

# Psychological and sexual disorders in long-term breast cancer survivors

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**Background:** The progressive increase in the number of patients surviving long term after a diagnosis of malignant disease has led to a focus on the early and late complications of the disease and its treatment. The aim of this study was to investigate the prevalence of complications which may worsen quality of life and shorten long-term survival.

**Methods:** We identified 306 cancer patients who had been disease-free without treatment for at least three years. Of these, 167 with breast cancer were enrolled in this study. A detailed questionnaire-based interview was undertaken to investigate the characteristics of the patients (age, gender, marital status, education), the tumor (date of diagnosis, histology), and treatment. We also used the Beck Depression Inventory to screen for depression, Spitzer's Quality of Life Index to assess quality of life, and the International Index of Erectile Function and the Female Sexual Function Index to get precise information on sexual function.

**Results:** Psychological effects were reported by 121 (72.4%) subjects. Sexual disorders were identified in 60 (35.9%) subjects. A correlation between frequency of psychological disorders and severity of sexual disorders was reported. The proportion of psychological disorders was higher in younger patients, those who were married, and those with low education.

**Conclusion:** In survivors of breast cancer, the incidences of psychological and sexual affective disorders are significant and frequently correlated, resulting in diminished quality of life.

**Keywords:** psychological, sexual, disorders, survivors, breast cancer

## Introduction

Breast cancer is the most common malignancy in woman aged 50–70 years. Early diagnosis, advances in treatment, and our aging society have led to a rapidly increasing number of cancer survivors. In 1971, there were an estimated 3 million cancer survivors in the US, and by 2005 this number was in excess of 10 million, representing 4.4% of the population of the US. Today, it is estimated that one adult in a thousand is a cancer survivor in the western world. According to 2006 data from the Italian Association of Cancer Registries, over 2,200.00 of Italians were cancer survivors, constituting 2.2% of the total population.

Research on cancer survival includes the physical consequences as well as psychosocial and economic challenges surrounding the diagnosis of cancer and its treatment. Studies carried out in long-term cancer survivors have identified late effects related to the disease and its long-term treatment that both patients and their doctors need to know about. These effects can be highly variable both in terms of the disease and its severity.<sup>1–4</sup>

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Untreated anxiety, depression, and sexual disorders interfere with all aspects of life, decreasing the patient's ability to cope with their illness, and interfere with relationships, rehabilitation, and enjoyment of their remaining life span. Normal sexual activity includes arousal to relaxation with no problems, and should be characterized by a feeling of pleasure, fulfillment, and satisfaction. Depression and anxiety are not uncommon among people diagnosed with cancer. Hinz et al have investigated rates of anxiety and depression in cancer patients and found that their risk of psychiatric distress is nearly twice that of the general population.<sup>5</sup> The aim of this study was to investigate the prevalence of sexual dysfunction and psychological correlates in breast cancer survivors.

## Materials and methods

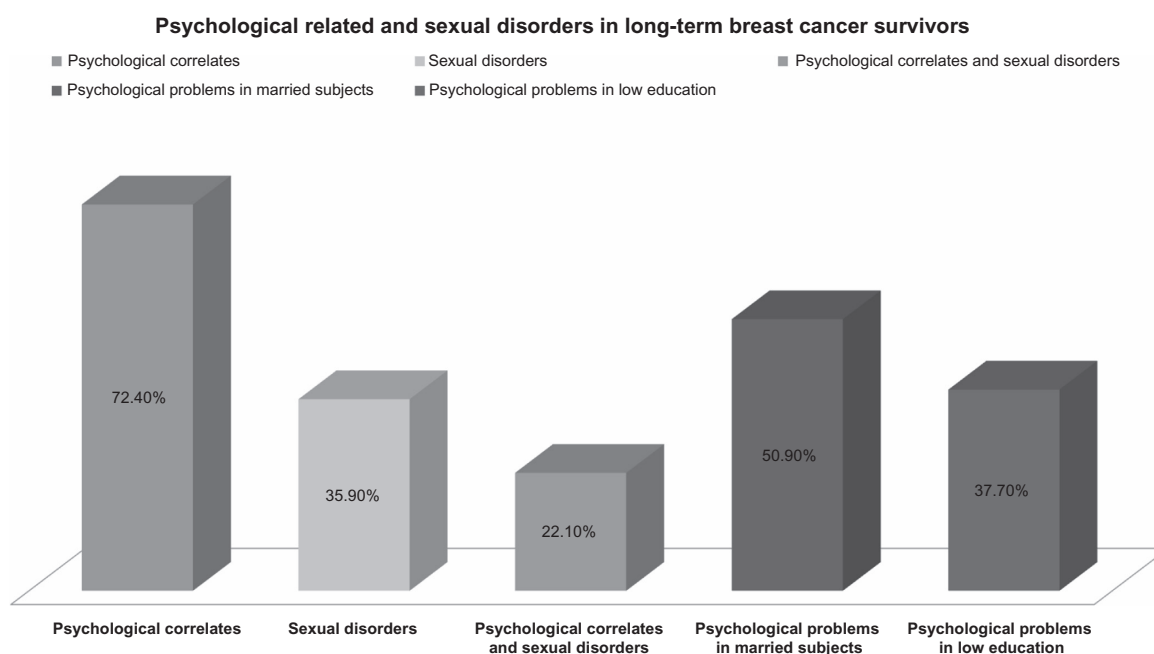
Of 306 cancer survivors, 167 treated for breast cancer were identified and enrolled in this cross-sectional study. Only patients who were disease-free without treatment for at least three years were included. Patients were informed in advance about the nature of the study, and informed consent was obtained prior to interviewing them. A questionnaire was used to determine patient characteristics (age, gender, marital status, education), tumor characteristics (date of diagnosis, histology) and type of treatment. All participants completed the Beck Depression Inventory, comprising 21 questions to screen for depression,<sup>6</sup> and Spitzer's Quality of Life Index which investigates five aspects of quality of

life (activities, daily life, health, support, state of mind), with a 0–10 score for each.<sup>7</sup> We also used the International Index of Erectile Function<sup>8</sup> and the Female Sexual Function Index.<sup>9</sup> Descriptive statistics were used for analysis of the data. Percentages were used for the frequency distributions of all the study variables considered.

## Results

In total, 167 breast cancer patients completed the questionnaire and were included in the evaluation and analysis. The average age was 60.8 (range 33–89) years; 97.1% were female and 2.9% were male; 50.8% had completed elementary, 22.7% had completed middle school, 17.9% high school, and 8.3% were graduates. Marital status was unmarried in 12, married in 122, divorced in five, and widowed in 27. Over 90% reported having had previous surgery for cancer, more than 70% had received chemotherapy, more than 50% had had radiotherapy, and more than 20% had undergone endocrine treatment.

Psychological and sexual disorders were present in 72.4% and 35.9% of the patients, respectively (Figure 1). The grading of psychological-related disorders (Table 1) ranged from slight (53.7%) to moderate with loss of interest and dissatisfaction (27.2%) to serious depression (18.1%). Sexual disorders were more frequently reported as loss of sexual desire, pain during sex (especially women), erectile problems, and decreased intensity of orgasm, all of which resulted in reduced sexual activity (Table 1). In total, 22.1%



**Figure 1** Psychological-related and sexual disorders in long-term breast cancer survivors.

**Table 1** Frequency distribution of subjects with respect to disorders encountered

Disorders	n	Percentage
Psychological correlates	121	72.4%
Men	2	1.7%
Women	119	98.3%
Slight	65	53.7%
Moderate	33	27.2%
Serious (depression)	22	18.1%
Sexual disorders	60	35.9%
Men	2	3.3%
Erection difficulties	1	50%
Women	58	96.6%
Pain during sexual intercourse	26	44.8%
All	60	35.9%
Decreased intensity of orgasm	19	31.6%
Loss of sexual desire	25	41.6%

of patients had both psychological disorders and sexual problems (Table 2).

The results also showed a higher prevalence of psychological problems in married subjects (85/167, 50.9%) and in those with low education (elementary school certificate or below, 63/167, 37.7%, Figure 1). Spitzer's Quality of Life Index score was significantly lower (0–4) in 63% of patients with psychological disorders, in 68% of those with sexual disorders, and in 82% of patients with both problems (Table 3).

## Discussion

The number of long-term cancer survivors is likely to continue to grow, given the increasing incidence of cancer and improving survival rates.<sup>10</sup> Based on longitudinal and cross-sectional evidence, cancer survivors can experience symptoms for more than 10 years following treatment. These symptoms are present in survivors of different types of cancer who may have undergone a wide variety of treatments.<sup>11</sup> The impact of cancer does not end when treatment and follow-up is completed. Some studies have highlighted the fact that cancer survivors have more serious physical, emotional, and social problems than the general population, and that these symptoms often persist for some time after treatment. These problems are most often related to fatigue, cognitive impairment, depression, sexual dysfunction, loss of fertility, and social relationships. In this study, we investigated

**Table 2** Correlations between psychological disorders and sexual problems

Related psychological	121/167, 72.4%
Sexual disorders and psychological correlates	37/167, 22.1%

**Table 3** Low quality of life in psychological and sexual disorders

Disorders	% of low QL index of spitzer (0–4)
Psychological correlates	63%
Sexual disorders	68%
Both	82%

psychological and sexual dysfunction in long-term breast cancer patients.

## Psychological problems

The problems most frequently encountered were of a psychological nature, identified in 72.4% of patients in this study, indicating that psychological problems may affect patients not just during treatment, but also during follow-up, and may persist for years after diagnosis. The life experience of cancer patients is strongly affected by the disease and this has important psychosocial implications, including significant psychological stress that greatly compromises quality of life in these patients. Anxiety, depression, fear, and cognitive and affective disorders are very common in long-term cancer survivors, including in the sample examined in this study. Published research on psychosocial issues in long-term cancer survivors is scarce and inconclusive.<sup>12</sup> Some studies have identified mental health problems with impaired quality of life in long-term survivors of different types of cancer,<sup>13,14</sup> while other studies have suggested that mental health and quality of life in this population are not significantly affected.<sup>15,16</sup> Karen et al<sup>17</sup> conducted a study in the US in 2002–2006, comparing the incidence of serious psychological distress in 4636 patients diagnosed with cancer for more than five years and 122,220 people who had never been diagnosed to have cancer. The study results showed that the prevalence of serious psychological distress was significantly higher among long-term cancer survivors than among those who have never been diagnosed with the disease (5.6% versus 3.0%,  $P < 0.001$ ). The proportion of psychological disorders was higher in patients who were younger, married, and/or had low education. The results of our study, although conducted in a small number of patients ( $n = 167$ ) and without any comparison with healthy subjects, showed strong evidence of psychological problems, especially in married subjects (50.9%) and those with low education (37.7%). Variability related to demographic, social, and cultural factors may affect the incidence of this problem in long-term cancer survivors. Therefore, in this context, the challenge is to identify survivors who need support when they are away from special care and follow-up, so that extra support can be provided to those who need it.<sup>18</sup>

## Sexual disorders

Another issue emerging from this study was related to sexual dysfunction, which was present in 35.9% of the patients examined and related to impairment of relationships with partners arising from the diagnosis of cancer and problems associated with its treatment. Pain during sexual intercourse was the most common problem, reported by 44.8% of women. Men may experience problems with arousal and erection. A high prevalence of sexual difficulties has been found in survivors of various cancers (breast, uterus, ovary, colon). In a review published in 1985, Andersen reported that general sexual disruption or specific difficulties in reaching orgasm ranged from 21% to 39% in patients with a diagnosis of breast cancer.<sup>19</sup> In the present study, 34.7% of women with breast cancer had sexual problems, which is consistent with the rates reported in the literature. Sexual dysfunction in cancer survivors is usually related to treatment rather than the disease itself. Cancer survivors most at risk for treatment-related sexual dysfunction are those with pelvic tumors and/or those whose treatment damages the hormonal systems mediating sexual desire and pleasure.

Psychosocial factors are also important. The risk of sexual dysfunction in a cancer survivor is heightened by emotional distress, relationship conflict, and having a partner who is sexually dysfunctional. It is also important to remember that medications used to treat depression, anxiety, pain, and nausea during and after cancer treatment frequently have side effects relating to sexual function.<sup>20–22</sup> In men, loss of desire for sex is often linked to frustration and low self-esteem when erectile function is impaired.<sup>23</sup> In our study, of 60 patients reporting sexual dysfunction, 41.6% complained of reduced sexual desire and 31.6% suffered from reduced intensity of orgasm; of two males who reported sexual dysfunction, one had erectile problems (Table 1).

Of interest, 21.6% of patients in our study were older than 65 years of age. In a cross-sectional survey,<sup>24</sup> the prevalence and type of sexual concerns, as well as interest in and experience with discussing these concerns with physicians was compared between women younger and older than 65 years. Of 1480 women seeking routine gynecological care, 964 (65%) responded, and 163 (17%) were aged 65 years and older. The results show that although the types of sexual concerns varied in frequency, women aged 65 years and older had similar sexual concerns to those of younger women and wanted to discuss their sexual health with a physician. Although cancer and its treatment may not impact intimacy in elderly patients to the same extent as in other adult age

groups, our data suggest that sexual problems are also present in an elderly subgroup of cancer survivors.

## Conclusion

Long-term cancer survivors are potentially at risk of physical<sup>25–27</sup> and mental health problems,<sup>28,29</sup> so need relevant information and support.<sup>30</sup> Care providers should be aware of the health consequences in long-term cancer survivors and consider appropriate supportive care for their patients. The identification of long-term effects of cancer that contribute to disability and the action needed to improve these and their consequences has become an important aspect of clinical programs. Knowing how to identify diagnosis from the beginning of the problems related to the long-term survivors might be an incentive to choose the best treatment for the patient, in relation to prognostic factors for long-term survival, predictors of response to treatment, and comorbidities present. The patient should be instructed from the beginning of the diagnosis of all issue collateral disease and treatment efficacy through which the patient may feel healed. Communication between practitioner and patient should therefore begin as early as possible after the diagnosis of cancer and should continue throughout treatment and follow-up. The results of this study confirm that cancer impacts on interest in sex and intimacy across the age groups, with support and information on this topic being needed not only by younger but also older cancer survivors.<sup>31</sup> In summary, our data confirm that psychological and sexual disorders are common in breast cancer survivors and can diminish their quality of life. These can be ameliorated only by prevention and control. These issues should be taken into account by all physicians caring for this growing segment of the population, considering that quality of life is important in long-term cancer.

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## Disclosure

The authors report no conflicts of interest in this work.

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