

# Psychiatric Symptoms and Psychosocial Problems in Patients with Breast Cancer

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## ABSTRACT

Cancer is a physical disease and also one of the leading clinical manifestations where psychosocial problems are prevalent. Psychosocial problems that these patients may have in the long run include anxiety, uneasiness, mourning, helplessness, fatigue, impairment of concentration, sleep disorders, mental and cognitive reservation, sexual dysfunction, infertility, psychological distress, and psychiatric disorders. Psychosocial problems have a nature of underpinning the emergence of psychological troubles. The prevalence of psychological disorders in patients with cancer range from 29% to 47%. Psychiatric disorders that are likely to be seen are severe stress disorder, adjustment disorder, depressive disorder, and other neurotic disorders. It is considered by the present author that in the event of breast cancer, potential psychiatric disorders may affect prognosis of the disease, adherence to and success of therapy, social and societal functioning, and survival rate. This paper aims to review the psychiatric symptoms and diseases that may develop in patients with breast cancer, which is one of the most frequent types of a globally common disease; i.e., cancer, as well as the impact of psychiatric symptoms on the treatment of disease.

**Keywords:** Breast cancer, psychiatric symptoms, psychosocial problems

## Introduction

According to data published by the World Health Organization, the global burden of cancer has doubled within the last 30 years (1). In most countries, including ours, cancer is the second most common cause of death (2). Any diagnosis of cancer accompanies serious psychosocial problems for the patient, his/her relatives and society, as well as significant work force losses (1). It is a challenging disease that induces a crisis in the patient's psychological balance and is perceived as a disaster in the eyes of the patient and his/her family, generating huge impacts in terms of both physical and emotional aspects with the feelings of fear, hopelessness, guilt, desperation, and being abandoned (3). Behavioral factors play a part in the development of cancer, but psychiatric complications may emerge in patients with cancer due to various psychological impacts that have neurophysiologic and perceptual character. Such psychiatric complications and psychological challenges impair adjustment capabilities and quality of life of the patient, and also negatively affect the course of disease and response to treatment (4).

The prevalence of psychiatric disorders in patients with cancer reportedly ranges from 29% to 47%. The existence of depression may disturb compliance to treatment and negatively affect the course of disease, which increases the duration of hospitalization and treatment expenses (5). Recent studies found that the factors such as socioeconomic status, social support, performance capacity, recent losses, and awareness of the diagnosis of cancer might affect the rate of psychiatric disorders (6-8). In addition to its chronic and malignant nature, cancer is an important cause of emotional, mental, and behavioral reactions. In this sense, it is important to identify mental problems and underlying factors in order to understand the patient better, to facilitate his/her adjustment to the new state, and to plan a proper approach (9).

On the other hand, breast cancer is the most common cancer type among women and it has also always been the most investigated cancer type in terms of its mental and psychosocial aspects because it poses a threat to an organ that symbolizes femininity and sexuality (10, 11). In the event of breast cancer, initial reactions are usually related to pain and death, and subsequent reactions are about loss of breast, which may come into existence secondary to surgical therapies. Loss of breast, as an organ that represents motherhood, sexuality, and esthetics, is mostly perceived as a loss of attractiveness, fertility, sexuality, and femininity as a whole (12). Moreover, chemotherapy, radio-

therapy, and surgical treatments lead to deterioration of the quality of life to a considerable extent, and to certain adverse physiological and mental effects such as anxiety, depression, body dysmorphic disorder, infections, and vomiting (13-16). The aim of this paper was to review psychiatric symptoms and illnesses that may develop in patients with breast cancer, and their potential impacts on treatment process.

### Epidemiology of Breast Cancer

Examining the incidence, mortality, and prevalence of cancer for the year 2002 across the globe, it was reported that 10.9 million new cancer cases emerged, 6.7 million of which resulted in death, in addition to 24.6 million expected cases who were still alive. The most diagnosed types include lung, breast, and colorectal cancer (17). Breast cancer is the most common cancer one among women. It accounts for 33% of all cancer cases and 20% of cancer-related mortalities among women. In general terms, it is the second most common cause of cancer-related death after lung cancer (18). In Turkey, on the other hand, the incidence of breast cancer is observed to be 35% among women (19). A study on the assessment of cancer incidence and mortality across 40 European countries confirmed that the incidence of breast cancer ranked number three with a rate of 12.8% after lung and colorectal cancer cases (20). In 2006, the incidence of breast cancer was calculated to be 28.9% across Europe (21). In 2000, the rate was 24.9% for Turkey (22), reportedly tripling within last 10 years (23).

When it comes to the relationship between cancer-related mortalities among women and age groups, it is seen that leukemia ranks first in those aged 15 years and below, lung cancer comes first in the 55-74 years age bracket, colorectal cancer is the most common in those aged 74 years and above, and breast cancer ranks number one in the group aged 40-44 years (24).

### Breast Cancer and Psychiatric Diseases

Cancer is a serious health problem that mostly leads to death in the absence of early diagnosis and treatment. In addition to causing death in millions of people, it brings a considerably high probability of occurrence of psychiatric disorders (25). Accompanying psychiatric disorders have a significant impacts on a patient's quality of life, self-care, adaptability to treatment, and over the course of time, the severity and prognosis of cancer as well as response to treatment (25-28). People who are told that they have cancer normally have difficulty in believing what they have heard at first place, fail to acknowledge the situation, lose their temper, and become sorrowful. After a couple of weeks, the mourning stage gives way to efforts to adjust, a desire to fight, and hope. However, in rare cases the mourning period lasts longer, turning distress and anxiety into a clinical presentation of depression (29). Features such as age, sex, personality, and variables that affect the prognosis of disease and response to treatment such as symptoms that give rise to loss of ability, location of cancer, pain, the degree to which it reduces the quality of life, life purposes, career, marriage, and family, and environmental conditions such as social support, the existence of someone who is perceived as helpful in an emotional sense, and socio-economic status have several impacts on the ability to cope with the diagnosis of cancer (28, 29). On the other hand, patients with breast cancer may suffer from significant psychological problems due to several reasons including uncertainty about treatment, physical symptoms, fear of recurrence and death, change in female identity, body image and sexuality, difficulties in daily life activities, family-related problems, and lack of emotional support (30-32). In several studies on the psychology of patients who underwent surgical procedures because of breast cancer, the psychological dysfunction rate was found to range from 30 to

47%, without any significant difference between those who underwent breast-conserving surgery (BCS) and those who underwent modified radical mastectomy (MRM). It was also observed that 20-45% of the patients continued to have a psychiatric disorder 1 year after the operation; 10% still had serious disorders 6 years after the operation (33). In a study consisting of 303 patients who underwent BCS or MRM, Kissane et al. found that 45% of the patients had various psychiatric disorders, 42% of whom had depression and anxiety, 27% had minor depression, 9.6% major depression, 8.6% solely anxiety, 6.9% phobic disorders, and 20% had 2 or more disorders (34). The diagnosis and treatment of psychiatric disorders may be helpful in increasing patients' adherence to therapy and quality of life (5). In this context, it is of high importance to identify mental problems and underlying factors in order to understand patients better, to facilitate adjustment to their new state, and to plan a proper treatment approach.

### Depressive Disorder and Anxiety Disorders

Cancer involves a high probability of occurrence of psychiatric disorders, notably depression, anxiety, and adjustment disorders. The frequency of depression among patients with cancer ranges from an extremely low rate of 1% to considerably high rates such as 50%, partly due to the differences in cut-off scores suggested by varied diagnoses and scales (35). A review on this issue reported that 10-25% of patients with cancer were diagnosed with major depressive and clinically significant depressive symptoms (36). These rates imply that prevalence of major depression is 2-3 times more among patients with cancer as compared with the general population (37). Among young and middle-aged women receiving chemotherapy, levels of anxiety are usually higher (38). Patients with cancer who are diagnosed as having depression are reported to simultaneously have generalized anxiety disorders (24%), panic disorder (18%), and posttraumatic stress disorder (PTSD) (30%) (39). Patients with breast cancer cases involve a frequency of 19% according to a study conducted in our country, and of 16.7% according to a study performed abroad (40, 41). Depression in patients with cancer was confirmed to have extended the duration of hospitalization and reduced the quality of life (42). Another study found the prevalence of depression in patients with breast cancer as 9%, with an emphasis on the fact that 24% of the patients with depression had increased symptoms of depression over the course of their follow-up (43).

It is also specified that 4 in every 10 patients with breast cancer experience high levels of anxiety or depression (44). A study that assessed the patients during both the preoperative period and 3<sup>rd</sup> and 12<sup>th</sup> months within postoperative period detected that 55% of patients had anxiety and/or depression at any one or more assessment (45). In another study conducted on 503 patients with breast cancer, this rate was found as 45.3% among patients with early-stage disease and 37% in patients with advanced-stage disease (46). A study that employed the HAD scale to assess 1083 patients whose breast cancer diagnosis was received an average of 47 months previously determined anxiety and depression among 38.2% and 22.2% of the patients, respectively (47). Another study conducted on 84 women with breast cancer assessed the patients at pre-op, post-op 1-3 month, and post-op 9-12 month periods, and found anxiety rates of 33.3%, 35.7%, and 28.6%, respectively, and depression rates of 40.5%, 42.9%, and 44.0%, respectively; no statistically significant difference was observed in terms of average scores of anxiety and depression, as distributed to those three periods. The patients were found to have indicated lower scores of physical, psychological, and social relation dimensions of quality of life, as well as overall perceived quality of life, and perceived health status scores in

both early and late stages of the post-op period compared with pre-op period (48).

Another study that evaluated patients with breast cancer six times for a period of five years, from the initial diagnosis, reported that the depression rate was highest (48%) in the first year following initial diagnosis (49). Vahdadina et al. (50) found that even though average scores of anxiety and depression decreased over time, anxiety and depression rates were calculated as 38.4% and 32.3%, respectively, in the 18<sup>th</sup> month according to the cut-off score of the HAD scale (51). Hopwood et al. (52) evaluated 211 patients with advanced breast cancer using the HAD scale and confirmed an anxiety and/or depression rate of 27%. They also found that 155 patients continued to display signs of anxiety and/or depression after 1-3 months. According to another study that assessed depressive symptoms before the diagnosis of breast cancer, as well as in the post-op 1<sup>st</sup>, 3<sup>rd</sup>, 6<sup>th</sup>, and 12<sup>th</sup> months (50), the pre-diagnosis rate of depression of 40.9% decreased to 27.8% within 1 year, and depressive symptoms recovered over time (53). Burgess et al. (49) similarly indicated that the frequency of anxiety and/or depression in women with breast cancer was twice more than the general female population.

The consequence of patients with cancer developing anxiety and depression during treatment process is that their level of understanding and comprehension and skills to use coping methods deteriorate, it becomes more difficult for them to build social interactions, their adherence to treatment reduces, and their duration of hospitalization increases, which is accompanied by increased treatment costs and worsened quality of life (54-57). Psychological issues appearing in patients with cancer were reported to be associated with physical status, pain, sufficiency, emotional well-being, social relations, adjustment to disease, and relevant roles (58). Accompanying physical symptoms, cancer treatment that reduces quality of life, and a patient's disease-induced functional losses all make identification and treatment of depression more difficult (59). On the other hand, existing studies on patients with breast cancer indicate that psychiatric morbidity is associated with increased symptom load, decreased adherence to therapy, and deteriorated quality of life (40, 59, 60) (Table 1).

**Suicide**

Frequency of suicide among patients with cancer is relatively higher with a relative risk of two times more than the general population (61, 62). Factors such as non-controllable pain, untreated depression, insufficient social support, substance use, history of suicide in the family, and deprivation could increase the risk of suicide (63-65). With a frequency of 8% among patients with cancer, suicide ideation may turn into actual attempt at a rate of 2-6%, particularly in the terminal stage (66, 67). Studies on this subject report that the risk of suicide considerably rises in cases accompanied by depression. Moreover, factors such as substance abuse, hopelessness, lack of social support, and advanced state of disease increase such risk (64, 65, 67). Although most patients with breast cancer are well-adjusted, single patients with advanced-stage breast cancer who have poor socioeconomic conditions have been found to have a higher suicide risk (68).

**Sexual Dysfunction**

The breast is a highly important organ because it symbolizes femininity and sexuality, surgical removal because of cancer poses a threat to senses of sexuality, motherhood, and attraction, and the patient's body image (3). Breast cancer involves a certain degree of malignancy, which leads to sexual dysfunction more than other cancer types because mas-

**Table 1. Depression and Anxiety in Patients with breast cancer**

Hopwood et al. (52) 1991	Depression and anxiety 27%
Ramirez et al. (45) 1995	Depression and anxiety 55%
Pasacreta (43) 1997	Depression 9%
Gallagher et al. (44) 2002	Depression and anxiety 40%
Kissane et al. (46) 2004	45.3% (early stage) 37% (advanced stage)
Lueboonthavatchai (41) 2007	Depression 16.7%
Mehnert et al. (47) 2008	Depression 22.2%
	Anxiety 38.2%
Christensen et al. (51) 2009	Depression 32.3%
	Anxiety 38.4%
Karakoyun et al. (40) 2010	Depression 19%

tectomy is a common procedure (69). It is also reported that sexual life of patients with breast cancer is negatively affected by surgical intervention, radiotherapy, chemotherapy, and/or hormonal treatment through deterioration of physical well-being (70). The sexual lives of women who are diagnosed as having breast cancer are not different from those of any health individual (71). A study that investigated sexuality after breast cancer treatment underlined that the sex life was ignored following diagnosis of cancer, notably in Asian countries (72). Eighty-two percent of patients who received active treatment shared their sexual concerns with healthcare staff, the remainder stated that sexuality was the last thing on their mind during treatment (73). Radiotherapy and chemotherapy-induced fatigue decreases sexual appetite and activity of the patient (74). Other major factors that reduced sexual appetite of patients with breast cancer were reported as loss in breast tissue, hair loss, pain, body image, childbirth capacity, and changes in perception of medical status (75).

**Sleep Disorders**

One of the most common symptoms seen in patients with cancer is insomnia (76, 77). The prevalence of sleep disorders among patients with cancer is reported as 50%, with a higher frequency in women and more frequent occurrence among patients with breast cancer compared with other cancers (78). When a patient has terminal cancer, sleep disorders and other symptoms increase to a considerable extent, especially in the terminal stage, which negatively impacts on quality of life (79, 80). Some other symptoms usually experienced by patients with cancer include acute or chronic pain, anxiety, nausea-vomiting, depression, delirium, fatigue, infections, and high fever, which may lead to

sleep disorders. It is known that sleep disorders in patients with cancer increase mortality (81). Patients with breast cancer report higher prevalence of insomnia compared with patients with other types of cancer (from 38% to 61%) (82-85). Even though insomnia in patients with breast cancer can be associated with various factors such as psychological distress arising from the cancer diagnosis, or adverse effects of cancer therapy, patients who receive adjuvant endocrine therapy may still remain at increased risk for insomnia because of the occurrence of menopausal symptoms triggered by this therapy (86,87). A former study on the prevalence of insomnia among patients with breast cancer detected that 19% of the participants met the diagnostic criteria for an insomnia syndrome (82), and this finding was nearly identical to the clinically-significant insomnia (18.6%) reported in the present study (88). In this context, the ascertained significant risk factors for insomnia included psychological symptoms of depression and anxiety. One should not be surprised to discover a relationship between these symptoms and insomnia given the fact that psychological symptoms and insomnia are not necessarily independent of one another, and insomnia is a defining symptom of depression and generalized anxiety. It is also implied by these findings that sleep may be improved with the help of treatments devoted to rehabilitating depression and anxiety. There is another significant association found between drug use and insomnia. Higher intake of sleeping aids was significantly associated with clinical insomnia (88). A large number of women (63%) reported one or more sleep disorder types, with 37% using sleeping pills in the last 30 days. Difficulties in falling asleep were significantly linked to greater pain and symptoms of depression. Problems related with waking up at midnight were significantly associated with greater depression and less education. On the other hand, greater depressive symptoms and less social support were found to lead to the problems in waking/getting up at a significant level (89).

#### **Psychiatric Symptoms Arising from Breast Cancer Treatment**

Even though central nervous system toxicity is known to be based on chemotherapy, radiotherapy, and hormonal therapy procedures, the exact causes remain unclear. A study that compared cognitive function between patients with breast cancer who received chemotherapy and a control group indicated that cognitive functions of the patient group were more disordered than those of the control group (90). Patients who receive chemotherapy usually report changes in their cognitive functions. This state is also referred to as 'chemo-brain,' and includes the symptoms such as memory impairment, absence, and lack of concentration while doing daily life activities (91). Depending on the application of methotrexate, one of the chemotherapeutic agents, central nervous system toxicity may be seen in 3-11% of the patients on average. Toxic symptoms may manifest themselves in the form of changes in consciousness, leukoencephalopathy, seizure, cerebral infarction, paralysis, neuropathy, and ototoxicity (92). Corticosteroids, on the other hand, cause a great variety of cognitive disorders and mood changes (94). Radiotherapy may be responsible for short-term memory loss or decreases in academic success in the long term (93). Moreover, steroids and medications used in symptomatic treatment such as metoclopramide, an antiemetic drug, can lead to anxiety. Drugs that cause encephalopathy and delirium may simultaneously give rise to anxiety (94).

#### **Psychosocial Problems in Patients with Breast Cancer**

Apart from the stigmatization effect caused by breast cancer, other problems may appear associated with changes in femininity, sexuality, and fertility (95). One of the most important determinants of recovery from breast cancer is the patient's psychiatric state prior to diagnosis of cancer (96).

Diagnosis and treatment of breast cancer may induce psychological challenges such as anxiety, depression, anger, uncertainty about the future, hopelessness, desperateness, fear of recurrence of cancer, fear of separation from relatives, fear of pain, decrease in self-esteem, impairment of body image, fear of losing sexual capabilities, anxiety of not being loved or shown interest, and fear of death (97-99). A patient who experiences or displays these kinds of anxieties or symptoms may react in various ways including shock, denial, anger, depression, reflection, psychological regression, hopelessness-desperateness, weariness, and pathologic dependence (100). A study conducted on 275 patients with breast cancer reported that a statistically greater part of patients experienced psychological troubles (101). In addition to these, therapies cause several adverse effects, the most common ones were loss of energy, fatigue, pain, nausea and vomiting, hormonal changes, and sleep disorders; all of these adverse effects impair daily life functions of patients (102, 103). Physical symptoms, fatigue in particular, were reported to have a huge impact on quality of life, which gave rise to the formation of physiologic and psychological symptoms (104).

Psychosocial factors that affect the cancer can be listed as follows: personality structure, sociocultural features, psychosocial stress factors, negative feelings about the disease in the form of thinking about negative aspects such as death threat, coping methods, past experiences, lifestyle, and genetic characteristics (105, 106). Studies on chronic diseases have shown that psychiatric diseases such as depressive disorder have an environment in which they develop in an easier way in cases where social support is inadequate. It was also proven that psychosocial stress was influential in a negative way on the medical condition of those who received very little or lacked social support, and had very little or no effect on those supported by stronger systems (107). Lack of emotional and material support in patients with cancer is particularly considered to be act as a risk factor for psychiatric diseases such as anxiety and depression (108). Psychosocial stress factors reported to be prevalent in almost half of patients are more common among the patients with cancer with psychiatric disorder. The patients in this group stated that their spouses and children, who are normally sources of emotional support, could not understand them adequately, failed to be helpful at the treatment stage, and left them alone (9).

It was emphasized that support by a spouse increased patient's adherence to therapy (109). Studies also report that the patients with breast cancer have expectations of emotional support from their spouse and they adapt themselves to the treatment process more easily thanks to such support (110, 111). Uncertainty and fear often lead to an increase in a patients' need for social support. Efforts to understand patient relatives, disease, and the patient would probably change the perception of such situation as a stress factor and reduce related psychiatric problems (112, 113). The quality of life of patients and their relatives can be elevated by determining the social support perceived by the patients, planning the care to be provided, and incorporating the family into the care (114).

#### **Impacts of Psychopharmacologic Drugs on Breast Cancer**

Psychiatric treatment holds an important place in prognosis and adherence to the treatment of breast cancer. According to a study that analyzed the linkages between psychiatric comorbidity and patients with breast cancer who had started to receive psychiatric treatment, 29% of the patients were diagnosed as having a psychiatric disorder, 9% with a major depressive disorder and 6% with generalized anxiety disorder. Fifty-two percent of the patients were determined to have received psychotropic treatment over the course of disease, and 48% started psychotropic treatment without receiving any psychiatric di-

agnosis. Out of those who received treatment during cancer therapy, 80% were found to be on medication for major depressive disorder, and half were using drugs for generalized anxiety disorder (115).

The latest studies indicate that recognition of genotypes to establish metabolized activation of psychiatric drugs is considered as an effective method before starting treatment (116). Vasomotor symptoms such as hot flushes may develop as a result of anti-estrogen treatment or possible depression or anxiety. Studies on this have shown that SSRI and SNRI group psychiatric drugs reduce these symptoms in the menopausal period and in patients with breast cancer who received endocrine therapy. These are reported to be the drugs that contain active substances such as venlafaxine, escitalopram, and paroxetine, and more effective as compared with placebo. However, other studies have indicated that concomitant use of certain SSRI medications that inhibit the CYP2D6 enzyme, and anti-estrogen drugs such as tamoxifen reduces the impact of tamoxifen, and may affect the recurrence of breast cancer (117). Apart from SSRI and SNRI, antipsychotics, which are widely used in psychiatric treatment, were also found to generate some adverse effects when used in patients with breast cancer. It was considered that because patients with breast cancer had prolactin receptor overexpression, antipsychotics could trigger the activation of prolactin receptor, leading to tumorigenesis and proliferation of cancer cells in some patients (118). According to a case-controlled study conducted on the basis of the hypothesis that breast cancer could develop due to the use of antidepressants, it was found that SSRI and other antidepressants did not increase the risk of breast cancer; nevertheless, such risk might scale up due to use of tricyclic antidepressants for more than 2 years (119). A similar study concluded that exposure to tricyclic antidepressants at higher doses for more than 10 years would partly escalate the risk of getting breast cancer (120). SSRIs that affect the CYP2D6 enzyme system such as paroxetine were also found to increase mortality risk in patients with breast cancer (121).

## Conclusion

Patients with cancer may show emotional and behavioral changes during diagnosis and treatment processes. This may manifest itself both at a level of psychiatric disorder and in the form of mild emotional symptoms and behaviors. Psychiatric disorders may include anxiety, depression, adjustment disorders, and other psychiatric diagnoses that would likely be induced by medication and general medical condition. A review of the existing literature indicates that anxiety and depression are intensified during treatment, which deteriorates the quality of life. The team in charge of breast cancer treatment should have a good command of physical and psychosocial symptoms that may lead to anxiety and depression, and should be able to develop patient-specific treatment and care standards by evaluating the existing levels of depression. It is also necessary to deal with quality of life of patients with cancer and to provide them with emotional and psychosocial assistance. Each and every change in this process should be closely followed up under the supervision of specialist; all types of mental changes that affect adherence to the treatment process should be intervened in a timely manner, and social and medical support should be reconsidered.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept - F.İ., V.Ö.; Design - F.İ., A.S.İ.; Supervision - F.İ.; Funding - F.İ., A.S.İ., E.F.; Materials - F.İ.; Data Collection and/or Processing - F.İ.; Analysis and/or Interpretation - F.İ., E.F., A.S.İ.; Literature Review - F.İ., E.F.; Writing - F.İ., E.F., A.S.İ.; Critical Review - F.İ., V.Ö.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

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