Some (6/10) of the participants were formally educated.
Current treatments of participants differed between surgery, chemotherapy and radiotherapy or either on any of the two. One (1) participant in her early thirties had no child while the others had children. At the time of the interview only five of the participants were working. The results shown in Table 1 represent the detailed demographic characteristics of study participants. All the participants could speak Twi (a local Ghanaian language) aside their native languages.

Table 1: Participant's profile

Participant ID	Age (years)	Religion	Marital status	Respondent's Treatment	Occupation	Number of Children	Educational background
P01	37	Christian	Married	Chemotherapy	Unemployed	3	None
P02	48	Christian	Married	Chemotherapy	Reverend minister	3	Tertiary
P03	45	Christian	Married	Surgery	Trader	4	Primary
P04	33	Christian	Married	Hormonal	Trader	2	None
P05	31	Christian	Single	Surgery	Unemployed	None	Primary
P06	40	Christian	Married	Chemotherapy	Public servant	2	High School
P07	37	Christian	Married	Chemotherapy	Farmer	4	Primary
P08	51	Muslem	Divorce	Hormonal	Trader	4	Primary
P09	38	Christian	Married	Chemotherapy	Unemployed	2	None
P10	44	Muslem	Married	Chemotherapy	Farmer	3	None

3.2 Themes and subthemes

Experiences that were common to all the participants as well as distinctive experiences of individual participants are also presented. Using thematic analysis, four (4) main themes emerged from the data and these were: sexuality not a priority, body image, erotic experience, andfinancial challenge. The main themes and their subthemes are shown in table 2. Anonymized verbatim quotations from the participants have been used to illustrate the themes.

Table 2: Themes and subthemes

Themes	Sub themes
Sexuality not a priority	Effect on sexual desire
	Effect on strength for sex
Erotic experience	Loss of libido
	Painful sexual intercourse
	Loss of femininity
	Romantic relationships
Financial Challenge	Loss of job
	High cost of treatment
Body Image	Breast loss
	Hair loss
	Change of skin colour (complexion)
	Weight loss

3.3 Sexuality not a priority

This major theme considers the perceptions of women with breast cancer and sexuality. The perceptions of sexuality following breast cancer diagnosis and treatment varied among

participants as six (6) of the study participants shared different views with respect to the disease and sexuality. Participants described their ideas of how sexuality was affected by changes in sexual desire during treatment. Majority of the women mentioned that, sexuality was not their priority when the treatment and side effects are severe. The subthemes identified were effect on sexual desire and effect on strength for sex.

3.3.1 Effect on sexual desire

It was found that the sexual desire of most (8/10) of the participants was affected in varying degrees ranging between total loss of desire and almost unchanged desire. Thoughts about sexuality were conceived as decreasing during treatment, with some participants having a total loss of sexual arousal. They related it to the troublesome tiredness and feelings from the treatment which were conceived as overruling sexual desire during treatment.

As a 37-year-old woman narrated:

> "Mostly, sexual desire is not there, there is a kind of tiredness instead, maybe a little bit of closeness to my husband sometimes but it doesn't lead to intercourse, I feel I have to get well first"

A 48-year-old woman also had a similar experience:"My main concern is to be cured, and it [sex] is of minor importance…"

3.3.2 Effect on strength for sex

All the women indicated that breast cancer affected their physical and psychological strength during treatment which affected their sexuality. They explained that the physical and psychological energy retained during treatment was consumed by managing daily life, and that thoughts about sexual activity were absent since it was of less priority to them.

As 45-year-woman narrated:

> "It's about getting through this period, then there is no place for… there is no place for it, sexual intercourse, my concentration is in one direction - survival."

A 38-year-old married woman similarly echoed, "I would like to be healed first, healing is what I think of, not it [sex]".

3.4Erotic Experience

Regarding this major theme, the women shared their experiences on their sexual life during treatment. The study revealed sub-themes such as loss of libido, painful sexual intercourse, loss of femininity and romantic relationships. It was realized that the women wallow in pain and anguish as their femininity had been disfigured. All the women apart from two, were not experiencing any change in sexual life.

3.4.1 Loss of Libido

Six (6) women talked about the detrimental effect that chemotherapy treatment had had on their libido and desire for sex. All lamented its loss apart from two women. A 33-year-old married woman experienced loss of libido and diminished arousal with complications, saying

> "My sex drive has gone down significantly and I don't even know how it happened. Nothing triggers it. I sometimes pretend and complain of bodily pains in order to prevent any advances from my husband because I don't enjoy it a bit when he penetrates".

A 31-year-old single woman did not enjoy sex because of her lost feelings. She narrated

> "I have not engaged in sex for a very long time because I don't feel for it. I am like a piece of wood, nothing moves me. Men propose to me but I turn them down because of my situation. It's really worrying my sister, but what can I do"

3.4.2 Painful sexual intercourse

Although all the women had chemotherapy, not all had coital pain during sex. All the women were still receiving treatment at the time of the study and some complained of reduction in vaginal lubrication due to chemotherapy. One of the debilitating side effects was dryness and irritation which made the women uncomfortable. The women reported that they experienced dryness, irritation or both.

A 33-year-old married woman disliked chemotherapy, saying

> "The injection[chemotherapy] has made my vaginal walls so dry causing pain during sex. I detest sex now because what I only enjoy is pain. I wish to stop permanently but I am afraid my husband will go out. Hmm… my sister, it is not easy but I am coping to save the marriage".

A 40year old married woman described what she went through with her first four cycles of chemotherapy;

> "Receiving four cycles of chemotherapy has caused more harm than good to my genitals. I always have sharp pain during intercourse and sometimes feel like pushing my husband away when he penetrates. It is very painful"

She continued to say;

> "My constant complaint of vaginal pain has pushed my husband to the street engaging in indiscriminate sex. My dear, it is really painful to see your husband flirting with other ladies all in the name of sex. It's heartbreaking. [She weeps]"

3.4.3 Loss of Femininity

All the respondents said the alteration or removal of their breast, and loss of bodily hair had been a great distress to them. Some mentioned that the significant change in their body had made their husbands moody and unhappy living in fear that they might leave them. Most women expressed their loss through crying.

A 38-year-old married woman lost weight over her breast removal as a result of her broodiness. She narrated;

> "I feel a part of me is dead. I have lost everything that defines me as a woman to this deadly disease. I don't feel happy at all but life goes on"

A 31-year-old single woman hid herself from neighbours and friends. She lamented;

> "I don't attend meetings and gatherings anymore because the cancer has disfigured me and I feel uncomfortable at such places. I also vomit a lot so I am always indoors. The cancer has shattered my dreams and jeopardized my progress" [she weeps]

3.4.4 Romantic relationships

Five (5) of the women's relationship had not changed since their diagnosis and felt supported by their husbands. The relationship of two women had collapsed following their breast cancer diagnosis. They expressed hope of rejuvenation and nourishment within the shortest possible time. A 45-year-old married woman expressed much joy at the kind of love shown to her by her husband. She said;

> "We are still together as before and having a good time. My husband is so lovely; he always clings to me despite the numerous scars on my body. He always feels happy when I undress before him and even sometimes, he undresses me. I am so proud of him"

A 37-year-old married woman described what transpired between herself and the husband. She expressed it with all joy. She narrated;

> "The love we have for each other still persists. I think my husband copes with me better than most husbands. He has been there for me since I started treatment till date. His love for me is unconditional"

A 51-year-old divorced woman on the other hand, had been neglected by her husband. The husband left her when she needed him the most. She said;

> "My husband left me before I even started radiotherapy, which was very traumatizing at the time. I believe the expensive nature of the treatment made him leave. He was depressed and coping but later gave in on me. [She weeps]"

3.5 Financial Challenge

All the women in the study expressed that the cost of treatment had greatly affected them on account of the high cost of treatment, which led some to use their business capital for treatment with a resultant loss of job. It was realized that the women sought support from spouses, siblings and friends to pay treatment costs.

3.5.1 Loss of Job

Some of the women had lost their jobs in fighting breast cancer. They mentioned that they had used their business capital and returns in the different treatment regimen. One 37-year-old narrated:

> "My husband is jobless so I have footed all the bills from the day I was diagnosed with cancer. I pumped all my cash into the treatment all with the hope to get cured soon but all to no avail. Now I have nothing to live on."

A 38-year-old married woman shared a similar sentiment. She lamented;

> "I am a beverage seller but because of the complications I get from the medication like body weakness, I have stopped and that has had an adverse impact on my finances".

3.5.2 High Cost of Treatment

All respondents mentioned that the drugs were expensive far beyond their imagination. A 45-year-old married woman had to borrow to continue her medication. She narrated;

> "The drugs are very expensive; as a result, it got to a time that I wasn't having a penny on me. I had to borrow from a friend to continue my treatment. Initially, the doctor advised that I should take the dose continuously for the scheduled dates without skipping. But because I wasn't financially sound at that time I couldn't comply. And I think that has affected my recovery rate".

A 38-year-old woman became financially handicapped because of her medication. She echoed;

> "My medications are very expensive and have drained my cash within a space of 9 months. I have spent about GHC 25,000 on labs, medication, chemotherapy and radiotherapy. So, it has not been easy for me at all. Everything is about money"

A 33-year-old woman who received hormonal therapy spent a lot on her illness to facilitate the recovery time and period. She said;

> "The medications and treatment are expensive. Every week I spend GHC 500 on labs and drugs and this has negatively impacted my finances".

3.6 Body Image

Most of the women reported altered body image as one of the adverse effects of cancer treatment, specifically, the effects of chemotherapy, surgery and radiotherapy. These alterations included hair loss, breast loss, change of skin colour (complexion) and weight loss, leading to loss of self-esteem.

3.6.1 Breast loss

Majority (9/10) of the women stated that they experienced low self-esteem when they dressed up. They attributed this to the treatment (chemotherapy and surgery) which were provided as part of their management.

Losing one or both breasts was meaningful for participants because the breast was connected with femininity and beauty and was symbolic of a normal female. They revealed that the removal of their breast has been a big blow to them and a canker to their womanhood.

They expressed worry about this subject as this brings down their confidence when they expose themselves to their husbands and even in their dressing. The women recounted some of the challenges they go through such as difficulty achieving the same breast size during dressing, and fear of one becoming bigger than the other as prosthesis are hard to find.

A 33-year-old married woman, trader narrated;

> "Hmmm I have been affected, my sister. I was proud of two things as a woman, and that was my hair and my breast, and I lost both…I notice a significant change in my body when I stand in the mirror, because one important characteristic of my femininity has been removed and that makes me sad when I reflect on it. Sometimes, I cushion it with handkerchiefs but it doesn't look natural as it used to be."

A 44-year-old married woman, farmer shielded herself from her husband because of the scars. She echoed;

> "I must admit I don't want my husband to touch me on that side of my chest, not that I feel that he will think it's yucky or anything like that, but I just don't want to be that person for him. The disease has devalued and demoralized me."

3.6.2 Hair Loss

With respect to their experience with treatment, all the women spoke about hair loss as a result of chemotherapy and chemotherapy. Participants reported that the most disheartening experience was loss of hair. Though hair loss was expected by most of them, all of them described it as alarming and upsetting, making them feel sexually unattractive leading to loss of interest in sex.

A 31-year-old single woman, unemployed was educated about her hair loss but she did not imagine it to be very sudden. She described her experience as follows;

> "I was counselled by the nurses before the chemotherapy, after taking four cycles all my hair is gone and this has further destroyed the way I look. When I stand in the mirror, I only see a skull with skin on it with no hair which was unlike before. I feel shy to go out without wigs, the injections have really disfigured me".

A 45-year-old woman, trader lost all her hair after three cycles of chemotherapy. She hid herself from people and stopped going to the market. She echoed;

> "All my hair is gone because of the chemotherapy. After the second cycle I went to the salon to wash my hair, as soon as she started washing it came out like cotton. I felt shy and told her I have changed my relaxer and that may have caused the problem. I have never since been there".

A 51-year-old divorced woman, trader has forcefully become an introvert and homemaker due to her circumstances. Her movement is now limited and location specific. She narrated;

> "I overhead a colleague says the treatment could make one bald but I never thought of its sudden onset. All my hair is gone because of the injection. I am unable to attend social gathering of late because of the facial change. My socialization level has gone down and people are raising eyebrows trying to figure out the cause of this sudden change. It hurts to be in this mess".

3.6.3 Change in skin colour

Change in skin colour (complexion) was a major source of worry and sadness for women undergoing breast cancer treatment, the majority of the women expressed worries about the change in their skin colour as a result of chemotherapy and radiotherapy treatment. These changes occurred at exposed areas of the body such as the face, palms and feet and are difficult to hide which is stressing them emphasizing that they are no more attractive to their husbands and also prevented them from going out to social functions such as church and market. This deformity as expressed by some women has jeopardized friendship and distanced them from formal and informal social gathering.

A 33-year-old married woman, trader became darker and her chest was burnt with radiotherapy. She narrated;

> "The machine has burnt my chest and my neck; it has become darker. Anytime I wear a dress I have to put on a scarf to cover it. As for cancer and its treatment, it is not easy at all".

A 48-year-old reverend minister became darker after her cycles of chemotherapy and radiotherapy. She echoed;

> "I was fair and not dark like this. The treatment has destroyed my complexion and appearance. My face, palm and entire body has become black. The treatment even though has been effective as expected but it's now destroying my skin which makes me feel uncomfortable in the eyes of people"

3.6.4 Weight loss

Most of the participants reported weight loss resulting from nausea and vomiting and poor appetite as a result of the treatment that is chemotherapy and radiotherapy given to them. They expressed worry and discomfort about their extreme weight loss which doesn't make them attractive to their husbands.

A 40-year-old public servant expressed how she has lost interest in so many activities including sex. She stated;

> "My energy, enthusiasm and zeal towards certain activities including sex have gone down. My husband and children have been supportive and that of my children. They have been my source of encouragement".

A 37-year-old farmer only roams about her vicinity at night because of her weight loss. She said;

> "Even my husband complained bitterly about my weight loss and from his facial appearance he wasn't happy. I became so disturbed and couldn't eat that very day. In fact, this disease has screwed me up."

4.0 Discussion

Participants in this study felt an alteration in their femininity and emotionally disturbed on account of the changes in their body image. They thus felt sex was not a priority but wished their body image was intact so they could maintain a pleasurable relationship with their spouses. Participants also highlighted the high financial burden associated with breast cancer treatment and effects.

4.1 Experiences and Perception of Breast Cancer patients on Sexuality

The experiences and perception of women diagnosed with breast cancer on sexuality varied among the participants. Majority of the women mentioned that sexuality was not their priority when the treatment and side effects are severe. This finding conforms to the observation made by Ambrósio& Santos, in (2011) that "changes in sexual practice are experienced both due to the physical changes caused by the cancer and its treatment (breast loss, vaginal dryness, pain, discomfort), as well as the social coping with the disease, considering the family impact" [22].

Thoughts about sexuality were conceived as decreasing during treatment, and the participant also described reduced or total loss of sexual arousal. They related it to the troublesome tiredness and feelings from the treatment which was conceived as overruling sexual desire during treatment. This finding corroborates with the observation of Cesnik et al. (2013) following a study of sexual life of women with breast cancer, that the distressing symptoms associated with treatment of breast cancer hinders the enjoyment of a satisfactory sexual life [23].

It was also found that not all the women who are on chemotherapy experience coital pain during sex. However, some of them had reduction in vaginal lubrication, dryness, weight gain, loss of attractiveness to a partner and irritation which they attributed to chemotherapy which made the women uncomfortable. This finding conforms to the study by Wilmoth et al. (2004) that a lack of sexual desire may be attributed to an altered body image, attractiveness to a partner or treatment side effects such as weight loss [24].

Most of the women said alteration or removal of their breast, loss of hair had been a great distress to them and this change in their body had made their husbands moody and unhappy living in fear for their romantic relationships where some said it had collapsed but had hope of rejuvenation. Sheppard and Ely (2008) conducted a study in Australia which affirmed this result by finding that, "affairs have been revealed to experience considerable pressure during breast cancer; it is stated that 25% of breast cancer patients agonized relationship tension, 35% felt their partners to be emotionally unavailable, and 12% reported a separation"[25].

All women in the study were facing financial challenges since the cost of treatment had greatly affected them. Most of them had lost their jobs, business capital and returns in the different treatment regimen of the disease. It was realized that the women were now searching for support from spouses, siblings and friends to pay for treatment and expensive drugs. This finding conforms to a systematic review and meta-analysis by Ehsan et al. (2023) which found that the high cost of treatment of cancer affects patients from low and middle-income countries like Ghana the most, and put people's resources on the verge of collapse [26].

4.2 Effect of multimodal treatment on sexuality of people living with breast cancer

In the study, it was established that all the women spoke about hair loss as a result of chemotherapy and radiotherapy. Participants reported that the most disheartening experience was loss of hair. Though hair loss was expected by most of them, all of them described it as alarming and upsetting, making them feel sexually unattractive leading to loss of interest in sex. Many authors have similarly found that chemotherapy induced hair loss has been largely reported by women diagnosed with breast cancer [27–29].

Hair is a major feature of body image representing life and identity. It plays a significant role in social communication; portraying social class, gender, profession, religious belief, and social or political conviction [29]. However, the initiation of chemotherapy following the diagnosis of breast

cancer causes severe hair loss that negatively affects the body image of women [28, 29]. All the study participants experienced hair loss from chemotherapy. Although the women were informed about potential hair loss prior to chemotherapy, the sudden loss of hair was shocking, upsetting, distressing, and demoralizing because it negatively affected their body image and the ability to groom and socialize.

Studies that evaluated the impact of hair loss on body image revealed that people living with cancer with hair loss experience increased negative perception of body image and decreased self-esteem [29, 31]. In the study by Doumit et al. (2010) in Lebanon, hair loss was described by women as distressing and demoralizing as it their culture requires women to maintain a good and attract look towards men. Thus, hair loss was perceived as a threat to femininity and their self-identity as Lebanese women.

The study also found that the major source of worry and sadness for women undergoing breast cancer treatment was change in skin colour (complexion). The women expressed worries about the change in their skin colour as a result of chemotherapy and radiotherapy treatment. These changes occurred at exposed areas of the body such as the face, palms and feet and are difficult to hide which was stressing them emphasizing that they are no more attractive to their husbands and also prevented them from going out to social functions such as church and market. This 'deformity' as expressed by some women had jeopardized friendship and distanced them from formal and informal social gathering. A study conducted in Rome by Fabbrocini (2012) and Rzepecki et al. (2018) confirm the findings of this study that reported skin reaction as common side effects of chemotherapy and radiotherapy, and its resultant withdrawal from social gathering to avoid the attention of others [32,33].

Weight loss was another significant effect of treatment in the current study. Participants expressed worry and discomfort about their extreme weight loss which doesn't make them attractive to their husbands. This is in line with what Potter, Hami, Bryan, and Quigley (2003) and Hopkinson, Wright, & Corner (2006) found in their study that the most common symptoms of advanced breast cancer are weight loss and loss of appetite [34,35].

Altered body image was one of the adverse effects of the various treatment modalities - chemotherapy, surgery and radiotherapy. Participants had hair loss, breast loss, change of skin colour (complexion) and weight loss, with associated loss of self-esteem. This finding is in line with Helms, O'Hea, & Corso (2008), who observed that women are known to be concerned with their outward appearance, body weight, and body image [36]. According to authors such as Can, Demir, Erol, & Aydiner (2012); Hurk, Mols, Vingerhoets, & Breed (2010); and Hansen (2007), body image incessantly develops and depends on components such as sexual image, occupation, relationship with family or friends, physical appearance, or change in any of these components [31,37,38].

Ahn and Suh (2023) also affirmed this finding that advanced breast cancer and its treatment affect the physical appearance of women. In the current study, body image was a major concern to the women [39]. They were obviously worried about the changes in their bodies as a result of treatment. Treatment with radiotherapy, chemotherapy and hormonal therapy commonly results in hair loss, change in skin colour and weight loss [28,39]. Also affirming this finding is Aziato (2009) who also identified the perception among women with mastectomy that the bodily changes were disfiguring and uncomfortable [27]. As a result, they avoided social gatherings such as going to church in order to avoid gossip from others.

4.3 RECOMMENDATION

The training of an oncology nurse to provide psychological care to women with breast cancer may be a cost effective measure to address the psychological issues patients face as they receive treatment. Additionally, the formation of support groups with survivors may be helpful in enabling patients meet their peers and learn from them some techniques they have employed to maintain or improve on their sexuality-related experiences.Furthermore, scalp cooling – a technique employed during chemotherapy administration to reduce blood flow to the scalp and thus limit exposure of the hair follicles to the chemotherapy – may be employed to reduce the degree of hair loss when patients are receiving chemotherapeutic agents such as the taxanes.

5. CONCLUSION

The diagnosis of cancer, its disease trajectory and management can alter an individual's life. Exploring the experiences of women diagnosed with breast cancer during multimodal breast cancer treatment revealed a number of issues consistent with the findings of other authors regarding the phenomenon. There were, however, new discoveries peculiar to the Ghanaian context.

In this study, participants experienced sexual problems during treatment due to altered body image, affected strength and reduced sexual desires. Thoughts and interest in sex were insignificant when the effect of treatment is severe. Various studies suggest that, cancer care of today should address psychosocial support in which sexuality is an important area.

CONSENT

All authors declare that written informed consent was obtained from study participants for publication of this study.

ETHICAL APPROVAL (WHEREEVER APPLICABLE)

All authors hereby declare that the study was examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

REFERENCES

1. Torre LA, Bray F, Siegel RL, Ferlay J, Lortet-Tieulent J, Jemal A. Global Cancer Statistics, 2012. CA CANCER J CLIN. 2015;65:87–108.
2. Coughlin SS, Besenyi GM, Bowen D, Leo G De. Development of the Physical activity and Your Nutrition for Cancer (PYNC) smartphone app for preventing breast cancer in women. mhealth. 2017;3(5).
3. Li C. Breast Cancer Epidemiology. Li C, editor. 2010. 1–7 p.
4. Kratzke C, Vilchis H, Amatya A. Breast Cancer Prevention Knowledge, Attitudes, and Behaviors Among College Women and Mother – Daughter Communication. J Community Health. 2013;38:560–268.
5. Desta F, Workicho A, Atomsa A, Workneh D, Tebeje B. Knowledge, Practice and Associated Factors of Breast Self Examination Among Female Students of the College of Public Health and Medical Science, Jimma University, Ethiopia. Am J Heal Res. 2018;6(2):44–50.
6. Aa A, Bowling M, Gj E, Elf G, Kipfer H, Sauder C. TREATMENT OF BREAST CANCER: IMO STATE NIGERIA VERSUS INDIANA , USA WOMEN – COMPARATIVE ANALYTIC STUDY. J West African Coll Surg. 2014;4(4).
7. Gyau DP. Economic Burden of Breast Cancer in Women: A Study at the Korle-Bu Teaching Hospital. University of Ghana; 2016.
8. World Health Organization. Ghana: Burden of cancer [Internet]. Geneva; 2021. Available from: https://www.iccp-portal.org/who-cancer-country-profiles-ghana-2020
9. Fisusi FA. Drug Combinations in Breast Cancer Therapy. 2019;7385:3–23.
10. Dominici L, Hu J, Zheng Y, Kim H, King T, Ruddy K, et al. Association of Local Therapy with Quality-of-Life Outcomes in Young Women with Breast Cancer. JAMA Surg. 2021;156(10).
11. Sparidaens EM, Beerendonk CCM, Fleischer K, Nelen WLDM, Braat DDM, Hermens RPMG. Exploration of fertility and early menopause related information needs and development of online information for young breast cancer survivors. BMC Womens Health [Internet]. 2022;22(329):1–10. Available from: https://doi.org/10.1186/s12905-022-01901-z

12. Krychman ML, Katz ML. Breast Cancer and Sexuality: Multi-modal Treatment Options (CME). J Sex Med. 2012;5–13.
13. Schultz WCM, Wiel HBM Van De. Sexuality, intimacy, and gynecological cancer. J Sex Marital Ther. 2003;29(suppl 1):121–8.
14. Pinto AC. Sexuality and breast cancer: prime time for young patients. J Thorac Dis. 2013;5(S1):1–6.
15. Aitken LA, Hossan SZ. The psychological distress and quality of life of breast cancer survivors in Sydney, Australia. Healthcare (Basel). 2022; 10(10).
16. Bodai BI, Tuso P. Breast Cancer Survivorship: A Comprehensive Review of Long-Term Medical Issues and Lifestyle Recommendations. Permanese J. 2015;19(2):48–79.
17. Wang F, Chen F, Huo X, Xu R, Wu L, Wang J, et al. A Neglected Issue on Sexual Well-Being following Breast Cancer Diagnosis and Treatment among Chinese Women. PLoS One. 2013;8(9).
18. WEBBER K, MOK K, BENNETT B, LLOYD AR, FRIEDLANDER M, JURASKOVA I, et al. If I am in the mood, I enjoy it: An exploration of cancer-related fatigue and sexual functioning in women with breast cancer. Oncologist. 2011;16:1333–44.
19. Nematzadeh KP, Vaziri SH, Lotfi KF. The effect of sexual skills training in increasing of marital satisfaction and sexual efficacy. Roudehen: Islamic Azad University; 2010.
20. Henson HK. Breast Cancer and Sexuality. Sex Disabil. 2002;20:1–18.
21. Mayan MJ. An introduction to qualitative methods: a training module for students and professionals. Edmonton: Qual Institute Press; 2001.
22. Ambrósio DCM, Santos MA. Experiences of family members of women with breast cancer: a phenomenological approach. Psic Teor e Pesq. 2011;27(4):475–84.
23. Cesnik VM, Vieira EM, Giami A, Almeida AM De, Santos DB. The sexual life of women with breast cancer: Meanings attributed to the diagnosis and its impact on sexuality. Estud Psicol Campinas. 2013;30(2):187–98.
24. Wilmoth MC, Coleman EA, Smith SC, Davis C. Fatigue, weight gain, and altered sexuality in patients with breast cancer: exploration of a symptom cluster. Oncol Nurs Fourm. 2004;31(6):1069–75.
25. Sheppard LA, Ely S. Breast Cancer and Sexuality. Breast J. 2008;14(2):176–81.
26. Ehsan A, Wu C, Minasian A, Singh T, Bass M, Pace L, et al. Financial Toxicity Among Patients With Breast Cancer Worldwide: A Systematic Review and Meta-analysis. JAMA Netw Open. 2023;6(2).
27. Aziato L. Post-mastectomy experiences of women with breast cancer in the Accra metropolis. West African J Nurs. 2009;20(1).
28. Cebeci F, Yangın HB, Tekeli A. Life experiences of women with breast cancer in south western Turkey: a qualitative study. Eur J Oncol Nurs. 2012;16(4):406–12.
29. Doumit MAA, Saghir N El, Huijer HA, Kelley JH, Nassar N. Living with breast cancer , a Lebanese experience. 2010;19815459.
30. Trusson D, Pilnick A. The Role of Hair Loss in Cancer Identity: Perceptions of Chemotherapy-Induced Alopecia Among Women Treated for Early- Stage Breast Cancer or Ductal Carcinoma in Situ. Cancer Nurs. 2017;40(2).
31. Can G, Demir M, Erol O, Aydiner A. A comparison of men and women's experiences of chemotherapy-induced alopecia. Eur J Oncol Nurs. 2013;17(3):255–60.
32. Rzepecki AK, Cheng H, Mclellan BN. Cutaneous toxicity as a predictive biomarker for clinical outcome in patients receiving anticancer therapy. J Am Acad Dermatol. 2018;79(3):545–55.
33. Fabbrocini G, Cameli N, Romano MC, Mariano M, Panariello L, Bianca D, et al. Chemotherapy and skin reactions. J Exp Clin Cancer Res. 2012;31(50):1–6.
34. Potter J 1, Hami F, Bryan T, Quigley C. Symptoms in 400 patients referred to palliative care services: prevalence and patterns. Eur PMC. 2003;17(4):310–4.
35. Hopkinson J, Wright D, Corner J. Exploring the experience of weight loss in people with advanced cancer. J Adv Nurs. 2006;54(3):304–12.
36. Helms RL, Hea ELO, Corso M. Body image issues in women with breast cancer. Psychol Heal Med. 2008;13(3):313–25.
37. van den Hurk C, Mols F, Vingerhoets AJJM, Breed WPM. Impact of alopecia and scalp

cooling on the well-being of breast cancer patients. Psychooncology. 2010;19(7):701–9.
38. Hansen JA, Feuerstein M, Calvio LC, Olsen CH. Breast Cancer Survivors at Work. J Occup Environ Med. 2008;50(7):777–84.
39. Ahn J, Suh EE. Body image alteration in women with breast cancer: A concept analysis using an evolutionary method. Asia-Pacific J Oncol Nurs [Internet]. 2023;10. Available from: https://doi.org/10.1016/j.apjon.2023.100214