

Care for breast cancer survivors in Asian countries: A review of sexual dysfunction

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Abstract

Breast cancer accounts for one in three new cancer cases in women each year. Despite having a higher survival rate than other cancers, it is associated with various side effects, including anorgasmia, vaginismus, hair loss, and decreased libido. This review aims to explore trends in the incidence of sexual dysfunction in breast cancer survivors, the etiology of sexual dysfunction, and the role of factors such as family history, age, duration of marriage, and depression in predisposing patients. We summarize the limitations of the treatment modalities already used to cater to sexual dysfunction in breast cancer survivors and patients. The authors conducted searches on databases such as PubMed and Google Scholar using relevant search terms: sexual dysfunction, breast cancer, breast cancer survivors, chemotherapy, dyspareunia, vaginismus, and anorgasmia from 1997–2023. The inclusion criteria encompassed all types of articles with abstracts or titles indicating research on sexual dysfunction in breast cancer survivors in Asia. A total of 64 articles were included out of which 10 were systematic reviews and meta-analyses. The literature search yielded results showing high incidence rates of breast cancer in Asia (45.4%), with 31.6%–91.2% of breast cancer survivors likely to experience sexual dysfunction. Regional differences were noted, as female sexual dysfunction occurred in 74.1% of Asian breast cancer women. Further randomized controlled trials should be conducted to assess the effectiveness of treatment modalities. Personalized approaches should be tailored to address beliefs, such as the potential impact of sexual activity on disease recovery. Utilizing a family history of breast cancer as a preemptive tool can help reduce the risk of developing female sexual dysfunction in survivors, and factors such as age and depression should be considered when formulating solutions.

Keywords

anorgasmia, breast cancer survivors, chemotherapy, dyspareunia, sexual dysfunction

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Introduction

Breast cancer statistics and why does sexual dysfunction occur among survivors?

Breast cancer (BC) stands as one of the most frequently diagnosed cancers in the world, accounting for 24.5% of all female cancers diagnosed globally, with more than 2.3 million new cases of BC documented in 2020 alone.¹ Annually, one in three new cases of cancer among women is caused by this disease.² With 45.4% of all BC cases diagnosed in Asia, the region appears to have a greater disease incidence.¹ In Southern Asia, Pakistan has one of the highest incidence rates in Asia, with one in every nine Pakistani women

receiving a BC diagnosis during their lifetime.³ Risk factors include old age, female gender, hormone replacement therapy with supplemental estrogen or progesterone, or having a family history of breast cancer 1 gene (BRCA1) or breast

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cancer 2 gene (BRCA2) gene mutations that enhance susceptibility to BC.⁴ Even though there were 684,996 confirmed female BC deaths in 2020,² it is still thought to have a better rate of survival than other types of cancer if diagnosed and treated early.¹ However, the likelihood of survival varies depending on multiple variables, such as age, ethnicity, individual lifestyle, and stage of cancer.⁴ The 5-year survival rate for stage 0 and I patients is 100%, whereas it gradually declines to 22% for stage IV patients.⁴

Despite having a better prognosis than other types of cancer,¹ female breast cancer survivors (BCSs) have reported experiencing various side effects, including nausea, hair loss, hot flashes, a dry vagina, and menstrual abnormalities.⁵ The most common of these is sexual dysfunction (SD), characterized by a range of conditions such as anorgasmia, dyspareunia, disorders of arousal or lubrication, vaginismus, or a lack of or diminished libido.⁶ A study in Malaysia in the year 2021 found that 31.6%–91.2% of female BC patients are likely to experience SD after treatment.⁷ Female sexual dysfunction (FSD) may develop as a result of disturbances in a variety of physiological and psychological elements that are essential to female sexuality. Initially, the management and diagnosis of BC can be distressing and lead to decreased sexual desire or a constrained interpersonal relationship between the patient and her partner.⁵ The treatment modality used for BC is also an important variable in the etiology of SD among survivors.⁵ Endocrine therapy with aromatase inhibitors (AIs) results in lower levels of estrogen in the blood, which can lower libido and cause dryness and itching in the vagina.⁵ In addition, dyspareunia has been documented in more than 50% of women receiving AI treatment.⁵ Despite its benefits, chemotherapy has its own drawbacks, such as hair loss, weight gain, gastrointestinal disturbances, fatigue, menstrual abnormalities, or even premature ovarian failure and menopause.^{5,8} Since a woman's perception of her own sexuality is often linked to her outer appearance, changes to her physical appearance, such as weight gain and hair loss, may make her feel less appealing to men and decrease her desire to engage in sexual activity.⁵

Radical mastectomy used to be the basis of surgical treatment for BC, but it is gradually being replaced by various types of breast-conserving surgery due to its association with the development of SD among survivors after treatment.⁹ In Asian culture, breasts are regarded as an essential component of a woman's sexuality, so removing them could make the patient feel unattractive or sexually undesirable. There is evidence indicating survivors who undergo breast-preserving procedures such as lumpectomies, partial mastectomies, or segmental mastectomies have a significantly lower risk of developing SD post-treatment than those undergoing a complete mastectomy.⁹ However, a 2013 study by Safarinejad conducted in Iran found that even women undergoing lumpectomy could experience varied degrees of SD, with 57% reporting

lubrication disorder, 37% reporting arousal disorder, and 42.5% reporting desire disorder.¹⁰

Body

Justification

Our review highlights the connection between SD and BCSs and how SD can impact and possibly impair the lives of BCSs. We have also mentioned several risk factors such as old age, lack of sexual activity, and depression that make BCSs prone to SD. The bitter truth is that BC patients do not report SD issues at the time of diagnosis. A plan involving coordinated monitoring through a multidisciplinary care group, which may include sex therapists, sexologists, or clinical sexologists, could prevent the risk of SD.¹¹ By bringing SDs and associated risk factors into the spotlight, clinicians and BC patients will consider these problems and report such symptoms, helping to make early diagnosis and prompt treatment.¹¹

As of now, cognitive-behavioral therapy (CBT) and hormonal therapy are being used to treat SD in BCSs.¹¹ Unlike previous reviews, our research brings into the limelight recommendations that may help improve the lives of BCSs. These include awareness programs that cater to the masses and thus can target a greater population of females having SD.¹¹ By gathering all risk factors into one place and recommending probable awareness methods, our review can help achieve a milestone in the health care world by creating awareness among patients and clinicians regarding risk factors and how to target the affected population.¹¹

Therefore, this review aims to explore trends in the incidence of SD in BCSs, its etiology, and the role of factors such as family history, age, duration of marriage, and depression in predisposing patients. We summarize the limitations of the treatment modalities already used to address SD in BC patients and survivors.

Methodology

A literature search was conducted across various reputable databases, including PubMed and Google Scholar. In addition, the reference lists of included articles were examined. English language articles from 1997 to 2023 were included. A specific set of search terms was employed to ensure the retrieval of relevant articles, encompassing terms such as SD, BC, BCSs, chemotherapy, dyspareunia, vaginismus, and anorgasmia.

The patient population was defined as individuals who experienced sexual impairment after suffering from BC, primarily in the reproductive age. The inclusion criteria encompassed all types of articles with abstracts or titles indicating research on SD in BCSs in Asia. The exclusion criteria involved articles with unavailable full texts and those not concerning the Asian population.

Approximately 20,200 search results were obtained on Google Scholar, and 31 results were found on PubMed. Among these, we included 64 articles in our study. There were about 10 systematic reviews and meta-analyses of six randomized controlled clinical trials. In addition, there were eight narrative reviews, and the remaining articles were cross-sectional reviews, in-depth qualitative semi-structured interviews, and questionnaires.

Diagnosis of SD

When diagnosing SD, health care professionals often refer to two commonly used classification systems: the International Classification of Diseases and Statistics (ICD) and the Diagnostic and Statistical Manual of Mental Disorders (*DSM*).¹² These systems provide guidelines and criteria for identifying and categorizing different types of SD. The *DSM-5*, in particular, sets specific standards for diagnosing SD. It requires that symptoms be present for a minimum duration of 6 months, with symptoms occurring between 75%–100% of the time for all diagnoses.¹³ In addition, these symptoms should not be attributed to the effects of medication or substances.¹³ In the transition from the previous edition of *DSM*, known as *DSM-4* Text Revision (TR), some changes were made to the classification of specific sexual disorders.¹² Hypoactive sexual desire disorder (HSDD) and female sexual arousal disorder (FSAD) were combined into a single syndrome called female sexual interest/arousal disorder (FSIAD).¹² This new disorder is characterized by the presence of at least three out of a list of specific symptoms, including diminished interest in sexual activity, reduced sexual or erotic thoughts, decreased initiation of sexual activity, decreased sexual excitement or pleasure during sexual encounters, and diminished interest/arousal in response to sexual stimuli.¹² Another category in the *DSM-5* is genito-pelvic pain/penetration disorder (GPPD), which merges the previous diagnoses of dyspareunia and vaginismus from *DSM-4* TR. This disorder is identified by the presence of specific characteristics, such as challenges with vaginal penetration during intercourse, pain in the vulvovaginal or genital area during penetration or intercourse, anxiety related to pelvic pain, and involuntary muscle spasms during penetration.^{12,13} The final female sexual disorder in the *DSM-5* is female orgasmic disorder (FOD), which is identified by the presence of certain characteristics during all or nearly all sexual activities. These characteristics include delayed, infrequent, or absent orgasm, as well as a decrease in the intensity of orgasmic sensations.^{12,13}

Incidence of psychological problems and SD in BC patients and survivors

The prevalence of psychological issues and SD in BC patients and survivors is indubitably appreciable. According

to a study by Qi et al.,¹⁴ in China, 83.08% of the patients had FSD, and the mean Female Sexual Function Index (FSFI) score was 13.5, whereas FSFI score <26.55 is considered as FSD. Moreover, it has also been shown that apart from patients, BCSs also have a higher risk of SD (9.1% versus 6.9%) compared with the general population, as indicated by the study of Chang et al.¹⁵

Further vindication has been provided by a recent study by Smedsland et al.,¹⁶ whose results show that 54% of sexually active BCSs reported a lower frequency of sexual activity than before having cancer. Chemotherapy (odds ratio (OR)=1.91, 95% confidence interval (CI)=1.23, 2.97) and ongoing endocrine therapy (OR=1.98, 95% CI=1.21, 3.25) were positively associated with reduced sexual activity as well.¹⁶

Psychological disturbances have also been observed in patients and survivors of BC.¹⁷ Females with BC undergoing treatment had higher mean scores for both depression (mean=8.38) and anxiety (mean=9.44), while women not being treated had lower rates (depression: mean=5.96; anxiety: mean=7.39) as depicted by a recent study.¹⁷ Another study revealed that young BC patients undergoing surgical intervention experienced greater depression, anxiety, and sleep disturbance 2 weeks postoperatively.¹⁸

Trends in SD among BCSs over the years in different countries

The likelihood of developing FSD among BC patients increases significantly over the years following initial diagnosis and treatment.⁷ A 2012 study assessing the prevalence of FSD in Iranian patients before and after treatment found that the risk rose from 52% to 84% following the completion of BC therapy.⁷ A cross-sectional study from 2021 also revealed that 73.4% of BC patients in West Malaysia went on to acquire FSD following therapy.⁷ China, in particular, appears to have a higher prevalence of FSD; a different study found that FSD occurred in 63% of BC patients in China compared with 43% in America, despite the fact that the risk of FSD among BC patients is generally higher in America than in Asia.¹⁹

From an Asian perspective, a study by Maleki et al. in Iran explained how women are limited in discussing their sexual issues due to being assigned a passive role in sexual relationships. There is an embedded belief among Muslim communities of being responsible for satisfying their male partners and being less attentive toward their own sexual satisfaction. This qualitative study impeccably mentions the complexities of sexual life and the cultural barriers tied to it. It explains how women living in societies like Iran are mostly under considerable pressure, feeling incompetent, and suffering from emotional issues along with the pre-existing physical complications of SD and BC.²⁰

A cross-sectional study by Öztürk and Akyolcu showed a strong relationship between the loss of sexual desire in

Turkish women following mastectomy due to BC.²¹ Similarly, another Chinese cross-sectional study by Yan et al. recorded 75.37% and 18.48% of BCSs reporting SD and sexual distress. This was attributed to misconceptions that sexual activity may increase the risk of recurrence or slow down recovery.²²

Wang et al.'s²³ study on 20 Chinese women also showed BCSs having a lack of sexual urges. All these studies are a call for help in Asian countries where SD and negligence toward it are progressively increasing.

Measures taken in the past to solve SD issues

Several treatment options have been introduced in the past to manage SD in BCSs. These approaches involve addressing loss of vaginal moistness and sexual pain with the use of massaging devices, vaginal lubricants, and moisturizers.^{24,25} Vaginal low dose estrogen, the use of testosterone, and soy protein have also proven to show relief of symptoms.^{26,27} Other pharmacological agents such as venlafaxine, gabapentin, SSRIs, and verapride have been found effective in managing hot flashes and menopausal symptoms, but they come with their respective side effects such as nausea, constipation, dry mouth, light-headedness, rashes, and edema.²⁶

Pelvic floor physical therapy, involving pelvic floor examinations, patient education, and training through biofeedback methods, along with bowel and bladder training, manual therapy, vaginal cone training, and electrically stimulating, has shown promise in the treatment of sexual pain (dyspareunia), as supported by a 2019 randomized controlled trial (RCT).^{24,28} In addition, addressing mood disorders or depression concerning sexual self-image and relationship issues may require referral to a sex therapist.²⁴

Chemotherapy opted for BC patients itself accounts for pallor, weight gain, and hair loss, which leads to a sense of unattractiveness in these women. The diminished sexual function associated with chemotherapy not only manifests as a reduced sex drive but is also attributed to dyspareunia and vaginal dryness. FSFI scores in BC female patients were compared post-diagnosis and post-chemotherapy. A significant 46.7% decline was noted in already declining sexual function post-therapy.^{29,30} Radiotherapy is another intervention frequently used in patients unresponsive to other treatment modalities or even as a first-line choice in certain situations. Patients treated with radiotherapy not only report a decline in sexual well-being but their physical and psychosocial well-being as well. Patients also report dissatisfaction with their overall breast appearance.³¹ However, the highest level of SD, as reported by a study comparing three different modalities, that is chemotherapy, radiotherapy, and hormonal therapy, was found to be in patients receiving AIs in hormonal therapy.³² However, adherence to adjuvant hormonal therapy is

difficult due to the side effects that ensue, such as fatigue, pain, low sexual interest, and dysfunction, as well as safety concerns regarding thyroid function, so patient compliance in this case is greatly compromised.^{32,33} Body image or physique plays a vital role in a woman's life, so the patients undergoing total or partial mastectomy can experience a sense of dissatisfaction with their bodies and a decline in sexual competency, fearing their appearances postoperatively. Patients usually are more satisfied with the procedures, offering better cosmetic results.³⁴

These interventions listed above are more or less associated with FSD. However, there are studies that do contradict the usual statistics. In these studies, the geographic, cultural, and religious backgrounds play a vital role, and the analysis of a larger population group is needed to establish a ground basis for these results.

Factors associated with SD in treated BC patients

Frequency of sexual activity. Research has revealed that a significant percentage of women worldwide diagnosed with BC (approximately 50% to 75%) encounter persistent challenges in sexual functioning.³⁵ These difficulties often manifest as reduced sexual desire and decreased frequency of sexual activity. Both visible and invisible factors contribute to SD among BCSs.

Visible physical changes resulting from BC and its treatments, including weight gain, hair loss, skin changes, scars, and breast appearance alterations, negatively impact body image and confidence.³⁶ In addition, chemically induced menopause from BC treatments can lead to invisible issues such as vaginal dryness, painful intercourse (dyspareunia), and decreased libido.³⁷ Fatigue caused by radiotherapy and painful dermatitis may also influence a woman's desire for intimacy.

Sexual problems can emerge shortly after treatment or even years later in BC patients.³⁸ Addressing the factors contributing to SD is essential in providing comprehensive care and support to BCSs.

In a study carried out in China in the year 2020, it was found that approximately 24.3% of BCSs reported engaging in sexual activity in the previous year.³⁹ Moreover, more than 50% of the BCSs believed that sexual activity could have an adverse impact on their disease recovery. Their attitudes toward sex included the perception that "sexual activity may hinder disease recovery."³⁹ Considering the frequency of sexual activity, previous studies have found that BC and associated treatments often lead to a reduction in sexual desire along with a decrease in the frequency of engaging in sexual intercourse. Reports from BC patients indicate that sexual disturbances can occur soon after diagnosis or even persist for years following treatment. For instance, a study by Panjari et al. examined 1000 women with BC and found that 70% of BCSs experienced sexual

problems within 2 years of diagnosis. It is noteworthy that approximately 20% of these patients reported dissatisfaction with their sexual lives even before being diagnosed with BC.⁴⁰ Another study focused on patients receiving AIs for BC treatment. It revealed that 79% of the participants developed new sexual problems, leading to nearly a quarter of them discontinuing sexual activity.⁴¹

Family history of BC. A family history of BC confers dual advantages: facilitating early screening and diagnosis while ensuring superior quality of care. This proactive approach not only enhances cancer characteristics and post-treatment outcomes but also holds the potential to reduce the incidence of FSD. Recognizing the importance of family history in BC, its incorporation into preventive strategies and post-treatment support becomes indispensable in minimizing the occurrence of FSD among affected individuals.⁴²

The existence of family members who've faced BC provides crucial social backing, especially in dealing with stress and sexual issues. The shared experiences and insights within the familial support network may provide practical coping mechanisms, positively impacting the sexual functioning, overall well-being, and quality of life for BC patients.⁴³ Moreover, a study from the northeastern part of West Malaysia reported a statistically notable increase in sexual function among patients with a family history of BC ($p=0.040$). The study documented a 2.2-point rise in the sexual function score, with a 95% CI spanning from 0.10 to 4.26.⁷

Factors associated with SD (age, depression, and duration of marriage)

A study by Bredart et al. reported that BC patients more than 50 and 55 years of age report, respectively, 3.9 and 4.7 times higher degree of sexual discomfort.⁴⁴ The decline in sexual functioning associated with advancing age can be attributed to reduced arousal or inability to achieve orgasm, inadequate lubrication, and painful intercourse.⁴⁴ On the contrary, research has also shown that BC patients who are below the age of 35 and those in their midlife, between the ages of 35 and 50, and are receiving additional therapy can experience early onset of menopause. This condition is linked to a decline in sexual functioning, distress caused by menopausal symptoms, infertility, and worries about long-term effects like bone loss.³⁷

Another study conducted in Malaysia by Poh Siang Ooi et al. revealed the duration of marriage to be one of the factors associated with FSD in BCS. The results showed a longer duration of marriage to be associated with lower sexual functioning scores among the participants.⁷ This association may highlight a decrease in marital satisfaction and more marital conflicts with a longer married life.

Depression is associated with SD, and this association is often caused by antidepressant use. A 2014 meta-analysis of 58 RCTs and five clinical studies concluded that two drugs, escitalopram and paroxetine, were more likely to cause SD than other medications.⁴⁵ Judy Rothmore's review highlights the role of selective serotonin reuptake inhibitors (SSRIs) and SD through serotonin and norepinephrine reuptake inhibitors (SNRIs) in patients with depression.⁴⁶ Activation of postsynaptic serotonin (5-HT) (hydroxytryptamine) 2A receptors is responsible for SD caused by SSRIs.¹⁰ Post-SSRI sexual dysfunction (PSSD) may manifest within days after a single dose of SSRIs, particularly with genital anesthesia starting 30 min after administration.⁴ In some cases, these effects persist even after antidepressant treatment is discontinued.⁴⁷ Given the consistently strong association between antidepressants and SD, it prompts our curiosity regarding how a BCS with mental health issues might experience sexual impairment in a compounded manner.

Effect of patient's SD on their spouses

SD, including vaginismus, sexual pain, anorgasmia, dyspareunia, premature menopause, and vaginal dryness among women diagnosed with BC or those that have undergone treatment, not only impacted these females but also has a discernible effect on their spouses/partners.⁴⁸ This effect could be both mental and physical. Women suffering from SD can cause their male partners to also experience SD.⁴⁸ This finding was highlighted in a comprehensive analysis carried out by Chew et al.,⁴⁸ who discovered a significant threefold rise in the chances of men facing SD when they are in relationships with women experiencing such issues. Another study conducted by Barni et al. revealed that 24% of BC patients openly discussed sexual problems with their partners. Surprisingly, in 28% of cases, the illness had no adverse effect on their relationships, and in 12% of cases, it even strengthened the bond between partners.⁴⁹

Women experience physical changes following a diagnosis of BC and the subsequent treatment. As a result, they may assume a more passive role in their relationships with men, while men are likely to display empathy toward their wives during this challenging period.⁷ Prioritizing intimate affection becomes essential for attaining sexual pleasure, replacing the emphasis on sexual intercourse.⁷ According to a study conducted by Chang et al.,⁵⁰ it was observed that men often downplayed their wives' illness and instead focused on cultivating intimacy with their unwell partners. In addition, a considerable number of men reported a noticeable shift in their tone of speech toward their wives, characterized by increased respect and romance. They also developed a deeper appreciation for their spouses.⁵⁰ This depicts the finding that effective communication between

partners increased after diagnosis/treatment of BC patients, which is the key to leading a healthy sexual life.

Treatment options for SD

Factors affecting sexual functioning in cancer survivors are multifaceted, and they require a multidisciplinary approach for promising results.⁵¹ Despite the availability of various treatment modalities, physicians and patients make choices based on their personal preferences.

Among all the options available, face-to-face CBT has been identified as the gold standard psychological treatment for SD.⁵² A RCT involving 169 BCSs showed that those who received CBT experienced significant improvement in sexual activity.⁵³ They achieved considerable milestones such as vaginal lubrication, enhanced sexual pleasure, and reduced discomfort during sex. However, there were not many promising results concerning intercourse frequency and orgasmic abilities.⁵³

In addition, intimacy enhancement programs aim to address issues concerning body image and overall intimacy in a relationship.³⁵ The sessions include counseling and psychotherapy, resulting in the exploration of fears, concerns, and expectations of survivors toward their partners.³⁵ In a developmental study, BCSs' sexual concerns were directly translated into the format of an intimacy enhancement intervention.³⁵ This study confirmed the potential benefits of using a telephone-based format and also highlighted aspects where partners can be incorporated for more prominent results. The qualitative data obtained improved the interventions as they focused on breast changes as well. The loss of breast sensation and insecurity regarding breast appearance results in most women not wanting to be touched during sexual activity, and their partners also hesitate to touch their breasts due to fear of hurting them. Thus, this leads to limiting the freedom of exploration and enjoyment during sexual activity. To cater to this issue, in the intimacy enhancement program, couples were given guidance on how to navigate their thoughts and fears of breast touching when they were involved in the sensate focus exercises.³⁵ Sensate focus exercises revolve around using physical touch to become comfortable with your partner and help in building trust and intimacy. Intimacy enhancement programs can prove to be a valuable asset if they are also inclusive of homosexual women's sexual experiences and ethnic populations.

Another potential novel approach to addressing SD in BCSs includes hormone therapy.⁵⁴ A double-blind controlled trial yielded that administering testosterone and estrogen in these women exponentially increases the desire and arousal toward sexual activity.⁵⁵ Also, these women show a remarkable enhancement in interest, pleasure, and fantasies after receiving hormonal therapy.⁵⁵ The use of recently Food and Drug Administration (FDA)-approved 5-HA_{1A} agonist/5-HT_{2A} antagonist therapy has been successful in increasing

orgasm and alleviating the complaint of libido among SD women.⁵⁶ Alongside, the use of transdermal testosterone therapy and melanocortin four receptor (MC4R) agonists should be encouraged, as these amplify signaling between the amygdala and insula, thereby increasing visual erotic stimuli.⁵⁷ Another modern non-pharmacologic approach to the management of SD among BCSs includes group education therapy.⁵⁷ Group education intervention for BCSs has proved to increase acceptability and self-satisfaction among these women. Women experienced a significant decrease in intercourse-related anxiety and pain after receiving the first round of education therapy.⁵⁸ These women also reported a boost in their confidence with a gain in sexual desire once again.⁵⁸ In addition to this, the introduction of midwives, especially in rural areas, would be a step up in dispersing group education therapy to illiterate BCSs in remote areas.⁵⁹ These midwives can ensure the delivery of authentic health care guidance regarding SD and address the reservations of women in these regions.⁵⁹ This would help develop adherence and increase participation in group sessions from their end.⁵⁹ As in Iran, the introduction of trained midwives at the community level significantly helped in the eradication of myths regarding SD.⁵⁹ These midwives acted as educators, indirectly motivating sexually dysfunctional women to seek health care intervention and attend group education sessions.⁵⁹ Thus, a holistic model of treatment, such as cognitive-behavioral and group education therapy, should be incorporated alongside modern medicinal techniques, such as hormonal supplementation and intimacy enhancement programs, to ensure multi-pronged management of SD in BCSs.⁶⁰

Recommendations

Governments can also play their role in the matter. Multiple counseling strategies and public awareness campaigns by the government and non-governmental bodies in the United States have been helpful in propagating the message to the mass population.⁶¹ Such strategies should be employed in Asian countries too. These awareness campaigns will allow women to recognize the potential symptoms of SDs, like vaginal dryness, and address them to their primary care physician rather than ignoring them.⁶² Also, these counseling strategies encourage females with SD to share their possible concerns regarding traditional dysfunction remedies with the health care experts.⁶² The government should ensure the availability of free consultations from family therapists, sex therapists, and sexual counselors.^{61,62} This would enable a more targeted and accurate identification of problems in sexual behavior.⁶¹ Such a large-scale intervention would increase access to authentic and all possible treatment options for these females.⁶¹ The use of electronic and print media in increasing the awareness program should be adopted.⁶³ Collaboration with well-recognized bodies, such as the

United Nations Fund Population (UNFPA), the International Society for the Study of Women's Sexual Health, and the American Cancer Society in the field, should be encouraged by governments of low- and middle-income countries such as Iran, Pakistan, and Turkey. California Breast Cancer Research Program (CBCRP) runs remarkable online platforms where the renowned American Association of Sexuality Educators, Counselors, and Therapists is available.^{62,63} These experts help break cultural barriers and myths as well as provide valuable consults for female patients with BCSs at their homes.⁶³ Such online platforms should also be set up in Asian countries to provide easy consultation. Governments of the regions where BC is endemic, such as Central Asia, should encourage physicians and health care professionals to identify BCSs at risk of mental instability and severe mood disturbances.⁶³ So that referral of their patients to group therapy, psycho-educational support, marital counseling, sexual counseling, or intensive psychotherapy could be ensured.⁶³ Survivor care programs should be launched by government and non-government bodies in Central Asia.⁶⁴ In such programs, patients get themselves enrolled, and their diagnosis, treatment regime, management protocol, and all the relevant information should be registered in this national database.⁶⁴ This care program would help keep records of follow-ups, recent laboratory reports, and patient office visits.⁶⁴ The plan will be able to predict any short- or long-term side effects of the therapy so that the patient is well aware and counseled beforehand.⁶² The constantly updating record would allow the doctor to watch any recent changes in the mood and mental state of patients, which could develop into negative sexual psychology in the survivor.^{62,64} Timely psychosocial intervention helps reduce the disease burden in our patients.⁶⁴

Limitations

There are some limitations in our narrative review. First, we only included English language studies. Second, it wasn't scanned systematically, so there's a possibility that some eligible studies were missed. As it mostly includes Asian studies where religious and cultural barriers are dominating, there's a likelihood of the findings in these studies being underreported. This may be due to the participants feeling less supported and confident in expressing their sexual issues. As it's not a cross-sectional study, there's a limitation of lacking novelty from our findings, and bias may exist. To overcome that, novel epidemiological studies should be carried out by health care providers in Asia.

Conclusion

This review aims to highlight the development of SD among BCSs. BC, one of the most frequently diagnosed cancers in the world, has a better prognosis than other

types of cancer, but almost all the BCSs experience dissatisfaction with their sex life. Sexual health and femininity are highly important aspects of quality of life for all women, and hence, care professionals should consider sexual health as a major health care demand in BC survivorship care. Unfortunately, survivorship care often does not receive enough focus, as only a limited number of individuals who have overcome BC receive proper guidance and education regarding their sexual well-being from oncology specialists. Physicians are not doing enough to address the sexual health worries of BCSs, and there is a shortage of substantial evidence to endorse the inclusion of systemic interventions or physical therapy in the management of SD among those who have conquered BC. Health care practitioners should be able to address sexual health as a major survivorship issue with the patient as part of their usual survivorship treatment and provide appropriate treatment based on a comprehensive evaluation of symptoms. Sensitization of health care workers to this issue might be the first step in improving health care efforts. BCSs' sexual well-being is impacted by multiple elements, highlighting the need for a comprehensive approach to achieve more favorable results. Considering the undeniable significance of sexual wellness for those who have battled BC, there is a pressing need for further clinical studies to evaluate groundbreaking measures aimed at addressing sexual difficulties among this group.

Declarations

Ethics approval and consent to participate

Not applicable. This study is a review and is based exclusively on published literature.

Consent for publication

Not applicable.

Author contribution(s)

Minal Jehan: Conceptualization; Writing—original draft; Supervision; Project administration.

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