

Frequency of Anxiety and its Associated Factors among Breast Cancer Patients Undergoing Treatment in Faisalabad

Kaneez Uma Farva Kousar and Sarfraz Masih

ABSTRACT

Objective: To determine the frequency of anxiety and its association with demographic and disease related factors among breast cancer patients

Methodology: A cross sectional analytical study was conducted from August 2022 to May 2023 at two public tertiary care hospitals of Faisalabad. The Study population consisted of the female patients with breast cancer visiting for treatment to the Oncology departments of public tertiary care hospitals Faisalabad. A nonprobability purposive sample of n=319 participants was recruited. All participants were given close ended questionnaires along with further detailed sheet of information. A written consent was implied to every participant along with the questionnaire. After data collection it was entered and analyzed in SPSS version- 21.

Results: Findings revealed that 60% and 37% of the Subjects have mild and moderate Anxiety levels. Findings also revealed that age, education and patients having minors had significant association with the level of anxiety. Moreover type of treatment for breast cancer and disease duration also showed significant association with anxiety levels.

Conclusion: Anxiety is prevalent among female breast cancer patients and significantly associated with the demographic and disease related factors.

KEYWORDS: Breast Cancer, Anxiety Levels, Female Patients.

INTRODUCTION

Globally, one of the most dreaded diseases among women is breast cancer, which has been linked to a high degree of alterations in psychological disorders including anxiety. Breast cancer diagnosis and treatment have a profound impact on a woman's physical, emotional, social, and spiritual health.¹ Pakistan has poor screening and early diagnosis rates for breast cancer. It should be noted that more than 30% of breast cancer cases are identified in stages III and IV. Mammography cannot be used to identify breast cancer early in a populous nation like Pakistan with limited resources. Women in Pakistan only seek medical attention for breast cancer when it reaches advanced stages due to a lack of knowledge about the disease.² Breast cancer is still the second greatest cause of mortality for women worldwide,

both in developed and developing nations, despite recent advancements and significant advances in screening, diagnosis, and treatment. Globally, 2.3 million women received a breast cancer diagnosis in 2020, and 685,000 people died from the disease.³ Up to 9.6 million individual's worldwide pass away from cancer each year. Asia's highest breast cancer incidence rate is in Pakistan. As 1.38 million new instances of breast cancer are discovered each year in Pakistan, 0.458 million women die from the disease each year, the number of breast cancer patients is expanding quickly.⁴ Patients are particularly burdened by a range of mental distresses, such as anxiety and depression, in addition to treatment costs. The sensation of worry, anguish, and unease of an impending threat is described here as anxiety. According to a research, anxiety was the main source of emotional suffering for cancer patients.⁵ In particular when a cancer diagnosis is present, depression manifests as persistent feelings of hopelessness, dissatisfaction, loss of energy, lack of focus, and sleeplessness.⁶ Anxiety is among the most prevalent symptoms among the breast cancer population, yet observations often under predict and under treat them.⁷ Anxiety shortens a patient's lifetime and has an

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impact on their general quality of life. Patients with advanced illness frequently experience anxiety, which is linked to physical impairment, heightened health challenges, and a poor quality of life.⁸

Consequently, clinical conditions of person with anxiety appears to be highly uncomfortable and unacceptable which may lead to dysfunctions among the affected individuals like unpleasant and disruptive thoughts about end of life and frequent recurrence of ill health, focus and concentration impairment, poor decision-making, sleep deprivation, frequently reflecting on death, and more carefully it is considered as a criteria for defining anxiety among cancer patients.⁹

According to previous studies, 1.5 to 55% of breast cancer patients report suffering depression after six months of receiving their diagnosis. Variations in the research's time period, depression definition, sickness stage, and study population may be to blame for the wide range of estimates of the frequency of depression. Researchers have also discovered that young cancer survivors exhibit higher rates of anxiety and despair than older ones do.⁹ The objective of this study was to determine the frequency of anxiety among breast cancer patients and to determine it's with demographic and disease related factors among breast cancer patients

METHODOLOGY

A cross sectional study was conducted at two public tertiary care hospitals, Allied Hospital Faisalabad and PINUM Cancer Hospital Faisalabad. Permission was granted from Research Ethics Committee (REC) of University of Lahore (UOL) with Ref No: REC-UOL-324-02-2023. Permission was taken from head of both study settings. The study was conducted from August 2022 till May 2023. The Study population consisted of the female patients with already diagnosed breast cancer of stage I-III, both unilateral and bilateral, having age 25 to 65 years and were mentally competent, visiting for treatment. Those patients who were having comorbidity like impaired cognition, experiencing severe organ failure, having history of psychiatric illness or having trauma or death in the family were excluded from the study. A nonprobability purposive sample of n=319 participants was recruited. The rules and regulations set by the research ethical committee (REC) of the University of Lahore were followed while conducting the research and the rights of the research participants

were respected. Sample was calculated using Open epi software. Sample size (n) of 319 cases was calculated with 95% confidence interval, 5% (0.05) margin of error (d), $Z=1.96$ and expected percentage of anxiety (P) among breast cancer patients was 29.4%¹⁶ Sample size was confirmed

by following formula $n = \frac{Z_{1-\alpha/2}^2 p(1-p)}{d^2}$.

Written informed consent was taken from all the participants and confidentiality was assured. The Zung Anxiety self-assessment scale (SAS) was used to collect data. It consisted of 20 questions each given four options, answers to all these questions provided the number that grading from 1 the lowest to 4 the highest (1= none or little of the time, 2= some of the time, 3=good part of the time, 4= most, or all of the time). The total raw scores range from 20 to 80. Score cut-off values to determine the clinical interpretation of one's level of anxiety is as follow: Score < 45= no anxiety, score 45–59 =mild anxiety, score 60–69 = moderate anxiety, score > 70 severe moderate. Participant's information was recorded on questionnaires. Participants were kept anonymous throughout the study.¹⁰

After the data collection it was entered and analyzed in SPSS version- 21. Quantitative variables were presented in the form of mean \pm standard deviation. Qualitative variables were presented in the form of frequency and percentages. Pearson chi-square test was used to present the association of anxiety with the demographic and disease related factor

RESULTS

Total participants were 319 and a brief overview of the highlighted findings are given below: Table 1 presents the demographic characteristics of the participants. The largest proportion of participants, comprising 45.5%, fell within the 56-65 years age range while smaller proportion of patients were fall in 25-35 years of age group. The majority of the patients had completed education up to below the high school level (50.8%). A smaller percentage, 17.9% had education levels above high school. Majority 44.9%, of the participants had a monthly income ranging from 31,000 PKR to 40,000 PKR. The analysis of marital status revealed that a significant majority, 90.3%, were married, while a smaller percentage, 9.7%, were unmarried. The provided table also illustrates the distribution of

participants based on their residence, with 50.2% residing in rural areas and 49.8% in urban areas. The participants were also asked about the presence of minor children (young babies direct under care of the patients) in their lives, revealing that 73.7% did not have any minor children, 23.8% had one minor child, and 2.5% of the participants had two or more minor children. Table 2 revealed the disease-related characteristics of the participants, and findings indicated that none of the participants were classified in Stage-I of cancer. Small proportion, 9.7% participants were categorized as Stage II-A, considerable number 43.9% were classified as Stage II-B. The largest segment, comprising 46.4% of the participants, fell into the Stage III category. In

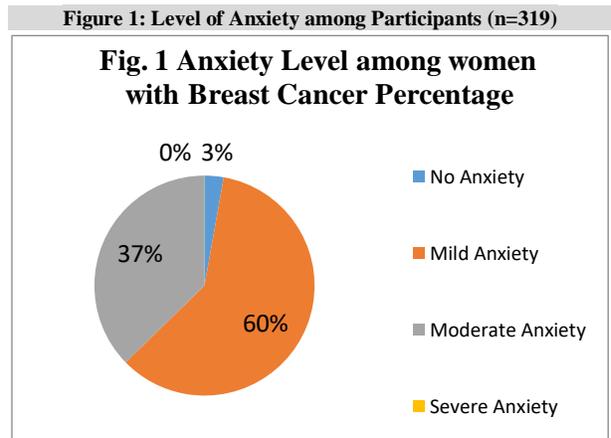
Age in (Years)	n (%)
25-35 years	31 (9.7)
36-45 years	47 (14.7)
46-55 years	96 (30.1)
56-65 Years	145 (45.5)
Education	
Uneducated	14 (4.4)
< High School	162 (50.8)
High School	86 (27)
> High School	57 (17.9)
Monthly Income	
< 20,000 PKR	12 (3.8)
21,000 to 30,000PKR	64 (20.1)
31,000 to 40,000 PKR	175 (54.9)
> 40,000 PKR	68 (21.3)
Marital Status	
Unmarried	31 (9.7)
Married	288 (90.3)
Residence	
Rural	160 (50.2)
Urban	159 (49.8)
Minor Children	
No child	235 (73.7)
One Child	76 (23.8)
2 or more children	8 (2.5)

Pearson Chi- Square test with p value <0.05 as significant terms of treatment type, the majority of patients (51.7%) were undergoing chemotherapy, while 46.4% were receiving radiation therapy. A very

small proportion just 1.9%, were undergoing surgical treatment. A considerable proportion of the participants, approximately 48.6%, had treatment duration of less than 2 years. Additionally, 47.6% of the participants had a treatment period ranging from 2 to 5 years. Only a

Breast Cancer Stage (I-III)	n (%)
Stage I	0 (0.0)
Stage IIA	31 (9.7)
Stage IIB	140 (43.9)
Stage III	148 (46.4)
Type of Treatment	
Chemotherapy	165 (51.7)
Radiation	148 (46.4)
Surgery	6 (1.9)
Treatment Period	
1-< 2 years	155 (48.6)
2-5 years	152 (47.6)
> 5 years	12 (3.8)
Cancer Type	
Unilateral	167 (52.4)
Bilateral	152 (47.6)

Pearson Chi- Square test with p value <0.05 as significant small percentage, specifically 3%, had a treatment duration exceeding 5 years. The analysis of type of cancer among the participants revealed that a significant majority, 52.4%, were having unilateral type of cancer and remaining 47.6% had bilateral type of cancer. 50= Above Figure 1 indicated the anxiety level among breast cancer patients.



Findings revealed that only 3% of the participants had no anxiety, majority were having mild anxiety level and moderate Anxiety levels. Findings revealed that no participants fall in the anxiety level

of severe anxiety (Figure 1). Pearson Chi- Square test with P value <0.05 as significant Table 3 shows the associations of various demographic factors with the level of anxiety among breast cancer female patients. Findings revealed that age has association with the level of anxiety, where the age above 45 years of age showed high anxiety levels (P value =0.005). The education did not show a relationship with the anxiety among breast cancer patients, (P value =1.000). The income status, has association with the level of anxiety, where the age above 45 years of age showed high anxiety levels (P value 0.014).

Table 3: Association of demographics and Anxiety among breast cancer patients (n= 319)

Demo graphic	Variable Status	Mild Anxiety n (%)	Moderate Anxiety n (%)	Pearson Chi Square	P Value
Age	Young Age <45	38 (11.9%)	40 (12.53%)	8.625a	0.005
	Older Age >45	162 (50.78%)	79 (24.76%)		
Education	< High School	110 (34.48%)	66 (20.68%)	.006a	0.936
	High School & Above	90 (28.21%)	53 (16.61%)		
Income	Poor Status	57 (17.86%)	19 (5.95%)	6.458a	0.014
	Satisfactory Status	143 (44.82%)	100 (31.34%)		
Marital Status	Unmarried	16 (5.01%)	15 (4.70%)	1.803a	0.240
	Married	184 (57.68%)	104 (32.60%)		
Residence	Rural	106 (33.22%)	54 (16.92%)	1.734a	0.204
	Urban	94 (29.46%)	65 (20.37%)		
Minor Child	No minor child	160 (50.15%)	75 (23.51%)	11.082a	0.001
	Minor Child	40 (12.53%)	44 (13.79%)		

Pearson Chi- Square test with p value <0.05 as significant

The marital status and the area of residence did not show any association with the anxiety levels (P values=0.240 and 0.204) respectively Moreover, the patients having minor children also had high anxiety levels as evident P value =0.001. Table 4 reveals the relationship of disease related factors and their anxiety level among breast cancer female patients. It was found that stage of cancer did not reveal any association (P value =1.000). The type of treatment showed significant association with anxiety levels among breast cancer patients (P value= 0.001). It was also found that there was a relationship of disease duration with the anxiety among breast cancer patients, indicating that the newly diagnosed patients had more high levels of anxiety (P value= 0.000). The type of cancer (unilateral or bilateral) also showed weak significant association with the levels of anxiety

among the of breast cancer patients (P value= 0.049).

Table 4: Association of disease related factors and Anxiety among breast cancer patients (n = 319)

Disease related Factor	Variable Status	Mild Anxiety n (%)	Moderate Anxiety n (%)	Pearson Chi Square	P Value
Cancer Stage	Initial (< IIA)	19 (5.95%)	12 (3.76%)	0.029a	1.000
	IIB and Above	181 (56.73%)	107 (33.54%)		
Treatment	Chemotherapy	90 (28.21%)	77 (24.13%)	11.614a	.001*
	Radiation	110 (34.48%)	42 (13.16%)		
Duration	< 2 years	75 (23.51%)	80 (25.07%)	26.393a	.000*
	> 2 years	125 (39.18%)	39 (12.22%)		
Type of Cancer	Unilateral	96 (30.09%)	71 (22.25%)	4.069a	.049*
	Bilateral	104 (32.60%)	48 (15.04%)		

Pearson Chi- Square test with p value <0.05 as significant

DISUSSION

In this current study, majority 75% of the participants with breast cancer were 46 years and above. The findings are consistent with a previous study where majority participants had age 46 years and above.¹¹ According to another study the mean age of the patients was 53.25 years (SD=12.10).¹² The majority of the patients had education below the high school level. A smaller percentage, had attained a high school education and above high school. Similar findings were found in a past study in which only a small portion had a higher education level.¹³ Where as in contrast to another past study a very high number of participants had education College level and above.¹¹

A significant portion, 44.9%, had very low monthly income and similarly in a previous study the uncomfortable finance was found among 61% of the participants.¹¹

The analysis of marital status revealed that a good majority, 90.3%, were married in this current study, consistent with the findings of a past study where 76% were married.¹³ The provided results also indicated that 50.2% residing in rural areas and 49.8% in urban areas whereas in previous study (77.5%) were living in urban area.¹³

In terms of treatment type, the majority of patients (51.7%) were undergoing chemotherapy, while 46.4% were receiving radiation therapy. In contrast, a past study found that 69.7% of the patients underwent mastectomy.¹²

This study found a very high frequency of anxiety where 37% had moderate and 60% had mild anxiety. Somewhat similar high frequency of

anxiety symptoms among breast cancer was found in a previous study which was 73.3%.¹³ While another study found that global mortality rate for this disease continues to rise, there has been a simultaneous increase in both the frequency of breast cancer and the utilization of advanced technology for early detection. Consequently, the number of individuals diagnosed with breast cancer has also risen.¹ Similarly a past study revealed that nearly a third (n = 15, 28%) reported moderate-high of anxiety symptoms, 56% low level of anxiety and 17% showed mild level of anxiety. These findings are congruent with findings of this current study.¹⁴ A study found opposite results where a total of 48% of patients had symptoms of moderate anxiety, and 33% had symptoms of severe anxiety.¹⁵ Similarly another study also found high frequency of severe anxiety where the occurrence of cases for moderate anxiety was 55.2% and severe anxiety was 44.8%, for stages I through III.¹⁶

Findings of the current study revealed that age has association with the level of anxiety, where the age above 45 years of age showed high anxiety levels. The education did not show a relationship with the anxiety among breast cancer patients. Moreover, the patients having younger children (Young babies direct under care of the patients) also had high anxiety levels. Anxiety is more prevalent in those under the age of 50, those who earn less money, have lower levels of education or are illiterate, are single, or receive less financial help, according to a binary logistic regression research. People who earn less money, are single, and have less financial support are more likely to suffer from depression.¹⁷ Moreover, in this current study, the marital status and the area of residence did not show any association with the anxiety levels. Contradictory findings were found by a previous cross-sectional research among breast cancer patients revealed that marital status and anxiety among individual with cancer shows statistical relevance.¹⁸

The type of treatment showed significant association with anxiety levels among breast cancer patients. Current study found significant relationship of disease duration with the anxiety among breast cancer patients, indicating that the newly diagnosed patients had more high levels of anxiety. In contrast to this, a Past research in Amman, Jordan reported higher prevalence of depressive and anxious symptomatology in the patient with advanced disease stages.¹⁹ Healthcare

providers in primary and tertiary facilities need to recognize and screen for anxiety and depression among patients with cancer and provide appropriate psychological therapies to reduce the burden of mental disorders in breast cancer patients.

CONCLUSION

Majority of the female patients with breast cancers had mild anxiety, followed by moderate anxiety levels. Furthermore, some demographic characters such as age, education level and income were having association with anxiety. Similarly, few diseases related factors such as type of cancer treatment and duration of disease also have association with anxiety.

Recommendations: It is crucial to recognize and address the anxiety levels of breast cancer patients as part of their comprehensive care. Implementing supportive measures such as psychological counseling, support groups, mindfulness techniques, and relaxation therapies can help to manage anxiety symptoms.

Engaging in open communication between health care providers and patients can also alleviate anxiety by providing patients with accurate information, addressing their concerns, and involving them in the decision-making process.¹⁸ Furthermore, healthcare professionals should adopt a holistic approach that focuses on the overall well-being of breast cancer patients, taking into account their emotional, mental, and social needs. Early identification and intervention of anxiety symptoms are crucial to prevent the potential negative impact on patients' quality of life, treatment adherence, and overall health outcomes.

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Author's Contribution

Kaneez Uma Farva Kousar	Study design, acquisition of data and manuscript writing. Revised and approved the articles.
Sarfraz Masih	Data acquisition, manuscript writing, Reviewed and approved the manuscript.

All authors are responsible for the integrity of the data and the accuracy of the data analysis.

**Data availability statement:* All the data is provided in this manuscript

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