

# PREVALANCE OF DEPRESSION AND ANXIETY IN PATIENTS DIAGNOSED WITH BREAST CANCER

Comment [DE1]: Spelling mistake

Comment [DE2]: This word not appropriate for hospital based study, its for population based study

## ABSTRACT

**Background:** Breast cancer is the most common cancer in women. Disease itself with the treatment has impacts on self-image, and the sexual relationship of patient. Most patients experience psychological reactions, and have psychiatric morbidities, mainly anxiety and depressive disorders. Although anxiety and depressive disorders are common in breast cancer and worsen the disease course and treatment outcomes still these psychiatric disorders are ignored and left untreated. Understanding these common psychiatric disorders can help to plan for treatment and may result in more treatment success.

**Methods:** A prospective study was carried out on 53 patients of carcinoma breast. Depression was assessed using the Hamilton depression rating Scale (HDRS) and Anxiety was assessed using Hamilton Anxiety Rating Scale (HAM-A). The data was collected and assessed using appropriate statistical tool.

**Results:** The average age of women in research was 53.56 years. Of the 53 patients, 38.2% had depression. Among patients with depression, 22% had moderately severe to severe depression. 32.2% of patients had anxiety disorder and ,20% had moderately severe to severe anxiety disorder.

Comment [DE3]: SD?

**CONCLUSION:** Depression and anxiety are common among breast cancer patients. A comprehensive public health initiative is required, including social, financial and environmental support that can provide better quality of life for breast cancer survivors.

Comment [DE4]: Better use past tense

## INTRODUCTION

Breast cancer is the most common cancer which is being diagnosed worldwide and remains the leading cause of cancer death in women. There has been almost 1.4 million new breast cancer cases and 458,000 deaths in 2008.[1]

The disease has been considered terrifying because of its high mortality rate, its impact on self-image and sexual relationship.[2] The different modalities for treatment of breast cancer include surgery, chemotherapy, radiotherapy and hormonal therapy. All four of which can be used alone or as combination.[3] Surgery is the primary treatment for breast cancer and chemotherapy & radiotherapy are adjuvant therapies ,These are used after primary treatment to inhibit metastasis and thus enhance long-term survival rates.[4]

The number of survivors of breast cancer has significantly increased in past years. This is because of the advances in detection and treatment. However, the treatment exposes the patients to various

treatment side-effects. Cancer and treatment-related symptoms can lead to stress in a patient with breast cancer who is undergoing treatment for the disease. [5]  
Hence addressing the impact of breast cancer and its treatment on long-term outcomes is an important issue. [6]

Studies have shown that about a third to a half of female breast cancer patients are likely to experience psychological distress.[7] The prevalence of depression ranges from 1.5% to 50%, depending on the sample, and particularly the definition of depression and method of assessment.[8,9]

Emotional distress in cancer patients is associated with a reduction in overall quality of life among patients. It has a negative impact on compliance levels with medical treatment and carries an increased risk of mortality, so emotional distress is recognized as the sixth vital sign in cancer care.[10] The patients with cancer and co morbid depression have worse anxiety, pain, fatigue, and functioning than other patients with cancer. They are more likely to have suicidal thoughts [11]. Even the effect that distress has on daily functioning; distress in cancer patients is often overlooked and under-treated [12]. Having breast cancer or receiving treatment has been seen as a traumatic experience to women due to its impacts it has on their self-image and sexual relationship. Most of the breast cancer patients thus have psychological reactions viz. denial, anger, intense fear toward their disease and treatment process and many have psychiatric morbidities [2].Patients experience fatigue, depression, and/or anxiety months to years after their breast cancer diagnosis.

These symptoms have been associated with greater disability and a poorer quality of life [13]. Depressive disorders include major depressive disorder, dysthymic disorder and adjustment disorder with depressive mood and mixed depressive and anxious mood disorders.

Other psychiatric disorders commonly seen in breast cancer patients include Anxiety disorders including generalized anxiety disorder, post-traumatic stress syndrome and adjustment disorder with anxious mood [14].

The prevalence of depression is higher during the first year after breast cancer diagnosis. Zainal et al did a systematic review in which the three studies with the highest prevalence of depression included patients in their first year after diagnosis. One study demonstrated that in a very large sample of cancer patients that the prevalence of depression among breast cancer survivors was about 32.8%.[15] Second study with 227 advanced breast cancer it was found that 42% had psychiatric disorders and 35.7% of these had depression or anxiety or both. Minor depression was found in 25.6%, major depression in 7% and anxiety disorder in 6.2% [16]

It has also been reported that 40% of the patients having disease recurrence would suffer from anxiety and depression [17].

Risk factors for anxiety and depression in women with breast cancer include: Past history of anxiety or depressive disorder, younger age at diagnosis, poor social support, burdensome somatic symptoms,

currently undergoing active cancer treatment, specific drug treatments (Beatty and Kissane, 2017), worries regarding fear of death and disease recurrence, altered body image [17], alteration of femininity, sexuality and attractiveness (Reich et al., 2008).

UNDER PEER REVIEW

Adjuvant therapy may lead to an increased risk of depression, anxiety, or both during but not after treatment (Burgess et al., 2005).

**Comment [DE5]:** All references should be mentioned in one way as pointed out by target journal guidelines

Treatment options include psychological interventions such as cognitive behavioral therapy; supportive-expressive group therapy and yoga have demonstrated positive effects on breast cancer patients, while classic pharmacotherapy, such as antidepressants, should be reserved for cases of true depression [18]. The purpose of this study was to assess prevalence of Anxiety and depressive disorder in patient diagnosed with and undergoing treatment for Carcinoma Breast, in order to identify independent predictors of mental health disorders risk.

Even after an effective treatment of the physical disease, such psychological distress may persist and accompany the patient for a long period, which has a negative impact on the patient's quality of life. [19, 20]. In most oncology settings, the treatment focuses only on the physical symptoms whereas the psychological distress is often overlooked.

Understanding these common psychiatric disorders and associated psychosocial factors found in breast cancer patients can help to plan for effective treatment of these patients and may result in more treatment success. In this study, we aimed to assess prevalence of Anxiety and depressive disorder in patient diagnosed with and undergoing treatment for Carcinoma Breast.

## METHODS

A prospective study was carried out in a total of 50 cases were included in study. All the patients of Carcinoma Breast undergoing treatment were included in the study series. The data was collected by interview technique. Statistical method was done using statistical package for social sciences (SPSS) version 23.0.

**Comment [DE6]:** Study dates and setting?

All the samples completed two questionnaires:

1. Hamilton Anxiety Rating Scale (HAM-A)
2. Hamilton depression rating Scale (HDRS)

Inclusion Criteria:

1. Histologically documented diagnosis of breast cancer
2. Woman, 18 or more years of age
3. No history of prior mental disorder and dementia
4. No abuse of alcohol or drugs
5. Patients giving consent for study.

Exclusion Criteria:

1. Patients not giving consent for study .
2. Patients having any previous history of any psychiatric or mood disorder.

**Comment [DE7]:** Mentioned whole procedure for this study

## RESULTS

### Clinical and Sociodemographic Characteristics

A total of 53 breast cancer patients were included in this study. The mean age of the patients was 53.25 years (SD=12.10) and the majority of them were found in the age range of 40-59 (55.9%). Overall, 57.2% and 23.7% respondents were urban and rural residents, respectively. Most respondents were married (55.3%) and had 2 to 3 children (55.9%). The majority of the study participants were Orthodox Christianity followers (88.8%).

As far as the clinical characteristics of the sample, 69.7% of the patients underwent mastectomy. Chemotherapy was received by 46.1% of patients as adjuvant therapy, 15.8% radiotherapy and 38.2% received both chemotherapy and radiotherapy. %% of patients used "Tamoxifen". Majority of the respondents were in the second (28.3%) or third (44.1%) stage of breast cancer. Regarding the current activity - burden of symptoms, most of patients had a normal activity without any symptoms ("very good level", 32.2%) or they had some symptoms but it did not require bed rest during the day ("good level", 35.5%). A high percentage of the study participants declared that they required bed rest less than 50% of the day ("moderate level", 18.4%). Also, 13.8% of patients stated that they required bed rest more than 50% of the day ("bad level") or they could not get out of bed ("very bad level").

Table 1: TOTAL SCORES OF STUDY SCALES:

**Comment [DE8]:** Very deficient results. Editor and statistician to please look into it

SCALES	n	(%)
PHQ-2 (total score)		
≥3(presence of depression)	19	38
<3(absence of depression)	31	62
mean±sd	2.05±1.74	
GAD-2 (total score)		
≥3(presence of anxiety)	16	32
<3(absence of anxiety)	34	68
mean±sd	1.97±1.85	

### Prevalence of Depression and Anxiety

The mean total score of HDRS and HAM-A questionnaire was 2.05 (SD=1.74) and 1.97 (SD=1.85) respectively. According to the cut off points of depression (HDRS score ≥ 3) and anxiety (GAD-2

score  $\geq 3$ ), a high percentage of the breast cancer patients were at risk for psychiatric disorder. Specifically, the screening method showed prevalence 38.2% (20/53) for depression and 32.2% (17/53) for anxiety. Total scores of study scales are shown in Table 1.

## DISCUSSION

The purpose of this study was to assess the prevalence of depression and anxiety in breast cancer patients. According to our results in the 38.2% of the patients. 32.2% of them experienced anxiety symptoms. The place of residence, religion, and current activity - burden of symptoms emerged as significant predictors of elevated depressive and anxiety symptoms.

Depression and anxiety are frequently diagnosed following the diagnosis of breast cancer and efficient ways of detecting those patients who are in risk for psychological distress is vital. [21] In the already burdened mental state after the diagnosis of breast cancer, they add to the difficulties due to both therapeutic methods such as mastectomy and chemotherapy and a series of social and family problems that can escalate this condition (Dean, 1987). Moreover, psychological distress (symptoms of depression and anxiety) has been associated with poorer physical function [22] and high mortality risk [23]

Approximately 38% of the breast cancer patients in the study were diagnosed with depression and 32% of them with anxiety based on HDRS and HAM-A questionnaires. In a recent study conducted by Fradelos et al (2017) the prevalence of depression and anxiety in breast cancer patients were 54.5% and 46.8% respectively, similar findings were reported from other studies as well.

Age, area of residence, marital status, education level, religious affiliation, stage of cancer and symptom burden were found to be associated with presence of depression. In our study not only the place of residence, religion, and current activity but burden of symptoms were identified as significant predictors of depression risk. Despite the fact that age, place of residence, marital status, educational level, religion, stage of cancer, and current activity - burden of symptoms were correlated, at 10% level of significance, with anxiety disorder similar only place of residence, religion, and current activity - burden of symptoms were emerged as significant predictors of elevated anxiety symptoms.

One finding of our study was that less educated women dealing with breast cancer was more likely to experience depression and anxiety symptoms. The finding reinforces the findings from the existing literature and supporting the assumption that education can be a protective factor in the occurrence of depression and anxiety among women dealing with breast cancer. [24,25] This finding can be attributed to the fact that women with higher educational status can have better access to information regarding their health condition and be fully aware and understand the treatment plan and what is to be expected from it.

Moreover area of residence found to be a significant predictor for depression and anxiety for breast cancer patients. The association of depression and anxiety and area of residence in breast cancer and in cancer patients in general is a conflicted finding in the existing literature as there are many studies supporting this relation and many studies which opposes it (Lavdaniti et al. 2012). According to our results patients who lived in rural areas were most likely to experience anxiety and depressive symptoms finding that confirmative to previous studies (Ell et al., 2005). This finding can be partially explained due to the poor accessibility to health care services that rural population faces (Arcury et al., 2005; Pappaspyrou et al., 2015). This along with the uncertainty that cancer arise for the individual can elevate the depression and anxiety symptomatology among breast cancer patients. Finally, according to our results patients who were diagnosed in stage IV of breast cancer were in a high risk for depression and anxiety compared to stage I patients. This finding is in accordance to a recent study among breast cancer in Greece (Fradelos et al., 2017) in which stage IV breast cancer patients were 1.9 ( $p=0.003$ ) more likely to experience depressive symptoms. Moreover, symptom burden were found to be a significant predictor for depression and anxiety in our study. This finding is confirmative for previous studies concluding that depression and anxiety are associated with higher symptom burden and worse physical functioning (Inhestern et al., 2017; Fradelos et al., 2017; Mustian et al., 2012).

In conclusions, there is a high prevalence of anxiety and depression among breast cancer patients. Being rural resident and experiencing extend symptom burden can be predicting factors associated with depression and anxiety in breast cancer patients. Early detection and proper referral can contribute in addressing these conditions and thus increase quality of life and survival in breast cancer patients.

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**Comment [DE9]:** Cite all references in proper way as pointed out by target journal guidelines

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