Depression, Anxiety and Stress among Patients with Breast Cancer in Cancer Hospital, Chitwan, Nepal

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ABSTRACT

Introduction: Patients with breast cancer often experience psychological distress, including anxiety, depression, and potential mood disorders. The objective of the study was to assess the Depression, Anxiety and Stress among patients with breast cancer.

Methods: A descriptive cross-sectional study design was used to conduct the study in B.P. Koirala Memorial Cancer Hospital, Chitwan. All patients with breast cancer undergoing treatment at the hospital were taken as study population. Non probability purposive sampling technique was used to select the sample of 111 respondents. Standardized tool DASS-21 was used as research instrument to collect information for Depression, Anxiety and Stress of respondents. Data was entered into Epi-data 3.1 and exported to SPSS- 16 version for data analysis. Descriptive analysis was done to assess the status of Depression, Anxiety and Stress whereas significance of association was measured by using Chi-square test.

Results: The mean age of respondents was 46.4 years (range: 23-76). 56.8%, 47.7%, and 40.5% of respondents reported experiencing depression, anxiety, and stress, respectively. Depression was significantly associated with age, educational status, menstrual status, and age at diagnosis of breast cancer (p<0.05), while anxiety and stress were significantly associated with marital status.

Conclusions: The study found a high prevalence of depression, anxiety, and stress among patients with breast cancer in BPKMCH. These findings highlight the importance of providing psychosocial support to patients with breast cancer to improve their overall well-being.

Keywords: Anxiety, breast cancer, depression, stress

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INTRODUCTION

Breast cancer is a significant global health concern, with a high prevalence of 2.09 million cases and 627,000 deaths reported worldwide in 2018, according to the World Health Organization.[1] According to Annual Report 2075/76 of Department of Health Service, Nepal, an estimated 2033 new breast cancer cases were diagnosed in Nepal in 2075/76 which increased from 1808 in 2074/75.[2] Breast cancer is a prevalent cancer in women, with one out of eight women being diagnosed with the disease in their lifetime.[3] Breast cancer is the second most common cancer in Nepal. In developing countries like Nepal, Breast Cancer is diagnosed at a very late stage and women do not receive adequate treatment and care. Breast cancer is a social and economic burden in Nepal. Factors associated with delayed diagnosis are lack of knowledge, limited breast cancer screening, limited health care facilities and socio-cultural barriers.[4]but information regarding the number of women living with breast cancer is not well recorded. In countries with lower levels of resources such as Nepal,

breast cancers are commonly diagnosed at late stages and women may receive inadequate treatment, pain relief or palliative care. Socioeconomic disparities and insufficient financial resources hinder prevention of breast cancer in Nepal. The current review provides an overview of the burden of breast cancer, of risk factors associated with breast cancer, and of screening and treatment modalities for breast cancer in Nepal. Additionally, this review highlights the current awareness of breast cancer among Nepalese women and prevention strategies for breast cancer. Breast cancer in Nepal: Current status and future directions (review

Depression is a common mental disorder with more than 264 million of all ages being affected. The symptoms include persistent sadness and a lack of interest or pleasure in activities that were previously rewarding or enjoyable. It affects sleep, appetite and concentration. It is a leading cause of disability and also highly contributes in the global burden of diseases. It is more common in females than in male.[5]

A 2015 study conducted in Nepal concluded that prevalence of depression among breast cancer was high and psychological morbidities affect the treatment and quality of life of patients. Breast cancer management need to include screening for psychological morbidities and psychological rehabilitation along with anti-cancer treatment.[6] There is high prevalence of psychological distress among patients with breast cancer, and they are at greater risk of developing severe anxiety, depression and potential mood disorders.[7] Although many patients with breast cancer suffer from anxiety and depression, and it is worsening the disease course and treatment outcome, the psychiatric problems are often neglected and left untreated. It is important to understand the psychiatric disorders and its associated factors for planning the treatment and may result in success of the treatment. Poor family relationship, maladaptive problem

and conflict solving and presence of pain and fatigue are some strong predictors of anxiety and depression in patients with breast cancer.[8]

Patients with breast cancer who are young adults experience disruptions in their normal developmental milestones and psychological distress is a common experience related to their diagnosis. Young women who are diagnosed with metastatic breast cancer are at particular risk of adverse mental health outcomes.[9] Most of the breast cancer patient experience tiredness, anxiety and/or depression months to years after they get diagnosed with breast cancer and these symptoms are significantly associated with greater disability and poor quality of life. Past history of anxiety or depressive disorder, younger age at diagnosis, poor social support, worries regarding fear of death and disease recurrence, altered body image, alteration of femininity, sexuality and attractiveness are few risk factors.[10] The exact prevalence of depression and anxiety remains unclear. There are limited research addressing prevalence of depression and anxiety among patients with breast cancer.[4] but information regarding the number of women living with breast cancer is not well recorded. In countries with lower levels of resources such as Nepal, breast cancers are commonly diagnosed at late stages and women may receive inadequate treatment, pain relief or palliative care. Socioeconomic disparities and insufficient financial resources hinder prevention of breast cancer in Nepal. The current review provides an overview of the burden of breast cancer, of risk factors associated with breast cancer, and of screening and treatment modalities for breast cancer in Nepal. Additionally, this review highlights the current awareness of breast cancer among Nepalese women and prevention strategies for breast cancer. Breast cancer in Nepal: Current status and future directions (review Therefore, it is crucial to assess the level of depression and anxiety at an early stage of breast cancer. Hence, the researcher was interested to study on Depression, Anxiety and Stress among

patients with breast cancer. The objective of this study was to assess Depression, Anxiety and Stress and to identify the association between Depression, Anxiety and Stress with selected variables.

METHODS

Descriptive cross-sectional study design was used to assess Depression, Anxiety and Stress among patients with breast cancer. This study was carried out at B.P. Koirala Memorial Cancer Hospital (BPKMCH). The population of this study was all clinically diagnosed patients with breast cancer visiting BPKMCH for follow up and treatment purposes. Non-probability purposive sampling technique was used for this study. According to a study in Nepal, the prevalence of anxiety was 89.2% and prevalence of depression was 93.3%.[11]Hospital Anxiety and Depression Scale (HADS Based on highest prevalence of depression 93.3%, with 95% confidence interval with 5% allowable error, sample size estimation was calculated using Cochran's formula that gave a sample size of 111 including 10% possible non-response rate. The response rate in this study was 100%.

DASS-21 is a 21-item questionnaire which included three self-report scales designed to measure the negative emotional states of Depression, Anxiety and Stress. Each of the three scales contained 7 items that was divided into subscales of 2-5 items with similar content. The statements were scored from 0 to 3, in a four-point scale (0= never, 1= sometimes, 2= often and 3= almost always). Scores on the DASS-21 tool needed to be multiplied by 2 to calculate the final score. The depression scale items were 3, 5, 10, 13, 16, 17 and 21. The depression score more than 9 was considered as having depression. Score of 10-13 was considered mild depression, 14-20 as moderate depression, 21-27 as severe depression and 28+ as extremely severe depression. The anxiety scale items were 2, 4, 7, 9, 15, 19 and 20. The anxiety score more than 7 was consider as having anxiety. Score of 8-9 was considered mild anxiety, 10-14 as moderate anxiety, 15-19 as severe anxiety and 20+ as extremely severe anxiety. The stress scale items were 1, 6, 8, 11, 12, 14 and 18. The stress score more than 14 was considered as having stress. Score of 15-18 was considered as mild stress, 19-25 as moderate stress, 26-33 as severe stress and 34+ as extremely severe stress.[12] DASS-21 was available in Nepali language which was already validated and used in previous studies in different settings and population.

Research proposal approval was obtained from the Research Committee of T.U.I.O.M., Pokhara Nursing Campus. Then, ethical approval from the Institutional Review Committee (IRC) of Tribhuvan University, Institute of Medicine was obtained. Participation of the respondents was voluntary and informed written consent was obtained prior to data collection. The respondents who got high scores in the DASS-21 Scale were given health teaching on stress management technique and asked to seek for further psychological help.

Data coding was done to simplify the process of data entry. After checking accuracy, consistency and completeness, the collected data were entered into the software EPI-DATA 3.1 and exported to SPSS- 16 version for further data analysis. The collected data was entered on the same day by the researcher herself. Data were analyzed and interpreted according to the objectives of the study. Descriptive analysis was done to assess the status of Depression, Anxiety and Stress. Association between Depression, Anxiety and Stress with different variables was assessed by using Chi-square test.

RESULTS

The mean age of the respondents was 46.4 years. The details of the socio-demographic characteristics of the respondents are shown in table 1.

Table 1 Socio-Demographic Information of Respondents (n=111)

Variables	Number	Percent
Age in years		
≤ 40	40	36.0
> 40	71	64.0
Mean ± SD=46.4±11.6	Range: 23-76	
Marital status		
Single	24	21.6
Married	87	78.4
Education status		
Illiterate	35	31.5
Informal Education	19	17.1
Primary	20	18.0
Secondary	23	20.7
Higher Secondary and above	14	12.7
Occupation		
Homemaker	80	73.1
Agriculture	16	14.4
Business	10	9.0
Non-government employee	5	4.5
Duration of Disease		
Less than 1 year	77	69.4
1-2 years	22	19.8
2-3 years	7	6.3
≥3 years	5	4.5
Treatment modality		
Surgery	15	13.5
Chemotherapy	23	20.7
Surgery + Chemotherapy	59	53.2
	14	12.6
Surgery + Chemo+ Radiation	36	32.4
Stage of Disease		
1st stage	46	41.5
2nd stage	28	25.2
3rd stage	1	0.9
4th stage		
Age during Diagnosis		
<40 years	41	36.9
≥40 years	70	63.1

Variables	Number	Percent
Co-morbidity		
Absent	85	76.6
Present	26	23.4
Menstrual status		
Pre-menopause	63	56.8
Post-menopause	48	43.2

Level of Depression, Anxiety and Stress among Respondents

The results showed that 56.8%, 47.7% and 40.5% of the respondents had Depression, Anxiety and Stress respectively. The mean score for Depression, Anxiety and Stress scale was 11.20 ± 8.26, 7.35 ± 6.18, and 13.81 ± 7.04 respectively. Regarding the level of depression, 15.3%, 26.1%, 13.5% and 1.8% had mild, moderate, severe and extremely severe depression respectively. More than half of respondents (52.3%) had no anxiety while 13.5%, 22.5%, 6.3% and 5.4% had mild, moderate, severe and extremely severe anxiety respectively. In case of stress, 59.5% had no stress while 14.4%, 19.8%and 6.3% had mild, moderate and severe stress respectively (Table 2).

Table 2 Level of Depression, Anxiety and Stress among Respondents (n=111)

Variables	Number	Percent	95% CI
Depression			
Normal (0-9)	48	43.3	33.4-52.3
Mild (10-13)	17	15.3	9.0-21.6
Moderate (14-20)	29	26.1	17.1-34.2
Severe (21-27)	15	13.5	7.2-20.7
Extremely Severe (28+)	2	1.8	0.0-4.5
Anxiety			
Normal (0-7)	58	52.3	43.2-61.3
Mild (8-9)	15	13.5	8.1-19.8
Moderate (10-14)	25	22.5	14.4-30.6
Severe (15-19)	7	6.3	2.7-11.7
Extremely severe (20+)	6	5.4	1.8-9.9
Stress			

Variables	Number	Percent	95% CI
Normal (0-14)	66	59.5	49.5-69.3
Mild (15-18)	16	14.4	8.1-21.6
Moderate (19-25)	22	19.8	13.5-27.0
Severe (26-33)	7	6.3	1.8-11.7
Extremely severe (34+)	0	0.0	

Association of Depression, Anxiety and Stress with Characteristics of Respondents

Present study found that there were significant association between depression with age (p-value 0.012), education (p-value 0.030), menstrual status (p-value 0.001) and age during diagnosis of the respondents (p value 0.008) (Table 3).

Table 3 Association between Depression and Characteristics of Respondents (n=111)

Variables	Presence of Depression		X^2	p- value
	Absent No.(%)	Present No.(%)		
Age in years				
≤ 40	11(27.5)	29(72.5)	6.315	0.012*
> 40	37(52.1)	34(47.9)		
Marital Status				
Single	13(54.2)	11(45.8)	1.489	0.222
Married	35(40.2)	52(59.8)		
Education				
Illiterate	29(53.7)	25(46.3)	4.688	0.030*
Literate	19(33.3)	38(66.7)		
Occupation				
Unemployed	35(44.3)	44(55.7)	0.126	0.723
Employed	13(40.6)	19(59.4)		
Menstrual Status				
Pre-menopause	36(57.1)	27(42.9)	11.468	0.001*
Post-menopause	12(25.0)	36(75.0)		
Duration of Disease				
≤ 1 Year	32(41.6)	45(58.4)	0.291	0.590
> 1 year	16(47.1)	18(52.9)		
Age During Diagnosis				
≤ 40 years	11(27.5)	30(72.5)	7.137	0.008*
> 40 years	37(52.1)	33(47.9)		
Stage of disease				
Early stage	36(43.9)	46(56.1)	0.056	0.814
Locally advanced stage	12(41.4)	17(58.6)		
Treatment modality				
Surgery	9 (60.0)	6 (40.0)	3.245	0.355
Chemotherapy	12 (52.2)	11(47.8)		
Surgery+ chemotherapy	20 (33.9)	39(65.1)		
Surgery+ Chemotherapy+ Radiation therapy	7 (50.0)	7(50.0)		
Co-morbidity				
Absent	35(41.2)	50(58.8)	0.632	0.427
Present	13(50.0)	13(50.0)		

*Level of significance at p value<0.05

The study also reported that there was significant association between anxiety and marital status of respondents (p value 0.040)(Table 4).

Table 4 Association between Anxiety and Socio-Demographic Variables of Respondents (n=111)

Variables	Presence of Anxiety		x^2	p- value
	Absent No.(%)	Present No.(%)		
Age in years				
≤ 40	20(50.0)	20(50.0)	0.127	0.721
> 40	38(53.5)	33(46.5)		
Marital Status				
Single	17(70.8)	7(29.2)	4.237	0.040*
Married	41(47.1)	46(52.9)		
Education				
Illiterate	25(46.3)	29(53.7)	1.495	0.221
Literate	33(57.9)	24(42.1)		
Occupation				
Unemployed	41(55.6)	38(48.1)	0.140	0.907
Employed	17(53.1)	15(46.9)		
Menstrual Status				
Pre-menopause	35(55.6)	28(44.4)	1.460	0.691
Post-menopause	23(47.9)	25(52.1)		
Duration of Disease				
≤ 1 Year	37(48.1)	40(51.9)	1.778	0.182
> 1 year	21(61.8)	13(44.8)		
Age During Diagnosis				
≤ 40 years	21(51.2)	20(48.8)	0.028	0.868
> 40 years	37(52.9)	33(38.2)		
Stage of Disease				
Early stage	42(51.2)	40(48.8)	0.134	0.714
Locally advanced stage	16(52.2)	13(44.8)		
Treatment modality				
Surgery	8(53.3)	7(56.7)	1.531	0.675
Chemotherapy	10(43.5)	13(56.5)		
Surgery+ chemotherapy	31(52.5)	28(47.5)		
Surgery+ Chemotherapy+ Radiation therapy	9(64.3)	5(35.7)		
Co-morbidity				
Absent	41(48.2)	44(51.8)	2.347	0.126
Present	17(65.2)	9(34.6)		

*Level of significance at p value<0.05

The results also found that there was significant association between stress and marital status of respondents (p value 0.013)(Table 5).

Table 5 Association between Stress and Socio-Demographic Variables of Respondents (n=111)

Variables	Presence of Stress		x^2	p-value
	Absent No.(%)	Present No.(%)		
Age in years				
≤ 40	24(60.0)	16(40.0)	0.008	0.931
> 40	42(59.2)	29(40.8)		
Marital Status				
Single	9(37.5)	15(62.5)	6.125	0.013*
Married	57(74.0)	30(26.0)		
Education				
Illiterate	25(46.3)	29(53.7)	1.495	0.221
Literate	33(57.9)	24(42.1)		
Occupation				
Unemployed	41(55.6)	38(48.1)	0.140	0.907
Employed	17(53.1)	15(46.9)		
Menstrual Status				
Pre-menopause	27(56.3)	21(43.8)	0.361	0.548
Post-menopause	39(61.9)	21(43.8)		
Duration of Disease				
≤ 1 Year	44(57.1)	33(42.9)	0.560	0.454
> 1 year	22(64.7)	12(35.3)		
Age During Diagnosis				
≤ 40 years	24(58.5)	17(41.5)	0.023	0.880
> 40 years	42(60.0)	28(40.0)		
Stage of Disease				
Early stage	51(62.2)	31(37.8)	0.974	0.324
Locally advanced stage	15(51.7)	14(48.3)		
Treatment modality				
Surgery	12(80.0)	3(20.0)	3.245	0.355
Chemotherapy	12(52.2)	11(47.8)		
Surgery+ Chemotherapy	34(57.6)	25(42.4)		
Surgery+ Chemotherapy+ Radiation therapy	8(57.1)	6(42.9)		
Co-morbidity				
Absent	53(62.4)	32(37.6)	1.260	0.262
Present	13(50.0)	13(50.0)		

Level of significance at p value<0.05

DISCUSSION

The study was done to assess the prevalence of Depression, Anxiety and Stress among patients with breast cancer and to identify association between selected variables.

This study showed that prevalence of depression among patients with breast cancer was 56.8%. The result is supported by a meta analytical study that stated that prevalence of depression varies from 9.4% to 66.4%.[13] This result is different than the global prevalence of depression among patients with breast cancer which was 32%.[14] It is also inconsistent with the prevalence of study conducted in South East Iran in 2020, in India in 2017 and in Malaysia in 2015.[15–17]

The study shows that depression was significantly associated with age, education and menstrual status of the respondents. This finding was supported by the studies conducted in Palestine in 2020 and India in 2015.[7,18] Another study from Sweden in 2017 showed that depression was associated with stage of disease, time since diagnosis, co-morbidity and type of treatment but in this study there was no significant association between these variables and depression.[19] This result is similar to the result of study conducted in Egypt which showed no association between depression and stage of disease, marital status, place of residence, occupation and income.[20]

In this study, the prevalence of anxiety was found to be 47.7% among patients with breast cancer which was similar to the global prevalence of anxiety (41.9%).[21] The result of this study is also supported by other studies conducted in Spain in 2018, Lebanon in 2017 and Nepal in 2017 that showed the prevalence of anxiety among patients with breast cancer to be 48.6%, 41.3% and 52.3% respectively.[22–24]clinical and contextual variables may influence emotional stress among women with breast cancer. The aim of this work is to study anxiety and depression in a cohort of women diagnosed with breast cancer between 2003 and 2013 in Barcelona. We evaluate social and clinical determinants. Methods: We performed a mixed cohort study (prospective and retrospectiveHowever, the result is inconsistent to a meta analytical study reviewing 17 articles that stated the prevalence of anxiety among early stage patients with breast cancer varied from 17.9% to 33.3%.[13]

In this study, anxiety was significantly associated with marital status (0.040) which is supported by a study conducted in North India that stated that being single was significantly associated with anxiety.[7] It is not consistent with the report of Egypt in 2020 and of Malaysia in 2015 that showed no association between marital status and anxiety.[17,20] Stage of disease, time since diagnosis, co-morbidity and type of treatment were not statistically significant in this study like in the study in Sweden in 2017.[19]

The prevalence of stress among patients with breast cancer in this study was 40.5% that was different than the prevalence of study in South East Iran and Egypt in 2020 that revealed the prevalence of anxiety to be 14.7% and 78.2% respectively.[15,20]The prevalence of mild, moderate and severe stress in this study was 14.4%, 19.8% and 6.3% respectively which contradicts with the study of Pakistan that had stated 26.2% had moderate while 63.9% had high stress.[25]

Stress was found to be significantly associated with marital status but not with other variables. It is supported by the study in Nepal in 2018 that reported association of marital status with the level of perceived stress among cancer patient.[26] Unlike the study of Sweden in 2017 that reported younger age to be risk associated with stress in patients with breast cancer, there was no significant association between age and stress in this study.[19]

The difference in this study and other studies may be due to the use of different tools, difference in sample size and research setting.

Since it was a small-scale study and was carried out in a single facility, the results may not be generalized.

CONCLUSIONS

Based on the findings of the study, it can be concluded that the prevalence of Depression, Anxiety and Stress among patients with breast cancer was high. Depression was significantly associated with age, educational level, menstrual status and age during diagnosis of respondents. Illiterate and young women tend to have more psychological stress. Marital status is also significantly associated with anxiety and stress. Hence, strong psychological support and counseling programs for patients with breast cancer and family should be implemented which will promote in patients' mental wellbeing.

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