

RESEARCH ARTICLE

Anxiety and Depression among Breast Cancer Patients in an Urban Setting in Malaysia

Mohd Rohaizat Hassan¹, Shamsul Azhar Shah¹, Hasanain Faisal Ghazi¹, Noor Mastura Mohd Mujar², Mohd Fadhli Samsuri¹, Nizam Baharom¹

Abstract

Background: Breast cancer is one of the most feared diseases among women and it could induce the development of psychological disorders like anxiety and depression. An assessment was here performed of the status and to determine contributory factors. **Materials and Methods:** A cross-sectional study was conducted among breast cancer patients at University Kebangsaan Malaysia Medical Center (UKMMC), Kuala Lumpur. A total of 205 patients who were diagnosed between 2007 until 2010 were interviewed using the questionnaires of Hospital Anxiety and Depression (HADS). The associated factors investigated concerned socio-demographics, socio economic background and the cancer status. Descriptive analysis, chi-squared tests and logistic regression were used for the statistical test analysis. **Results:** The prevalence of anxiety was 31.7% (n=65) and of depression was 22.0% (n=45) among the breast cancer patients. Age group (p= 0.032), monthly income (p=0.015) and number of visits per month (p=0.007) were significantly associated with anxiety. For depression, marital status (p=0.012), accompanying person (p=0.041), financial support (p=0.007) and felt burden (p=0.038) were significantly associated. In binary logistic regression, those in the younger age group were low monthly income were 2 times more likely to be associated with anxiety. Having less financial support and being single were 3 and 4 times more likely to be associated with depression. **Conclusions:** In management of breast cancer patients, more care or support should be given to the young and low socio economic status as they are at high risk of anxiety and depression.

Keywords: Breast cancer - anxiety - depression - urban setting - Malaysia.

Asian Pac J Cancer Prev, 16 (9), 4031-4035

Introduction

The incidence of breast cancer on women throughout the world is indeed heavily. Based on statistics, breast cancer is the second most common cancer worldwide and the most frequent cancer among women with estimated 1.67 million new cases diagnosed in 2012 (Globocan, 2012). In Malaysia, there were 3825 new cases of breast cancer in 2003 and the number of reported deaths from the disease was of 1707. This amount is 34.86% of 100,000 populations where this figure is lower than Singapore, which is 54.44%, recorded in 100,000 populations of women (Abdullah and Yip, 2003).

Recently, more attention has been paid to the rapidly increasing prevalence of psychiatric problems happening in cancer patients. As we know, diagnosis and treatment of breast cancer cases can be a very stressful issue during and after the treatment. Nearly 30% of those who survived cancers were reported some sort of psychological problems (Maeda et al., 2008). Cancer may induce the development of psychology disorder especially women whom having

breast cancer and the effects can be on both the patients and their family members. It is very important to take early measures to treat these psychosocial problems for breast cancer patients and their partners thus will improve their quality of life later (Alacacioglu et al., 2014).

In Malaysia, previous study among breast cancer patients showed prevalence for depression was 19.1% and prevalence for anxiety was 24.1% (Saniah and Zainal, 2010). However, the socioeconomic effect on anxiety and depression among breast cancer patients has yet not been studied into details. Thus, the aim of this study is to determine the associated socio economic factors with anxiety and depression among breast cancer patients in University Kebangsaan Malaysia Medical Center (UKMMC), Kuala Lumpur

Materials and Methods

A cross-sectional study was conducted among 205 women who were diagnosed with breast cancer from 2007 to 2010 in UKM Medical Centre in Kuala Lumpur,

¹Department of Community Health, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, ²Cluster of Healthy Lifestyle, Advanced Medical and Dental Institute (AMDI), Universiti Sains Malaysia, Penang, Malaysia *For correspondence: dr.hasanainhabasha@gmail.com

Malaysia. Data were collected through three types of instruments which were Structured Self- Administrated Questions, Self Rating Scales related to mental health and Patients' Records. Questionnaire of Hospital Anxiety and Depression Scale (HADS) was used in the study as a screening tool for psychiatry morbidity.

The HADS is a 14 item of self-assessment scale for measuring anxiety and depression symptoms was

Table 1. Socio-demographic Characteristics of Respondents

Characteristic	(n=205)	(%)
Age Group		
20- 39	22	10.7
40-59	128	62.4
60-79	53	25.9
>80	2	1
Race		
Malay	92	44.9
Chinese	95	46.3
Indian	16	7.8
Others	2	1
Marital Status		
Single	19	9.3
Married	167	81.4
Widower/ Divorcee	19	9.3
Level of education		
Primary/ Secondary	162	79
Diploma/ Degree	35	17.1
Postgraduate	8	3.9
No. of Children		
≤5	182	88.8
>5	23	11.2
Accompany by		
Family/ Relative	89	43.4
Friends	79	38.5
Own self	37	18.1
Employment Status		
No	131	63.9
Yes	68	33.2
Been work before	6	2.9
Monthly Income		
≤ RM2000	90	43.9
RM2000-RM4000	76	37.1
>RM4000	39	19
Visit per Month		
≤ 2 times	197	96.1
> 2 times	8	3.9

Table 3. Binary Logistic Regression

Factors	β	SE	P value	AOR	95% CI	
					Lower	Upper
Anxiety						
Constant	-0.09	0.9	0.91	0.9		
Age Group (1)	0.85	0.31	0.00*	2.34	1.26	4.38
Monthly Income (1)	0.85	0.31	0.00*	2.34	1.26	4.38
Visit per month (1)	-1.54	0.87	0.07	0.21	0.04	1.17
Depression						
Constant	-2.15	0.69	0.00*	0.11		
Status (1)	1.31	0.52	0.01*	3.72	1.34	10.3
Financial Support (1)	-1.02	0.38	0.00*	2.77	1.31	5.88
Accompany Person (1)	0.61	0.58	0.29	1.84	0.59	5.78
Burden Feeling (1)	0.81	0.46	0.08	2.25	0.91	5.6

*aVariable(s) entered on step 1: Age Group, Monthly Income, Visit per month, *Significant of p<0.05

developed by Zigmond and Snaith (1983) and has been validated in cancer patients. Each item is rated on a scale of 0 to 3 with higher score shows a greater tendency toward anxiety and depression. HADS contains 14 questions in all and divided into anxiety's question (odd number) and depression's question (even number). The Malay version was validated by Fariza (2003) and suggested the following cut-off points for total scores of 0 to 8 for non cases and 8 to 21 for cases. Cut-off point equal to or greater than 8 was the best with 90.0% sensitivity and 86.2% specificity for anxiety meanwhile sensitivity of 93.2% and specificity of 90.8% for depression.

Data were analyzed using SPSS version 16. Statistical test were carried out with univariate, bivariate and multivariable analysis. For univariate analysis, descriptive analysis was used while for bivariate analysis, Chi-square test and Correlation test were used. Binary logistic regression was used for multivariable analysis to control for possible confounders.

Results

Breast cancer patients were mostly aged between 40 to 59 years (62.4%) followed by the age group of 60 to 79 years (25.9%) and the mean age was 52.4 (10.69) years old. The prevalence of breast cancer is highest among Chinese (46.3%) followed by Malays (44.9%), Indian (7.8%) and others (1.0%). Majority of the respondents were married (81.5%) compared to those who are still single (9.3%) or divorcee (9.3%). Most of the women with breast cancer in this study had basic educational level (79.0%). Majority of the women have less than 5 children (88.8%) with mean of 3 (1.95) children. (Table1). Out of 205 respondents, 65 (31.7%) were screened of having anxiety while 140 (68.3%) considered as normal. For depression, 45 (22.0%) were screened as cases and 160 (78.0%) were considered as normal.

Table 2 shows that for anxiety, age group (p=0.032), monthly income (p=0.015) and number of visit per month (p=0.007) are significant factors. Whereas for depression, associated factors include marital status (p=0.012), accompanying person (p=0.041) financial support (p=0.007) and felt burden (p=0.038). Binary logistic regression analysis shows age younger than 50 years old and those earned less than RM2000 are more

Table 2. Bivariate Analysis on Factors Associated with Anxiety and Depression

Characteristics	Anxiety			Depression		
	n (%)	χ^2	p	n (%)	χ^2	p
Age Group						
20- 39	11 (50.0)	8.78	0.03*	8 (36.4)	7.11	0.06
40-59	44 (34.4)			31(24.2)		
60-79	10 (18.9)			6 (11.3)		
>80	0 (0)			0 (0)		
Ethnicity						
Malay	36 (39.1)	0.18		25 (27.2)	0.31	
Chinese	25 (26.3)			16 (16.8)		
Indian	4 (25.0)			4 (25.0)		
Marital Status						
Single	6 (31.6)	0.28	0.86	9 (47.4)	8.85	0.01*
Married	54 (32.3)			34 (20.4)		
Divorcee	5 (26.3)			2 (10.5)		
Level of education						
Pri/Secondary	50 (30.9)	0.285	0.86	34 (21.0)	0.42	0.81
Dip/ Degree	12 (34.3)			9 (25.7)		
Postgrad	3 (37.5)			2 (25.0)		
No. of Children						
≤ 5	58 (31.9)	0.019	0.88	41 (22.5)	0.31	0.57
>5	7 (30.4)			4 (17.4)		
Accompany person						
Family	25 (28.1)	2.345	0.31	17 (19.1)	6.37	0.04*
Friends	30 (38.0)			24 (30.4)		
None	10 (27.0)			4 (10.8)		
Employment Status						
No	37 (28.2)	2.45	0.29	28 (21.4)	2.08	0.35
Yes	25 (36.8)			17 (25.0)		
Work before	3 (50.0)			0 (0)		
Monthly Income						
< RM2K	38 (42.2)	8.43	0.01*	24 (26.7)	3.1	0.212
RM2K-RM4K	19 (25.0)			16 (21.1)		
> RM4K	8 (20.5)			5 (12.8)		
Health Insurance						
No	43 (33.9)	0.71	0.39	27 (21.3)	0.09	0.76
Yes	22 (28.2)			18 (23.1)		
Financial Support						
Self funding	37 (36.3)	5.22	0.15	32 (31.4)	12.23	0.00*
Government	25 (31.6)			9 (11.4)		
Employer	3 (13.6)			3 (13.6)		
NGO	0 (0)			1 (10.0)		
Hospital Charge/ Month						
≤ RM1000	57 (32.2)	0.14	0.7	39 (22.0)	0.005	0.94
> RM1000	8 (28.6)			6 (21.4)		
Visit per Month						
≤ 2 times	59 (29.9)	7.2	0.00*	42 (21.3)	1.17	0.27
> 2 times	6 (75.0)			3 (37.5)		
Felt Burden						
No	14 (24.6)	1.86	0.17	7(12.3)	4.31	0.03*
Yes	51 (34.5)			38(25.7)		

*0 cells (.0%) have expected count less than five, Pearson's Chi Square, * Significant level $p < 0.05$

likely to have anxiety. For depression, being single and receiving less financial support are more likely to have depression. (Table 3)

Discussion

Our study among breast cancer patients shown that the prevalence of anxiety was 31.7% and depression 22.0%. Younger age group, low monthly income were associated with anxiety; Whereas having less financial support and being single were the associated with depression.

Depression is the most common psychological problem found in patients with cancer, and necessary coping strategies are required to deal with this problem. Patient's attitude and reactions are totally influenced by their own perception of their disease (Şahin et al., 2013). In addition, cancer patients reported that it is difficult to live a normal life because of depression and suicidal thoughts (Kamen et al., 2010; Maneeton et al., 2013). Results from our study showed that about 31.7 percent of the breast cancer patients had anxiety, 22.0 percent had depression and 16.6 percent had both of these

psychological symptoms.

Anxiety shows much higher prevalence rather than depression prevalence. From those who have anxiety 52.3 percent of them developed depression. Anxiety was significantly associated with depression with a fair strength of relationship which explains 25% depression occurrence among the breast cancer patients. From the regression analysis, it is significantly shows that those breast cancer patient who have anxiety is 12 times higher at risk of getting depression. Study at Norwegian Hospital found that the prevalence of anxiety and depression among the patients was 13% and 9% respectively. The risk of psychiatric distress was approximately twice in hospitalized patients than in the outpatient clinic (Aass et al., 1997). Ali Montazeri et al. (2000), in his study on Iranian breast cancer support group found that from all current members of the three support groups, 29% scored high on the anxiety and 14% scored high on the depression. Osborne et al. (2003), on his study to determine the population norms and determinants of anxiety and depression found that the prevalence of anxiety was 23% and depression was 3%. From the various previous studies, it could be concluded that, breast cancer could induce the occurrence of anxiety and depression. In other studies, uses of higher cut-off points score of 11 or higher make the prevalence less small rather than 8 which could explained the higher percentage of patients reporting psychiatry morbidity in this study. Although the prevalence represented much higher but those rates are in agreement with the results as such selection (inclusion criteria) was performed in our investigation. This selection could reduce the bias in order to reduce the number of false positive diagnoses.

Middle age group women shows the highest prevalence of breast cancer. This finding supported by the data from the 2nd Report of The National Cancer Registry 2003, which shows that the commonest age of breast cancer is between 40 to 49 years with mean age of 50 years old. The mean age of breast cancer patients in Malaysia were lower compared to the west and developed countries (NCR 2004). This could be related to Malaysian population structure whereby, the median age of Malaysian is only around 24 years old (Yip et al., 2006).

The prevalence by ethnicity showed Malay and Chinese have almost similar prevalence of breast cancer compared Indian. However, the age standardized incidence for breast cancer in Chinese is the highest followed by the Indians and Malay with the lowest incidence (NCR, 2004). Even though NCR stated that Malay was the lowest incidence, however in UKMMC majority of the breast cancer patients who came for treatment were Malays. Besides, UKMMC is the referral centre and cater for the community around Cheras where most of the residences were Malays, might explain for the result. This also could be related to the health behaviour whereby urban Malay women are more conscious about their health status by preferably seek medical practitioner rather than alternative therapy, compared with the rural Malay women. This supported by the study which found that, women attending breast clinics in Kelantan state were more likely to delay going to the hospital compared to those living in Kuala

Lumpur (Yip et al., 2006).

Married women were found to be with the highest prevalence of breast cancer. For the impact of psychiatry morbidity due to status, single and married women were found to have similar prevalence of anxiety respectively. However single woman showing much higher prevalence on depression rather than married women. Married women are more anxious because they have families to take care which were the biggest commitment in their life while single women are more depressed may because of they afraid of losing their partner and friends due to their lost of femininity attraction. Feel of low self esteem after having surgery may contribute to the psychiatry morbidity. Since the perception of breast cancer as a fatal disease, they are more worried about their life and their future. In this study, marital status was significantly associated with depression but not for anxiety. In the study by Aass et al. (1997), it shows that neither the patient's civil status (married, widowed, single) nor their situation of living (living alone or with partner) as significantly related to the prevalence of anxiety and depression.

Economic status plays an important role in term of cancer treatments. In this study, patients' economic status was studied to investigate any association between their economic level and psychiatry morbidity. From the findings, most of the patients are not working and have low monthly income less than RM2000 per month. This situation was considered as low living status due to the high living cost in an urban city as Kuala Lumpur. Some of the patients were come from areas far away from UKMMC, such as Seremban and as far as Kuantan. The cost of transportation and accommodation can be considerably high. As consequences, majority claimed that they felt burdened by cancer treatment and the expenses, especially when referring to their economic status. If this feeling is not being treated, it could allow for the occurrence of psychiatric morbidity. This supported by Ell (2005) which found that low income women are characterized by the prevalent of anxiety and depression due to unlikely of receiving any treatments.

Many studies found that economic status were associated with prevalence of psychiatry morbidity. In this study, socioeconomic status data were taken from the breast cancer patients to study on the relation of economic status towards anxiety and depression. Lower economic status and higher treatments expenses were directly associated with anxiety and depression percentage. Come to the hospital for treatment were need budget in terms of transportation, fuel, tolls, parking fee and accommodation. Besides, family or friends who accompany the patient for treatment are not entitled for the hospital meals. Hence, extra expenses were needed to buy for the meals. This supported by Ell. (2005), which found that Major Depression Disorder (MDD) is prevalent among ethnic minority and low income breast cancer women. It appears to be correlated with pain, anxiety, depression and health related quality of life. Due to the low economic status, these women are unlikely to receive psychiatry treatment or supportive counselling. In other studies found that, there were significantly more patients receiving disability pension reported anxiety compared to patients with earned

income, patients on sick-leave, patients receiving age pension or unemployed patients (Aass et al., 1997).

The findings of this study recommend the importance of early and appropriate intervention towards the socio economic status of breast cancer patients. Adequate financial support especially to the single and younger age group patients may prevent anxiety and depression among them.

This study shows that the prevalence of anxiety and depression among breast cancer patients in Malaysia is high. Younger age group, low monthly income, having less financial support and being single were associated with anxiety and depression. In management of breast cancer patients, more care or support should be given to

based cancer registry. *Eur J Cancer*, **39**, 755-62.

Sahin ZA, Tan M, Polat H (2013). Hopelessness, depression and social support with end of life Turkish cancer patients. *Asian Pacific J Cancer Prev*, **14**, 2823-8.

Saniah AR, Zainal NZ (2010) Anxiety, depression and coping strategies in breast cancer patients on chemotherapy. *Malaysian J Psychiatry*, **19**, 1-6.

Yip CH, Aishah T, Ibrahim N (2006) Epidemiology of breast cancer in Malaysia. *Asia Pas J Cancer Prev*, **7**, 369-73.

Zigmond AS, Snaith RP (1983) The hospital anxiety and depression scale. *Acta Psychiatrica Scand*, **67**, 361-70.

Acknowledgements

This study obtained ethical approval from UKM Medical Research Committee and was funded by the Universiti Kebangsaan Malaysia Medical Centre Fundamental Research Grant (FF-132-2010).

References

- Ahmet Alacacioglu, Eda Ulger, Umut Varol, et al (2014). Depression, anxiety and sexual satisfaction in breast cancer patients and their partners-izmir oncology group study. *Asian Pac J Cancer Pre*, **15**, 10631-6.
- Aass N, Fossa SD, Dahl A, Moe TJ (1997). Prevalence of anxiety and depression in breast cancer patients seen at the norwegian radium hospital. *Eur J Cancer*, **33**, 1597-4.
- Abdullah NH, Yip CH (2003) Spectrum of breast cancer in Malaysia women. *Overview World Journal of Surgery*, **27**, 921-3.
- Ali Montazeri, Soghra Jarvandi, Shahpar Haghghat, et al (2001). anxiety and depression in breast cancer patients before and after participation in a cancer support group. *Patient Education Counseling*, **45**, 195-8.
- Ell K (2005). Depression, correlates of depression and receipt of depression care among low income women with breast cancer or gynaecologic cancer. *Women Oncol Review*, **5**, 227-8.
- Fariza (2003). Psychological distress, anxiety and depression among employees attending staff clinic in Hospital Universiti Sains Malaysia (HUSM). dissertation msc. *University of Science Malaysia*.
- Globocan (2012). Estimated Cancer incidence, Mortality and Prevalence Worldwide in 2012. Available online at http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx. Accessed on 24 Jan 2015
- Kamen BA (2010) Clinical aspects of pharmacogenetics of pain and co-morbidities of emotional distress. *Asian Pac J Cancer Prev*, **11**, 27-30.
- Maeda T (2008) The effect of psychological intervention on personality change, coping and psychological distress of Japanese primary breast cancer patients. *Cancer Nurs*, **31**, 27-34.
- Maneeton B, Maneeton N, Mahathep P (2012) Prevalence of depression and its correlations: a cross-sectional study in Thai cancer patients. *Asian Pac J Cancer Prev*, **13**, 2039-43.
- NCR (2004) 2nd Report of the national cancer registry: cancer incidence in malaysia 2003. ministry of health Malaysia.
- Osborne RH, Elsworth GR, Hopper JL (2002) Age-specific norms and determinants of anxiety and depression in 731 women with breast cancer recruited through a population-