Original Research Article

A study on prevalence of psychiatric morbidity in advanced breast cancer patients at a tertiary cancer hospital in South India

Ramakanth Paniharam[1], Shirish Chakra Chidurala[2],*

[1]Dept. of Psychiatry, Government Medical College, Mahabubnagar, Telangana, India
[2]Dept. of Psychiatry, Oxford Medical College, Bengaluru, Karnataka, India

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ABSTRACT

Background: Breast cancer is one of the most common cancers among women globally as well in India. Breast cancer patients may suffer from psychological morbidity. Psychological problems like depression, anxiety, may affect the quality of life of breast cancer patients.

Aim of the Study: To study the psychiatric morbidity in diagnosed advanced breast cancer patients.

Materials and Methods: A cross sectional study was done in the department of Psychiatry, over a period of one and half years from January 2014 to June 2015 at Osmania Medical College Allied Hospitals (M.N.J Institute of Oncology & Regional Cancer Centre and Osmania General Hospital), Hyderabad, Telangana. Breast cancer patient cases and controls were studied by the General health questionnaire -28 (GHQ-28) Mini International Neuropsychiatric Interview- plus (mini- plus).

Results: This difference in the proportion of psychiatric disorders was statistically significant.

By using MINI plus, 26.7% of breast cancer patients reported psychiatric illness and this percentage was 10% in controls. This difference was not statistically significant at p value of 0.05 (Chi square value 2.78, p value 0.18). The most common psychiatric morbidities were Dysthymia, and MDD seen in 3 (10%) women each.

Adjustment disorder unspecified was found in 2 (6.7%) women. There are statistically significant differences between cases and controls and these differences are circumscribed to domains of recall and language and orientation. The mean total score obtained by cases is 28.60 with a standard deviation of 1.354 and that obtained by the control group is 29.70 with a standard deviation of 0.535. The difference between the two groups is highly significant (p<0.001).

Conclusions: The study brings out the need for identifying psychiatric problems at proper time, referral of breast cancer patients to Psychiatrists and points out the need for establishing psychiatric units in Cancer Institutes.

1. Background

Cancer is a serious and potentially life threatening illness which has an effect on physical and emotional well being of patients and their families. The diagnosis of cancer in itself is a stressful event causing significant psychological distress. In this era of improved cancer care, it is still often believed that pain and death is inevitable for cancer patients. Breast cancer is second most prevalent type of cancer and is equally common in developing as well as developed countries (American Cancer Society, 2013). Despite favorable survival, the most frequent cause of cancer deaths in women is still breast cancer, in developed as well as in developing countries (GLOBOCAN: International Agency for Research on Cancer, 2008). The treatment expenditure of breast cancer is a burden not only

* Corresponding author.
E-mail address: p.ramakanth64@gmail.com (S. C. Chidurala).

for people diagnosed with cancer but also for their families and society as a whole.[1]

Regarding breast cancer, in particular, up to one third of patients may suffer from psychological morbidity during the year following an initial operation; moreover, it is acknowledged that adverse effects of adjuvant cancer treatments may also play a part in psychological adjustment, with problems persisting in a significant proportion of women up to several years following treatment. There is extensive literature on the psychological impact of cancer in breast cancer patients. Reviews of existing research estimate that a third to half of women with breast cancer experience psychological distress and that multiple antecedent and concomitant factors influence psychological functioning of patients over time.

A substantial proportion of cancer patients suffer from psychological distress. In various studies, clinically relevant distress has been reported in 25% of patients. However, this figure ranges from 5% to 50%. The psychological manifestations generally take the form of adjustment disorder, depressed mood, anxiety, impoverished life satisfaction, or loss of self-esteem.[2] In various studies it is observed that psychiatric morbidities, especially cases of anxiety and depression, are prevalent among breast cancer patients. It was found in their study that 38.8%, 29.6%, and 9.2% of the patients had major depressive disorder, generalized anxiety disorder, and panic disorder, respectively. Depression and anxiety scores were high in both partners in love-based, well-adjusted marriages, within the middle socioeconomic class, and among educated couples. Among the well-known factors related to surgical treatment choice (age, parity, tumor size, pathology, grade, lymph node status), only age and psychological morbidity (in the patients and their partners) had a significant impact on treatment choice.

Authors studied psychosocial co-morbidity and its association with knowledge, utilization, and need for psychosocial support in long-term breast cancer survivors.[3] The overall psychological co-morbidity was 43% and 26% for a possible and probable psychiatric disorder. Disease progress, detrimental interactions, less social support, a lower educational level, and younger age were predictors of psychological co-morbidity (p<.004). Higher levels of anxiety (p<001) were observed in cancer survivors compared to age-adjusted normative comparison groups.

2. Aims and Objectives

To determine the psychiatric morbidity in patients diagnosed with advanced breast cancer.

3. Materials and Methods

This was a cross sectional study done in the department of Psychiatry over a period of one and half year from January 2014 to June 2015 at Osmania Medical College Allied Hospitals (M.N.J Institute of Oncology & Regional Cancer Centre and Osmania General Hospital), Hyderabad, Telangana. The patients were divided into two study groups – cases and controls. There were no ethical issues in our study (IEC-1022191911). Written informed consent was taken from all the patients with breast cancer included in the study.

3.1. Method of collection of data

This was a cross sectional study of cases of breast cancer involving administration of a battery of neuro-psychological tests to assess the psychiatric morbidity in patient group and control group which were matched for age and socio-economic status.

A total of 30 patients and 30 controls who fulfilled the inclusion criteria and exclusion criteria (which are stated below) were selected by purposive sampling technique and socio-demographic data was collected. All the patients were diagnosed by the oncologist. A written informed consent was obtained from all the patients, who were prior to consent, informed that refusal to participate would not alter the course of treatment nor would affect the outcome.

3.2. Sampling technique

Purposive sampling technique was used and a case control study was done at Osmania Medical College Allied Hospitals (M.N.J Institute of Oncology & Regional Cancer Centre for Cases and Osmania General Hospital for Controls).

3.3. Instruments for assessment of psychiatric morbidity

General health questionnaire -28 (GHQ-28).
Mini International Neuropsychiatric Interview- plus (mini- plus).

3.4. Instrument for assessment of socioeconomic status

Modified BG Prasad 2014 scale.

3.5. Inclusion criteria

1. Individuals diagnosed with breast cancer by the oncologists at M.N.J. Cancer Hospital for subjects.
2. Individuals attending to the patients of medical departments of the Osmania General Hospital who are willing to participate in the study and have no family history of cancer in first degree relatives.
3. Age 20-60 years of female sex.
4. Matched for age and socio-economic status to the subject sample for controls.
5. Those who have given written informed consent.

3.6. Exclusion criteria

1. Pre-existing neuropsychiatric, neurodegenerative disorder and other significant medical disorders which may influence cognitive function.
2. Individuals with substance abuse/ dependence disorder.
3. Individuals suffering from any sensory impairment that is visual or hearing impairment or learning disability which may serve as a hindrance in performing the tests.
4. Individuals who are on long term corticosteroid therapy.

3.7. Statistical methods

The study as well as control subjects were tested for psychiatric morbidity using GHQ – 28 and MINI Plus-version 5.5.Statistical comparisons are carried out using independent student's t -test for numerical variables and Chi-square test or Fischer's exact test for categorical variables as appropriate. A p-value of < 0.05 is considered statistically significant.

4. Results

A total of 60 subjects, 30 breast cancer patients (cases) and 30 matched women not suffering from cancer (controls) were included in the study.

Table 1: Age distribution of cases and controls

Age in Years	Group		Total n (%)
	Cases n (%)	Controls n (%)	
31-40	10(33%)	18(60%)	28(46%)
41-50	14(47%)	10(33%)	24(40%)
51-60	6(20%)	27%)	8(14%)
Total	30	30	60(100%)

Patients in the age group of 41-50 years of age constituted the majority of the cases (46.7%) and individuals in the age group of 31-40 years constituted the major part of control group (60%) followed by patients in age group of 41-50 years (33.3%). There was no significant difference between the age of cases and control group (p > 0.05). Age was not a confounding factor in the statistical assessment.

Among the cases, 22 were married, 2 were single, 2 were divorced/separated and 4 were widowed. Among the controls 25 were married, 3 were separated/ divorced and 2 were widowed. There was no statistically significant difference between marital status of cases and controls (p = 0.453).

There was statistically significant difference between the cases and controls in their place of residence (p=0.043).

In cases, maximum constituted of rural dwellers (46.7%) followed by 43.3% in semi urban areas and 10% in urban areas. Among the controls, semi urban dwellers were 70% forming the largest group, rural dwellers 16.7% and urban dwellers were 13.3%. The difference was not highly significant. It could be because the controls, who were bystanders of patients in medical wards were residing more in the semi urban areas.

The largest group in cases as well as control group was Hindus (63.3% of cases and 50% of control group) followed by Christians and Muslims. There was no significant difference between the control group and cases in religion (p=0.381).

As for education, 60% participants had completed their primary schooling. High school education was done in 33.3% of cases and 36.7% of controls. College education was done in 6.7% of cases and 3.3% of controls. There was no significant difference between control group and cases.

Unskilled labourers formed the largest group in both cases and controls (93.3% and 83.3% respectively). There was no significant difference in occupational data between cases and controls (p = 0.316)

Most of the cases (80%) as well as controls (90%) belonged to the socioeconomic status III. There was no statistical significant difference between cases and controls (p=0.248, > 0.05)

The duration of illness was noted to be < 1 year in most of the patients (63.3%). Maximum number of patients had undergone surgery and chemotherapy (43.3%).

Table 2: Comparison of psychiatric morbidity using ghq-28 score in the two study groups (N=60)

	Category		Fisher's exact test	P Value
	Cases	Controls		
Psychiatric disorders present	13 (43.3%)	3 (10%)	8.52	0.007
No Psychiatric disorders	17 (56.7%)	27 (90%)		

The GHQ-28 score of 3 or more was considered an indication of psychiatric disorders and the people with a score of below 3 were classified as having nopsychiatric disorders. The proportion of psychiatric disorders as assessed by the GHQ score of 3 or more was 43.3%, compared to 10% in controls. This difference in the proportion of psychiatric disorders was statistically significant (Chi square value 8.52, p value 0.007).

Table 3: Comparison of overall psychiatric disorders using MINI Plus in two study groups(n=60)

Psychiatric Disorders	Category		Fisher's exact test	P Value
	Cases	Controls		
Yes	8 (26.7%)	3 (10%)	2.78	0.18
No	22 (73.3%)	27 (90%)		

Comparison of overall psychiatric disorders using MINI plus in two study groups

By using MINI plus, 26.7% of breast cancer patients reported psychiatric illness and this percentage was 10% in controls. This difference was not statistically significant at p value of 0.05 (Chi square value 2.78, p value 0.18).

Table 4: Descriptive analysis of psychiatric disorders using MINIplus in two study groups (n=60)

Psychiatric disorders	Cases	Controls
No psychiatric disorders	22 (73.3%)	27 (90%)
Dysthymia	3 (10%)	2 (6.7%)
Major Depressive Disorder (MDD)	3 (10%)	-
Adjustment disorder Unspecified (AD US)	2 (6.7%)	1 (3.3%)
Adjustment disorder with depressed mood (AD DM)	-	-

Analysis of psychiatric disorders using MINI plus in two study groups

The most common psychiatric morbidities were Dysthymia, and MDD seen in 3 (10%) women each. Adjustment disorder unspecified was found in 2 (6.7%) women.

Standardized mini mental status examination components

There is a highly significant difference in the mean scores with respect to recall (p= 0.01) and language (p = 0.009) between the cases and control group. There was significant difference in the domains of orientation (p = 0.027). However, no statistically different difference was present in the domains of registration (p = 1.00), attention and concentration (p=0.155) and construction (p=1.00) between the cases and control group. Hence, there are statistically significant differences between cases and controls and these differences are circumscribed to domains of recall and language and orientation.

The mean total score obtained by cases is 28.60 with a standard deviation of 1.354 and that obtained by the control group is 29.70 with a standard deviation of 0.535. The difference between the two groups is highly significant (p<0.001). The cut off score of <24 suggests cognitive impairment.

5. Discussion

The psychiatric disorders are known to be prevalent among breast cancer patients. Psychological illness in cancer patients may range from mild apprehension to a psychiatric diagnostic entity, as observed in our study. Psychosocial distress can be attributed to critical events immediately after diagnosis. Psychosocial interventions, provided timely and properly, effectively reduce distress, anxiety and depression. It can also prevent psychological morbidity. Early detection of relevant distress is therefore crucial.

In our study age group of 41-50 years of constituted the majority of the cases 46.7%. Which is near earlier studies by Montazeri et al in 2001 in Tehran, Iran conducted on 56 patients with breast cancer where the mean age was 45.4 years,[4] In study by Kissane DW et al in 2004 the mean age of participants suffering from breast cancer was 49.8 years.[5]

The proportion of psychiatric disorders in the current study, as assessed by the GHQ score of 3 or more was 43.3%, compared to 10% in controls. Grabsch B et al (2006) in a study found that 42% of the breast cancer patients have psychiatric disorders.[6] Kissane et al (2004) found that 45% of the patients have morbidity.[7] Pinder et al (1993) in their study found 25% of the breast cancer patients have disorders.[8] Palmer et al (2004) study shows that 38% of the patients have psychiatric morbidity.[9]

Burgess et al (2005) had conducted a study on early-stage breast cancer patients (44% received chemotherapy, 48% received endocrine therapy). They found that the annual prevalence of psychiatric disorders (depression, anxiety or both) were as follows: 1st year 48%, 2nd year 25%, 3rd year 23%, 4th year 22%, 5th year 15%.[10]

In the current study, 26.7% of women reported psychiatric illness (by using MINI plus). The most common psychiatric disorder reported in our breast cancer patients were Dysthymia seen in 3 (10%) women.

Mishra M et al (2015) study showed dysthymia in 10% of the patients.[11] Mehnert A et al (2007) in their study found that 3.1% of the patients had dysthymia.[12] Very few studies have been conducted on this aspect. Various studies found the incidence of psychiatric morbidity in cancer patients ranging from 41.7% -47%.

The other common psychiatric disorder reported in breast cancer patients was Major Depressive Disorder. El-Hadidy et al[13] observed it in 3 (10%) patients. Lueboonthavatchai P et al[14] study showed that 9% of the patients had MDD. Hegel et al[15] in their study found MDD in 11% of the patients. Grabsch B et al[12] showed MDD in 7% of the patients. Cvetkovic j et al observed in their study that Depression is significantly more often recorded in cancer patients who are undergoing cytotoxic therapy; mild depression is the most common, followed by moderate and severe depression.[16] Gandubert et al[17] study showed MDD in 19.4% of the patients.

Jianyin Qiu et al[18] conducted a study to measure the prevalence and correlates of major depressive disorder (MDD) among Chinese breast cancer patients The adjusted 1-month prevalence of MDD was 20.59%.

The discrepancy found between the current and above studies is due to the differing methodologies viz., the choice of tools used to assess the disorders, choice of sample and locations (urban vis-à-vis rural), etc.

The other common psychiatric disorder reported in breast cancer patients was Adjustment disorder unspecified which was found in 2 (6.7%) in breast cancer patients. Mehnert

A et al[12] study showed adjustment disorder in 7.1% of the patients. Okamura et al (2005) in their study found Adjustment Disorder in 20% of the patients.[19] Shandilya V et al[20] study showed 26.7% of their patients had Adjustment Disorder.

Looking at the findings of our study among the female breast cancer patients, significant proportion of psychiatric morbidity was observed among these patients. There is a growing importance and need to treat these psychiatric disorders and all possible measures are to be taken for their early detection. There is also a need to conduct a large scale survey of psychiatric disorders in these patients to see the nature and extent of prevailing morbidity to trace its developmental course and study its psychosocial determinants which are known to contribute to psychiatric disorders. In view of the above discussion, it is concluded that it is imperative to carry out more studies and to follow up them longitudinally to understand the natural history of psychiatric disorders in cancer patients. The results of the study have implications for clinical training, practice and policy initiatives. Integrating mental health into general health care, effective mass media coverage, networking between mental health-professionals and other health professionals, community-based health services are required.

6. Conclusion

The current study has concluded that psychiatric morbidity is present in breast cancer patients and study brings out the need for identifying psychiatric problems at proper time and referral of breast cancer patients to Psychiatrists. There is a need for establishing psychiatric units in Cancer Institutes and also there is a need for family, social and community support to the breast cancer patients.

It is evident from above, that the present study showed a considerable amount of psychiatric morbidity. Hence, it is recommended that a detailed psychiatric work up to be sought by treating physician in all cancer patients so psychiatric morbidity is not missed as many patients may deny and hide their psychological problems.

7. Source of Funding

None.

8. Conflict of Interest

The authors declare that there are no potential conflicts of interest for the authorship and publication of the article.

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Author biography

Ramakanth Paniharam, Assistant Professor

Shirish Chakra Chidurala, Assistant Professor