ORIGINAL ARTICLE

DEPRESSION AND ITS PREDICTORS AMONG BREAST CANCER PATIENTS IN NEPAL

Abha Sharma*, Jingping Zhang**

***Central South University, Tongzipo Road, Yuelu Furong District, Changsha, Hunan, Xiangya Medical College, International Apartments, 8 East Building, 410013, P.R. China; **Central South University, Tongzipo Road, Yuelu Furong District, Changsha, Hunan, Xiangya Medical College, School of Nursing, Central South University, 410013, P.R. China.**

Abstract

Objectives: **The main objectives of the study were to determine: (i) the prevalence of depression among breast cancer patients in Nepal; (ii) the association between depression and socio-demographic and disease related variables; and (iii) to explore correlates and predictors of depression among these patients.** ***Methods:*** **A cross-sectional descriptive design was used. Structured form for socio-demographic and disease related information, and Hospital Anxiety and Depression Scale (HADS) were used to collect information from 120 participants. The study was conducted at Bhaktapur Cancer Hospital, Nepal. Data were analyzed using Statistical Package for Social Sciences (SPSS) 16.** ***Results:*** **The mean age of respondents was 51.92 (S.D=10.1783).The mean depression score was 11.266 (S.D=2.782) and mean anxiety score was 11.81 (S.D=3.47). 4.2% had severe depression, 60% had moderate depression, and 29.2% respondents had mild levels of depression. There were no significant difference between age group, marital status, family status, time since diagnosis, and treatment done with depression level of respondents where-as educational level (p=0.014), occupation (p=0.001), and anxiety level of respondents (p=0.000) had significant impact on depression. Depression was found to be negatively correlated with educational status of respondents (r=-0.226, P=0.013) and positively correlated with anxiety level of respondents (r=0.450, P=0.000). Educational status (P=0.008, B=-0.466 and Beta=-0.212) along with anxiety level of respondents (P=0.000, B=0.369 and Beta=0.461) accounts for 30.4% of variance in depression level of respondents (F=25.494 and R2=0.304).** ***Conclusion:*** **The prevalence of depression among breast cancer patients was high. Psychological morbidities compromise the treatment and quality of life of the patient. Thus management of cancer should include screening for psychological morbidities, Psychological rehabilitation should be provided along with anti-cancer treatment.** ***ASEAN Journal of Psychiatry, Vol. 16 (1): January – June 2015: XX XX*.**

Keywords: Breast Cancer, Depression, Prevalence, Predictors, Nepal

Introduction

Breast cancer is one of the curable cancers and diagnosis has mostly been made in women of age fifty or younger, which makes up almost a quarter of women [1]. It is a specific challenge for women as it is a life threatening disease, and needs intensive surgical and medical treatments. It also affects the patient's sexuality, femininity, body image, and maternal issues following mastectomy. This new life situation may lead the women to face psychiatric co-morbidity [2].

Breast cancer accounts for approximately 460,000 deaths each year. [3] In Nepal, the most common types of cancer among females are cervix uteri, breast, and lung cancer. Among all the cancer incidences in Nepal, breast cancer accounts for 15.7% [4].

The fear of cancer among patients has been called six Ds: death, dependency on family, spouse and physician; disfigurement and changes in early appearances and self image, sometimes resulting in loss or changes in sexual functioning; disability interfering with achievement of age appropriate task at work, school or leisure roles; disruption of interpersonal relationships; and finally, discomfort or pain in stages of illness [5-9].

Cancer patients are vulnerable to psychological morbidities for a variety of reasons like metabolic or endocrine alterations, treatment with debilitating chemotherapy regimens, immune response modifiers, and chronic pain associated with cancer [10]. Moreover, feeling of loss of control over life events, changes in how they are able to fill family or work roles, as well as changes in body image may trigger psychological morbidities [11].

Apart from normal emotional impact of the diagnosis of a life threatening illness, 20%-25% of cancer patients are estimated to meet diagnostic criteria for major depression or anxiety, treatable psychiatric conditions which have detrimental effects on their quality of life [12]. Also, the physiological effects of some treatments (eg, high dose interferon therapy) on central nervous system may directly produce anxiety or depression [13].

A cross sectional study carried out in Nepal on depression and anxiety in cancer patients found 30(60%) of cancer patients as having psychiatric morbidity as compared to healthy individuals (16%), based on cutoff score of above 2 on item 12 in General Health Questionnaire (GHQ). Depression was present in 28.0% of cancer patients whereas 40% of cancer patients had anxiety as per Hospital Anxiety and Depression Scale (HADS) [14].

The rate of prevalence of psychological distress among breast cancer patients is found to be as high as 45% in early breast cancer patients and 42% in metastatic breast cancer patient which endorse a psychiatric DSM-IV diagnosis [15]. Studies have shown that heightened anxiety and depression are not only limited to the active treatment period but may persist for months or even years following successful treatment [16].

Depression and anxiety not only affect the quality of life but also compromise compliance with anticancer treatment, are associated with prolonged hospitalization, and may have negative effect on prognosis and even survival [17, 18]. Among patients with breast cancer, depression has been reported to be related to a significantly reduced chance of survival over 5 years [19].

Thus it is very important to know the prevalence of depression along with its associated factors, correlates, and predictors so that psychological rehabilitation can be applied on the cancer continuum: in changing lifestyle; symptoms control (anxiety, depression, delirium, pain, and fatigue) during active treatment; management of psychological sequelae in cancer survivors; and management of psychological aspects of palliative and end of life care for the patients with breast cancer.

Methods

A descriptive, cross sectional, non randomized study of patients with breast cancer was conducted in May 2013 - August 2013 at Bhaktapur Cancer Hospital, Nepal. The study population included all patients diagnosed with breast cancer and who were involved in treatment and follow ups in surgical ward, chemo- therapy ward, radiation ward, palliative ward, and outpatient department of the hospital. The inclusion criteria also included patients who can communicate well in Nepali language and voluntarily participated in the study.

A total of 120 patients volunteered to participate in the study. The following exclusion criteria were considered: diagnosed with cancer other than breast cancer; diagnosed with DSM-IV major mental disorder; diagnosed with depression before diagnosis of breast cancer; and not willing to participate in the study.

Researcher took permission from the hospital director and from departments of Bhaktapur Cancer Hospital involved in the study before the collection of data. Informed consent was obtained from all the participants. The purpose of the study, objectives, procedures, and confidentiality agreement were clearly explained to the respondents before collecting the data. Participants who agreed to take part were given the questionnaires to fill up. The subjects were assured of confidentiality that only the researcher will have access to the collected data.

Literate participants filled the form by themselves while researcher assisted illiterate participants to complete the form. Similarly, the patients who were in follow up list of radiation ward, chemotherapy ward, surgical, and medical outpatient ward were telephoned and interviewed by researcher herself to fill up the questionnaires, if they agreed to participate in the study. A structured form related to socio-demographic information and disease related information of the participants which included age, sex, marital status, education level, occupation, time since diagnosis of cancer, treatment adopted by the participants, and Hospital Anxiety and Depression Scale (HADS) were used for the collection of information. The HADS is a screening tool for anxiety and depression in non-psychiatric clinical population. HADS was originally developed by Zigmond and Snaith in 1983. HADS consists of 14 items (7 each for anxiety and depression). Items 2, 4, 6, 8, 11, 12, and 14 measure anxiety and items 1, 3, 5, 7, 9, 10, and 13 measure depression. Each item is rated on a four point scale ranging from 0 (not at all) to 3 (very often). Responses are based on the relative frequency of symptoms over the preceding week. Possible score ranges from 0-21 for each subscale [20]. An analysis of scores on the two subscales supports the differentiation of each mood state into four ranges: ‘no case’ (score below 8), ‘mild cases’ (score 8-10), ‘moderate case’ (score 11-15), ‘severe case’ (score 16 or higher) [21].

Data were analyzed using Statistical Package for Social Sciences (SPSS) 16. Standard deviation, mean, percentage, frequency, range were used to describe the demographic data, anxiety and depression of the participants. Chi- square test spearman’s rho correlation and multiple regressions were used.

Results

Socio-demographic and disease related characteristics of respondents

According to table 1, the mean age of respondents was 51.92 (S.D=10.178) years. Maximum age was 72 years and minimum age was 25 years. Only one respondent was male all others were female. Among the 14 administrative zones of Nepal, respondents from 11 zones participated in the study with an exception of Karnali, Seti and Mahakali zones. Majority (58.3%) of respondents were from Bagmati zone followed by 7.5% from Koshi and Lumbini zones respectively. Majority (85%) of the respondents were married followed by 13.3% unmarried and 1.7% widowed. Also majority (94.2%) of respondents live in joint family and only 5.8% are from single family units. Half (50.8%) of the respondents were illiterate, and among the literate only 4.2% had university education, 13.3% had attained college, 18.3% completed secondary level of education and 13.3% completed primary education. Almost half of (45.8%) respondents were housewives. 32.5% respondents were engaged in agriculture, 11.7 % in services, 9.2% in business, and 0.8% in other occupation.

The time since diagnosis of breast cancer for more than half of the participants (60%) was between 1 month to one year, followed by 28.3% of respondents diagnosed between 1- 2 years, 5% between 2- 3 years, 3.3% between 3- 4 years, 2.5% between 4- 5 years, and 0.8% between 5- 6 years respectively. Distribution of respondents according to their anti- cancer treatment shows that majority (64.2%) of respondents had surgery along with chemotherapy and radiation therapy. 29.2% of respondents had surgery along with chemotherapy. Only 6.7% of respondents had only surgery performed.

Table 1. Distribution of respondents according to age group, marital status, family status, educational status, occupation, year since diagnosis and treatment done

Age group	**Frequency**	**Percentage**
20-30	2.0	1.7
30-40	16.0	13.3
40-50	43.0	35.8
50-60	35.0	29.2
60-70	22.0	18.3
70-80	2.0	1.7
Marital status		
Married	102	85.0
Unmarried	16	13.3
Widow	2	1.7
Family status		
Joint family	113	94.2
Single family	7	5.8
Educational status		
Illiterate	61	50.8
Literacy		
Primary	16	13.3
Secondary	22	18.3
College	16	13.3
University	5	4.2
Occupation		
Service	14	11.7
Agriculture	39	32.5
Housewife	55	45.8
Business	11	9.2
Others	1	.8
Years since diagnosis		
Up-to 1 year	72	60.0
1-2 years	34	28.3
2-3 years	6	5.0
3-4years	4	3.3
4-5years	3	2.5
5-6years	1	.8
Treatment done		
Surgery	8	6.7
Surgery and Chemo-therapy	35	29.2
Surgery, Chemo-therapy and radiation therapy	77	64.2

Table 2. Distribution of Respondents according to Anxiety level and Depression level as per HADS-A, HADS-D

Anxiety level	Frequency	Percent
0-7(no cases)	13	10.8
8-10(mild cases)	30	25.0
11-15(moderate cases)	58	48.3
16 and above (severe cases)	19	15.8
Mean score=11.81 (S.D=3.47), minimum score=2, maximum score=21		
Depression level	**Frequency**	**Percent**
0-7(no cases)	8	6.7
8-10(mild cases)	35	29.2
11-15(moderate cases)	72	60.0
16 and above (severe cases)	5	4.2

Mean score=11.266 (S.D=2.782), minimum score=3, maximum score=19

Anxiety and depression

According to table 2, the mean depression score was 11.266 (S.D=2.782) and mean anxiety score was 11.81 (S.D=3.47). Analysis found 15.8% of respondents had severe anxiety, 48.3% had moderate anxiety, and 25% had mild form of anxiety. Similarly, 4.2% were found to have severe depression, 60% had moderate depression, and 29.2% respondents had mild level of depression.

Table 3 suggests that depression level is significantly associated with educational level of respondents (p=0.014), occupation of the respondents (p=0.001), and anxiety level of respondents (p=0.000). Illiterate respondents had higher level of depression. Similarly, housewives were found to have higher level of depression than working respondents. The higher the anxiety level of respondents, the higher their depression level. The table also shows that depression level is not associated with age group , marital status, family status, time since diagnosis, and treatment done on respondents. Variable significantly associated with depression were further analyzed using Spearman's rho correlation analysis and regression analysis.

Table 3. Showing the Result of Chi square done in level of depression with and categories of socio-demographic and disease related variables and anxiety

Variable		No depression	Mild depression	Moderate depression	Severe depression	Total	Chi square (p value)
Age group	20-30	0(0%)	2(1.7%)	0(0%)	0(0%)	2(1.7%)	22.141 (0.104)
	30-40	2(1.7%)	4(3.3%)	10(8.3%)	0(0%)	16(13.3%)	
	40-50	3(2.5%)	12(10%)	28(23.3%)	0(0%)	43(35.8%)	
	50-60	1(0.8%)	9(7.5%)	23(19.2%)	2(1.7%)	35(29.2%)	
	60-70	1(0.8%)	8(6.7%)	10(8.3%)	3(2.5%)	22(18.3%)	
	70-80	1(0.8%)	0(0%)	1(0.8%)	0(0%)	2(1.7%)	
Marital status	Married	6(5%)	29(24.2%)	62(51.7%)	5(4.2%)	102(85%)	3.720 (0.714)
	Unmarried	2(1.7%)	6(5%)	8(6.7%)	0(0%)	16(13.3%)	
	Widow	0(0%)	0(0%)	2(1.7%)	0(0%)	2(1.7%)	
Family structure	Joint family	8(6.7%)	32(26.7%)	68(56.7%)	5(4.2%)	113(94.2%)	1.293 (0.731)
	Single family	0(0%)	3(2.5%)	4(3.3%)	0(0%)	7(5.8%)	
Education	Illiterate	1(0.8%)	18(15%)	38(31.7%)	4(3.3%)	61(50.8%)	25.072 (0.014)

	Primary	0(0%)	5(4.2%)	10(8.3%)	1(0.8%)	16(13.3%)	
	Secondary	1(0.8%)	5(4.2%)	16(13.3%)	0(0%)	22(18.3%)	
	Campus	5(4.2%)	5(4.2%)	6(5%)	0(0%)	16(13.3%)	
	University	1(0.8%)	2(1.7%)	2(1.7%)	0(0%)	5(4.2%)	
Occupation	Service	3(2.5%)	4(3.3%)	7(5.8%)	0(0%)	14(11.7%)	33.523 (0.001)
	Agriculture	0(0%)	14(11.7%)	25(20.8%)	0(0%)	39(32.5%)	
	Housewife	3(2.5%)	11(9.2%)	36(30%)	5(4.2%)	55(45.8%)	
	Business	1(0.8%)	6(5%)	4(3.3%)	0(0%)	11(9.2%)	
	Others	1(0.8%)	0(0%)	0(0%)	0(0%)	1(0.8%)	
Duration since diagnosis (years)	0-1	3(2.5%)	22(18.3%)	47(39.2%)	0(0%)	72(60%)	22.721 (0.090)
	1-2	4(3.3%)	9(7.5%)	18(15%)	3(2.5%)	34(28.3%)	
	2-3	0(0%)	2(1.7%)	3(2.5%)	1(0.8%)	6(5%)	
	3-4	0(0%)	1(0.8%)	3(2.5%)	0(0%)	4(3.3%)	
	4-5	1(0.8%)	1(0.8%)	0(0%)	1(0.8%)	3(2.5%)	
	5-6	0(0%)	0(0%)	1(0.8%)	0(0%)	1(0.8%)	
Treatment	Surgery	1(0.8%)	3(2.5%)	4(3.3%)	0(0%)	8(6.7%)	3.880 (0.693)
	Surgery+ chemo	1(0.8%)	8(6.7%)	25(20.8%)	1(0.8%)	35(29.2%)	
	Surgery+chemo+radiation	6(5%)	24(20%)	43(35.8%)	4(3.3%)	77(64.2%)	
Anxiety level	No anxiety	4(3.3%)	5(4.2%)	3(2.5%)	1(0.8%)	13(10.8%)	45.099 (0.000)
	Mild anxiety	2(1.7%)	17(14.2%)	10(8.3%)	1(0.8%)	30(25%)	
	Moderate anxiety	2(1.7%)	11(9.2%)	45(37.5%)	0(0%)	58(48.3%)	
	Severe anxiety	0(0%)	2(1.7%)	14(11.7%)	3(2.5%)	19(15.8%)	

Table 4 shows the result of Spearman's rho correlation analysis. Depression was found to be negatively correlated with educational status of respondents (Correlation coefficient=-0.226, P=0.013) and positively correlated with anxiety level of respondents (Correlation coefficient=0.450, P=0.000).

Finally table 5 shows the result of regression analysis it was found that educational status (P=0.008, B=-0.466 and Beta=-0.212) along with anxiety level of respondents (P=0.000, B=0.369 and Beta=0.461) accounts for 30.4% of variance in depression level of respondents (F=25.494 and R2=0.304).

Table 4. Correlates of depression

Variable	Correlation coefficient (P-value)
Educational status of respondents	-0.226* (0.013)
Anxiety level of respondents	0.450** (0.000)
**. Correlation is significant at the 0.01 level (2-tailed).	*. Correlation is significant at the 0.05 level (2-tailed).

Table 5. Multiple regressions for depression

Dependent variables	Variables	B	Beta	*t*	*P*	R^2	*F*
Depression	anxiety	0.369	0.461	5.819	0.000	0.304	25.494
	Education status	-0.466	-0.212	-2.679	0.008		

Discussion

Women are the main victim of breast cancer in Nepal with only one male patient in this study. The mean age of respondents was 51.92 years indicating that majority of women with breast cancer in Nepal are at mid-life so they still have almost half of their life which can be improved by improving their quality of life. Patients from 11 administrative zones out of 14 participated in this study.

Only 10.8% of respondents did not have anxiety and 6.7% of respondents did not have depression. The analysis of this study suggests that anxiety and depression is highly prevalent among breast cancer patients in Nepal in comparison with other countries. The prevalence of depression in breast cancer survivors varied greatly from as low as 1% to as high as 56%. [19, 22]. Other studies also suggest higher prevalence of anxiety and depression among breast cancer patients. Nearly 50% of women with early breast cancer had depression, anxiety or both in the year after diagnosis, 25% in the second, third and fourth years and 15% in the fifth year. [23] Poverty, male dominated social structure, gender discrimination, illiteracy, low screening for cancer, and limited cancer treatment facilities throughout the country may have resulted in the above mentioned findings in Nepal.

Despite recent advancement in cancer treatment, Nepal is still struggling to improve and manage even conventional modalities for cancer treatment because of many socio-economic and political conditions. This scenario makes people believe cancer treatment as a dead-end which leads to higher level of anxiety and depression among cancer patients. A major number of cancer patients die due to lack of treatment facilities in Nepal. The main focus of cancer management is still focused on treatment whereas psychological rehabilitation has not yet been included in the treatment plan.

Among significantly associated variables (education, occupation, and anxiety), series of analysis in this study found education being negatively correlated and anxiety positively correlated with depression. Also education and anxiety level of respondents were found to predict depression level among breast cancer patients in Nepal.

In contrary to previous studies, this study found family structure not being significantly correlated to depression level of respondents. Family structure was found to be negatively correlated with depression level but it was not significant. This might have been due to small sample size, whereby there were only 7 respondents from single families and 113 respondents from joint families.

Similar results were found in other studies as well. Depression was found not being associated with any of the disease related variables [23, 24, 25]. Employment was found to have significant impact on depression on those suffering from breast cancer [26] . Anxiety ($P<0.001$) significantly correlated with depression level of respondents and accounted for 40% variance in depression level among women with breast or gynecological cancer [27]. Another study found education being correlated with depression level of respondents [28].

Among the different breast cancer subpopulations and the different cancer treatments experienced, the most prevalent psychological disorder in women with breast cancer are sleep problems, fatigue, pain , and depressive and anxiety spectrum disorders [15].

For illiterate and respondents with lower level of education, challenges increase as it becomes difficult for them to get enough information or understand the disease process, and its management which results in cognitive and emotional difficulty in understanding complex information and decision making. This also

leads to situation where patient does not feel able to establish a relationship of trust with the professionals who treat them. Also they might not have enough coping resources during the cancer journey.

Limitation of daily activities, disfigurement, poor prognosis, distressing side effects, and social isolation cause anxiety. This disrupts the ability to maintain daily living or self care, coping process leading to negative perception of self, life and future, hopelessness, and finally, patients demonstrate depressive symptoms. Greater psychological morbidity in cancer patients is likely to speed up the disease progression and shorten survival [29]. Anxiety and depression have strong and independent association with mental health domains and somatic symptom burden in cancer patients. [30] HADS-A (anxiety) was found to strongly correlate with total McGill Quality of Life Questionnaire (MMQoL) (r=-0.578) and psychological well- being (r=-0.526). Also HADS-A and HADS-D (depression) were significant in predicting overall health-related quality of life (beta=-0.486, beta =-0.173respectively) [31] .

Conclusion

Thus screening for psychological morbidities in oncology patients is very important as they are at high risk for clinical depression and anxiety. The frequency of breast cancer has been increasing especially in developing countries like Nepal leading to a serious impact on quality of life and survival of the patient. So if there are effective holistic treatment plan including aspects of women's psychology after diagnosis of breast cancer, better survival rate and better quality of life can be obtained.

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Corresponding author: ***Abha Sharma, Tongzipo Road, Yuelu Furong District, Changsha, Hunan, Xiangya Medical College, International Apartments, 8 East Building, across from the library, 410013 P.R. China.***

Email: link2abha9@hotmail.com

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