

## RESEARCH ARTICLE

# Depression, Hopelessness and Social Support among Breast Cancer Patients: in Highly Endogamous Population

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### Abstract

**Aim:** The aim of this study was to assess the relationship between different demographic variables, hopelessness, depression and social support of Breast cancer patients in Qatari's population. **Design:** This is an observational cohort hospital based study. **Subjects and Methods:** The study included 678 breast cancer patients. The questionnaires included a demographic questionnaire, the Beck Hopelessness Scale (BHS), Beck Depression Scale (BDS) and Multidimensional Scale of Perceived Social Support (MSPSS). The demographic questionnaire was used to assess patients' basic information including gender, age, marital status, education, family size, and place of residence. Medical information regarding cancer stage, the time passed since diagnosis, treatment, and duration of disease were recorded. **Results:** The mean age of the studied women was 47.7±10.2 years. Among the studied patients, 34.7% were Qataris and 65.3% were Arab expatriates. Nearly 39.2% of the patients were in pre-menopausal status and 60.8% in post-menopausal status. 86.1% of women were married. 14.6% were illiterate women, 20.9% were university graduates and 37.2% were housewives. Smoking habit was less common in studied Arab women (9.1%), but, sheesha smoking was more common, 17.7%. Daily physical activity indicated 25.7% were walking 30 minutes per-day and 14% were walking 60 minutes per day. 30.4% of them had consanguineous parents. Breast feeding was practiced among 67.7% of women and over 73% were considered overweight and obese. Furthermore, over 75% of breast cancer women were at the Stage 3 (40.9%) and Stage 4 (35.8%) of cancer. The percentage of patients who underwent mastectomy and lumpectomy were 49.3 % and 50.7%, respectively. It was observed that 27.7% of BDI patients had moderate depression and 19.5% of the BDI patients had severe depression and with mean and standard deviation 25.1±7.7. Also, the mean and SD of BDI for consanguineous has showed statistically significant 28.4±5.7 than non- consanguineous 23.2± 8.0 (p<0.001). All socio-demographic variables showed statistically significant differences with the total BHS score. The highest score belongs to the family sub-dimension. **Conclusion:** The present study indicates that hopelessness of the patients with breast cancer decreased with the increase in their social support. Therefore, activating patient social support systems is of importance in increasing their levels of hope. The present study revealed the coexistence of the socio-demographic, physical, psychological, and cognitive problems faced by patients with cancer.

**Keywords:** Breast cancer- lifestyle- consanguinity- hopelessness- depression and Social Support

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### Introduction

Breast cancer, one of the most important health problems of women in developed countries, accounts for almost 30% of all cancer types among women (WHO, 2015). As for Qatar breast cancer has been the most common cancer type that affects women and in the majority of developed countries (WHO, 2014). Breast cancer was the most common cancer worldwide in women accounting for more than 25% of the total number of new cases diagnosed in 2012 (Globocan, 2012). Cancer is one of the most common causes of death worldwide, accounting for 7.6 million deaths in 2008 (WHO, 2011). It has been estimated that this number will rise to 11 million in 2030 (WHO, 2011). The breast cancer mortality

rate is also expected to rise significantly in developed and in developing countries (Bener et al, 2013). Breast cancer is one of the most frequent causes of morbidity and mortality among women in the world and receiving a diagnosis of cancer is an extremely stressful and depressive. Cancer can have major adverse physical, psychosocial, and economic consequences for both the individual with the illness and their families (Todd et al., 2002). Psychological distress is frequently observed in cancer patients during the clinical course of this disease. Patients are confronted with problems such as fear of death, unresolved issues, parting with family, and pain (Taylor, 2003). Psychological distress is characterized by the inability to cope effectively with a stressor that can lead to symptoms of depression, stress and anxiety that

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are closely tied to somatic symptoms (Mclean, Strongman and Neha, 2007). Loss of interest, sadness, hopelessness, restlessness, tension, insomnia, headache and lack of energy are some of the most common characteristics of psychological distress that can affect an individual's social functioning and daily life due to cancer (Mclean, Strongman and Neha, 2007). The prevalence of psychiatric disorders following a primary diagnosis of cancer has been reported to range from 14% to 38% and feelings of depression is a common psychiatric disorder in cancer patients, while hopelessness has been associated with depression (Molina et al. 2014; Koopman et al. 2001; Okamura et al., 2005; Oztunc et al., 2013). It is estimated that between 20% and 30% of cancer patients experience clinically significant depressive symptoms at any one time. Social support has been defined as the assistance and protection given to others, especially to individuals (Sahin et al., 2013). Scientists have for many years recognized a positive relationship between social support and health. Social support is well documented as one of the most popular and preferred modes of coping with hopelessness; indeed, this is also indicated in the general population (Scherer- Rath, 2001).

The highly sophisticated advancement of medical technology has apparently increased the survival rate of breast cancer patients and has made it possible for patients to live a prolonged life with long-term medication following surgery or chemotherapy. In addition to the prolonged lifetime, breast-cancer patients are also concerned with improved quality of life (Clarke, 2010). Breast cancer poses specific challenges, both physiologically and psychologically to women. Specifically, intensive surgical and medical treatments destroy the integrity of the female body image, which consequently affects the patient's mental health. An extensive literature review has shown that nearly a third to a half of female breast-cancer patients are likely to experience psychological distress (Knobf 2007), and up to one-third suffer from psychological morbidity, such as anxiety or depression (Helgeson et al., 2004). Even after an effective treatment of the physical disease, such psychological distress may persist and accompany the patient for a long period, which has a dramatic negative impact on the patient's quality of life (Helgeson et al., 2004; Wade and Lee 2005). Previous studies have shown that psychosocial factors play an important role in the symptoms and development of mental disorders (Knobf, 2007; Helgeson et al., 2004; Tobiasz-Adamczyk et al., 2013; Oztunc et al., 2013; Molina et al., 2014). A longitudinal study of breast-cancer survivors has suggested that the course of the psychological symptom distress of a breast-cancer survivor is significantly affected by that of her supportive partner (Segrn and Badger, 2004). A more recent study found that a reduction in received support was related with a higher risk of mental disorders (Tobiasz-Adamczyk et al., 2013). Several studies reported that passive coping styles such as denial can promote anxiety, depression and cancer-related worries (Deimling's 2006; Pan et al. 2013).

However, there has been no previous study regarding the hopelessness, depression and social support of breast cancer patients during terminal phase in Qatar. Therefore

this study was performed to assess the relationship between different socio-demographic variables and hopelessness, depression and social support of Breast cancer patients in Qatari's population

## Materials and Methods

In Asian and Arabian Gulf Countries breast cancer is the leading cancer among women (WHO, 2014), and the increasing morbidity and mortality rates could be due to the late diagnosis of the disease. The incidence rates of breast cancer in Qatar increased from 45 per 100,000 persons in 2003–2007 to 56 per 100,000 persons in 2008–2011 (Forman et al., 2013; Bener et al., 2007; Bener, El Ayoubi, 2012). Qatari patients accounted for 32% of all the breast cancer diagnoses in females aged 40–50 years, and 36 per cent of all affected women (Forman et al., 2013; Bener et al., 2007; Bener et al., 2010).

This is an observational cohort hospital study based on the national Cancer Disease Registry of the Al-Amal hospital. This national Cancer Disease Registry registers all the reported cancer cases in Qatar. They record complete information of the patients diagnosed with any type of cancer in Qatar. Al Amal hospital succeeded in offering a multidisciplinary approach to cancer care. The main tertiary care center, Hamad General Hospital, has main Central Laboratory for histopathology and cytological diagnosis of cancer. The computer system in the pathology department is organized such that on reporting any cancer cases, a copy of the histopathology report is sent to the cancer registry. All the positive cases of cancer reports from the Hamad General Hospital Central lab are forwarded to the cancer disease registry, thus ensuring that any cancer patient in Qatar would be accurately documented. All cancer cases were coded using International Classification of diseases 10 (ICD 10). According to ICD-10, malignant neoplasms of breast were coded under C50.

A list of 995 eligible breast cancer patients was prepared, from the disease registry from January 2009 to June 2014 who could be contacted. From the list, 678 breast cancer patients agreed to take part in this study, thus a response rate of 68.1%. 317 women refused to take part in the study due to personal reasons and lack of time. The data of socio-demographic information, type of consanguinity, menopause status, medical history, lifestyle habits, dietary intake, were collected using a questionnaire. The anthropometric measures of the studied subjects were collected and measured by qualified and well-trained nurses. Height and weight were measured using standardized methods. The BMI was calculated as weight in kilograms divided by height in meters squared.

### Data collection and tools

The questionnaires included a demographic questionnaire, the Beck Hopelessness Scale (BHS), Beck Depression Scale (BDS) and Multidimensional Scale of Perceived Social Support (MSPSS). The demographic questionnaire was used to assess patients' basic information including gender, age, marital status, education, family size, and place of residence. Medical

information regarding cancer stage, the time passed since diagnosis, treatment, and duration of disease were recorded. The questionnaires (demographic questionnaire, Beck Hopelessness Scale (BHS), Beck Depression Scale (BDS) and Multidimensional Scale of Perceived Social Support (MSPSS) took approximately 45 minutes for participants to complete.

#### *Beck Hopelessness Scale (BHS)*

The Beck Hopelessness Scale (Beck et al., 1974) was designed to measure three major aspects of hopelessness: feelings about the future, loss of motivation, and expectations. The Scale is a 20-item questionnaire that assesses hopelessness by measuring participants' negative expectancies regarding future events. The scale has three sub-dimensions which are "feelings and expectations about future" (1st, 3rd, 7th, 11th, and 18th items), "loss of motivation" (2nd, 4th, 9th, 12th, 14th, 16th, 17th, and 20th items), and "hope" (5th, 6th, 8th, 10th, 13th, 15th, and 19th items). Each item response is assigned a score of 0 (hopeful) or 1 (hopeless). Thus, the total BHS Score can range from 0 to 20, a higher score indicating greater hopelessness. Scores 4-8 indicate mild hopelessness, 9-14 moderate and 15-20 severe hopelessness. In this study, the alpha coefficients for patients were found to be 0.80.

#### *Beck Depression Inventory*

The BDI was developed by Beck et al., (1988). Individual questions of the BDI assess mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, body image, work difficulties, insomnia, fatigue, appetite, weight loss, bodily preoccupation, and loss of libido. Items 1 to 13 assess symptoms that are psychological in nature, while items 14 to 21 assess more physical symptoms. The BDI assesses depressive symptoms and is a 21-item, 4-point scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). The highest score is 63; 1-10 is considered normal, 11-16 indicates a mild mood disturbance, 17-20 indicates borderline clinical depression, 21-30 indicates moderate depression, 31-40 indicates severe depression, and a score greater than 40 indicates extreme depression. In this study, the alpha coefficients for patients were found to be 0.87.

#### *The Multidimensional Scale of Perceived Social Support*

The Multidimensional Scale of Perceived Social Support (MSPSS) was used with a view to identifying the participants' perceived social support elements, developed by Canty-Mitchell and Zimet (2000). The scale which evaluates the adequacy of social support received from three different sources in a subjective way consists of 12 items. The three groups each of which has four items about the source of social support are family (3rd, 4th, 8th, and 11th items), friends (6th, 7th, 9th, and 12th items) and a special person (1st, 2nd, 5th, and 10th items). Each item is rated on a 7 point scale. The 12 item scale uses a 7-point likert type response format (1= very strongly disagree, 7 = Very strongly agree) Hence, high scores indicate high social support.

The study was approved by the Research Ethics Committee of Hamad General Hospital, Hamad Medical Corporation and conducted in accordance with the Declaration of Helsinki. All the persons who agreed to participate in this study gave their informed consent prior to their inclusion in the study.

Student-t test was used to ascertain the significance of differences between mean values of two continuous variables and confirmed by non-parametric Mann-Whitney test. Chi-square and Fisher's exact test were performed to test for differences in proportions of categorical variables between two or more groups. One Way Analysis of Variance and non-parametric statistical method the Kruskal -Wallis one way analysis of variance was performed to evaluate differences among different characteristics group. The Spearman rank correlation coefficient was used to evaluate the strength association between two variables. The level  $p < 0.05$  was considered as the cut-off value for significance.

## Results

Table 1 shows the socio-demographic characteristics of the breast cancer patients (N= 678). The mean age of the studied women was  $47.7 \pm 10.2$  years. Among the studied patients, 34.7% were Qataris and 65.3% were Arab expatriates. Nearly 39.2% of the patients were in pre-menopausal status and 60.8% in post-menopausal status. 86.1% of women were married. 14.6% were illiterate women, 20.9% were university graduates and 37.2% were housewives. Smoking habit was less common in studied Arab women (9.1%), but, sheesha smoking was more common 17.7%.

Table 2 presents life-style and clinical characteristics of the study sample. Daily physical activity was less practiced among women during hot climates, only 25.7% were walking 30 minutes per-day and 14% were walking 60 minutes per day. 30.4% of the patients had consanguineous parents. Breast feeding was practiced among 67.7% of women and over 73% were considered overweight and obese. Furthermore, over 75% of breast cancer women were at the Stage 3 (40.9%) and Stage 4 (35.8%) of the disease. The percentage of patients who underwent mastectomy and lumpectomy were 49.3 % and 50.7%, respectively.

Table 3 gives Beck depression Inventory Comparison of consanguineous and non-consanguineous among breast cancer patients. It was observed in this study that 27.7% of BDI patients had moderate depression and 19.5% of the BDI had severe depression and with mean and standard deviation  $25.1 \pm 7.7$ . Also, the mean and standard deviation of BDI for consanguineous has been shown to be statistically significant  $28.4 \pm 5.7$  than non- consanguineous  $23.2 \pm 8.0$  ( $p < 0.001$ ). As can be seen from Table 3; sadness, pessimism, sense of failure, guilt, punishment, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, anorexia, weight loss, somatic preoccupation and libido loss.

Table 4 presents mean score of socio-demographic variables, hopelessness, and social support to the patients' descriptive characteristics. All socio-demographic

Table 1. Socio-Demographic Characteristics of Breast Cancer Patients (N= 678)

	n	%
Age [ Mean ± SD]	47.7±10.2	Range 19-75
Age groups		
<30	32	4.7
30-39	99	14.6
40-49	267	39.4
≥ 50	280	41.3
Ethnicity		
Qatari	235	34.7
Other Arabs	443	65.3
Menopausal		
Pre menopausal (non-menopause)	266	39.2
Age [ Mean ± SD]	38.2±5.3	
Post menopausal (menopause)	412	60.8
Age [ Mean ± SD]	53.8±7.4	
Marital status):		
Single	94	13.9
Married	584	86.1
Education level		
Illiterate	93	14.6
Primary	111	17.5
Intermediate	127	20
Secondary	171	26.9
University or higher	133	20.9
Occupation		
Housewife	236	37.2
Sedentary/teacher	210	33.1
Clerk/Officer/Administrator	79	12.4
Businesswomen	110	17.4
Household Income		
<\$2,000	66	10.4
\$2,000 – 3,999	163	25.7
\$4,000 – 6,000	183	28.8
>\$6,000	223	35.1
Smoking		
Yes	62	9.1
No	616	90.9
Sheesha Smoking		
Yes	120	17.7
No	558	82.3

variables showed statistically significant differences with the total BHS score. The highest score belongs to the family sub-dimension. A comparison of the hopelessness and social support scores of the participants shows that there is a linear relationship between hopelessness and only friends sub-dimension of the social support scale.

## Discussion

Hope is an important factor in increasing individuals' motivation and prevents the feeling of desperation

and helplessness, as well as helping patients to feel optimistic and maintain the cancer treatment (Oztunc et al., 2013). The present study score showed depression is the most common psychological problem encountered in patients with breast cancer in Qatar, and effective coping strategies and plans are important for prevention, treatment and disease related psychological problem. The results revealed that depression and hopelessness were more strongly related to each other. The higher levels of depression were strongly related to higher levels of hopelessness. The current study findings also suggest that

Table 2. Life-Style and Clinical Characteristics of Study Sample (N=678)

Variables	Frequency and Percentage n (%)
Physical activity walking per-day	
30 Minutes	174 (25.7)
60 Minutes	95 (14.0)
None	409 (60.3)
Parity	
<3 children	457 (67.4)
>3 children	221 (32.6)
Breast-feeding	
Yes	459 (67.7)
No	219 (32.3)
Body Mass index Group-BMI (Kg/m <sup>2</sup> ):	
20-24.99 (Normal)	187 (27.6)
25-30 (Overweight)	285 (42.0)
>30 (Obese)	206 (30.4)
Consanguineous parents	
Yes	235 (34.7)
No	443 (65.3)
First degree Family history Cancer	54 (17.8)
Illness duration in years	
1-2 Years	167 (24.6)
3-4 Years	285 (42.0)
=>5 Years	226 (33.3)
Stage of Cancer	
Stage 1	99 (14.6)
Stage 2	277 (40.9)
Stage 3	243 (35.8)
Stage 4	59 (8.7)
Treatment modality	
Mastectomy	335 (49.4)
Lumpectomy	343 (50.6)
Chemotherapy	549 (81)
Radiotherapy	569 (84)
Hormonal therapy	445 (65.6)

\* Multiple-choice

hopelessness may play an important role in alleviating depressive symptoms in breast cancer.

The current study of breast cancer patients revealed overall BDI depression score with mean and standard deviation of 25.1±7.7. Also, the mean and SD of BDI for consanguineous has showed statistically significant 28.4±5.7 than non- consanguineous 23.2± 8.0 (p<0.001). This is confirmative with the study conducted by Sahin et al (2013) among Turkish breast cancer patients with a mean score of 23.03± 2.45. It was observed in this study that 27.7% of BDI patients had moderate depression and 19.5% of the BDI had severe depression, this is consistent with study determined 45% by by Jenkins, May, and Hughes, (1991) and Miaskowski, (2004) determined in their study that 53.2% of cancer patients had depression.

Table 3. Beck Depression Inventory Comparison of Consanguineous and non-Consanguineous among Breast Cancer Patients (N= 678)

Variables	Consanguineous n= 235 (34.7%) (Mean ± SD)	Non- Consanguineous n= 443 (65.7%) (Mean ± SD)	P Value
Overall average	28.4±5.7	23.2±8.0	0.001
Sadness	1.65±0.91	1.22±0.94	0.001
Pessimism	1.62±0.99	1.29±1.00	0.001
Sense of failure	1.53±0.77	1.18±0.86	0.001
Dissatisfaction	0.77±0.85	0.79±0.89	0.71
Guilt	0.95±0.99	1.09±1.03	0.108
Punishment	0.99±1.00	0.82±0.92	0.029
Self-dislike	1.30±0.97	1.16±1.01	0.079
Self-accusation	1.15±1.14	0.95±1.00	0.024
Suicidal ideas	1.66±0.96	1.18±1.00	0.001
Crying	1.94±0.79	1.53±0.87	0.001
Irritability	1.32±0.99	1.09±1.03	0.006
Social withdrawal	1.50±0.94	1.19±0.94	0.001
Indecisiveness	1.46±1.18	1.09±1.05	0.001
Body image change	1.38±0.90	1.04±0.91	0.001
Work inhibition	0.88±0.98	0.76±0.97	0.126
Insomnia	1.21±1.03	1.15±0.98	0.427
Fatigability	1.06±1.07	0.93±1.01	0.142
Anorexia	1.32±0.99	1.09±1.03	0.007
Weight loss	1.65±0.90	1.22±0.94	0.001
Somatic preoccupation	1.62±0.99	1.29±1.00	0.001
Libido loss	1.53±0.77	1.18±0.86	0.001

Scoring, 0, no symptom; 3, severe symptom

According to literature, the fear and uncertainty caused by the notion of cancer; the long duration of the treatment and its uncontrollable side effects; hopelessness, future anxiety, and negative thoughts constitute a risk factor in terms of depression and hopelessness (Smith et al., 2003).

Hope is an important source for patients with breast cancer in order for them to continue and feel confident during the cancer treatment. Family support and social support are important factors in coping with chronic, life-threatening illnesses like cancer, which have negative effects on the patients' general well-being (Oztunc et al. 2013, Yoo et al., 2010). The present study has revealed that the participants' multidimensional perceived social support total scores are high and hopelessness scale scores are low. The highest score in the social support sub-dimensions belongs to family sub-dimension. These findings indicate that the participants are hopeful and have high social support.

The results of this study confirm the previous findings of similar several studies. Kim et al., (2010) suggested a positive linear relationship between social support and psychologically wellbeing. The fear and uncertainty may often cause an increase in the need for social support

Table 4. Mean Score of Socio-Demographic Variables, Hopelessness, and Social Support to the Patients' Descriptive Characteristics

Variables	Beck	Multidimensional	scale of perceived	social support	
	Hopelessness Scale			Social support	
	Total BHS	Family	Friends	A special person	Total MSPSS
<b>Menopausal</b>					
Pre-Menopausal	9.3±2.4 *	23.8±2.9	15.1±7.8	18.6±4.1	57.6±5.8
Postmenopausal	12.8±3.6	24.6±3.1	15.1±4.2	19.2±3.7	58.9±7.1
<b>Ethnicity</b>					
Qatari	12.0±3.5*	23.9±3.0	16.7±4.0	18.4±4.2	59.0±7.0
Non-Qatari (Arab)	9.6±2.4	24.6±3.1	19.1±4.2	19.2±3.7	62.9±7.1
<b>Marital status</b>					
Single	12.4±3.5 *	23.6±2.7	15.5±3.4	19.4±3.9	58.5±6.2
Married	9.3±2.4	24.6±3.1	17.5±4.2	19.2±3.7	61.3±7.1
<b>Parity</b>					
< 3 child	9.5±2.3 *	23.9±3.0	14.9±4.2	18.2±3.8	57.0±7.2
>3 child	11.6±3.4	23.8±2.9	15.1±4.2	19.2±3.7	58.1±7.1
<b>Education status</b>					
High > 12 Years	7.1±2.2 *	24.6±3.1	15.4±2.8*	19.2±3.7	59.2±6.8
Low ≤ 12 Years	11.9±3.3	22.6±3.1	23.9±3.2	22.5±3.7	69.0±7.5
<b>Occupation</b>					
Housewife	8.4±2.4 *	24.6±3.1	19.6±4.2*	18.6±4.0*	62.8±7.1
Working	12.3±3.3	24.1±3.1	21.2±4.2	21.4±3.7	58.9±7.1
<b>Income</b>					
<\$4,000	11.5±3.5	24.6±3.0	16.5±3.8	19.0±3.7	59.1±6.4
\$4,000 – 6,000	10.3±3.3 *	23.8±3.1	17.7±4.0	18.8±3.5	60.4±6.9
>\$6,000	9.5±2.3	23.7±2.8	16.9±4.2	18.4±4.1	59.1±6.7
<b>Consanguinity</b>					
Yes	9.4±2.4 *	23.9±3.1	15.1±4.2	14.8±3.7*	53.8±6.7
No	11.5±3.3	23.8±3.1	17.1±4.2	19.2±3.7	60.1±7.1
<b>Breast feeding</b>					
Yes	6.8±2.1 *	22.8±2.8	14.2±4.4*	18.3±3.8	57.4±6.9
No	11.9±3.4	23.6±2.7	18.5±3.1	19.4±3.9	61.5±6.2
<b>BMI</b>					
< 25 Kg/m <sup>2</sup>	9.6±3.3	24.6±3.0	18.1±7.8	14.2±3.8	57.3±7.0
25-30 Kg/m <sup>2</sup>	9.5±3.6 *	24.1±3.1	17.0±4.2 *	16.8±3.7*	57.8±6.6
>30 Kg/m <sup>2</sup>	12.4±3.6	23.6±3.1	14.1±4.2	18.4±3.7	56.0±7.0
<b>Breast Cancer duration</b>					
1-2 Years	9.3±3.3	24.0±2.8	15.1±4.2	18.6±3.7	57.7±7.1
3-4 Years	10.4±3.6 *	23.9±3.2	12.9±4.0	15.5±3.1 *	52.3±6.5
⇒>5 Years	13.3±3.3	23.6±3.1	14.6±4.2	13.2±3.7	51.4±6.9

\*p, 0.001 Statistically significant

(Landmark et al., 2002; Cam and Gumus, 2006). Social support is an important variable in increasing life-span, emotional well-being as well as decreasing hopelessness in lifelong diseases such as breast cancer (Yoo et al., 2010; Oztunc et al., 2013).

The present study score revealed that married participants were found to be happier than single participants. This confirms the study reported by Denewer et al., (2011) and Rustoen and Wiklund (2000). In fact,

social support can be considered as an important source in decreasing the negative psychological reactions such as hopelessness and depression. Therefore, care for the patients diagnosed with breast cancer should include social support, which is a key factor in increasing hope (Makabe and Nomizu 2007). Additionally, the present study has found that patients who have less than 3 children are significantly more hopeful than patients who have more than 3 children.

Several studies show that receiving education, by increasing social networks such as friendship or work friendship, affects social support positively (Drageset and Lindström, 2005; Sahin et al., 2013; Oztunc et al., 2013). Findings of the study conducted by Rustoen and Wiklund (2000) correspond to the findings of the present study in that they found cancer patients with low education level had relatively higher hopelessness scores. The related literature indicates that educated patients took more responsibilities in being protected from illnesses and in improving their health; hence, decreasing the feeling of hopelessness (Pehlivan et al., 2012).

In the present study a special person score is indicated that the social support provided to cancer patients by their close person or friends yields positive improvements in the course of the disease by affecting patients' general well-being. The present study has found that the participants' hopelessness level decreased with the increase in their social support scores. This is in line with the findings of several authors (Brothers et al. 2009; Arora et al., 2007; Molina et al., 2014) who found a negative relationship between hopelessness and the scores obtained from social support sub-dimensions of friends and family. Findings of the present study also expose that socio-economical levels affects the degree of social support received by breast cancer patients.

Overall, this study which was conducted among breast cancer patients residing in Qatar, revealed that there exists a significant relationship between the participants' hopelessness scores and education, number of parity, social status, social support, education level, occupation and income. The implications of this study includes a recommendation that nurses should help patients to increase their hope- a crucial factor in coping with the illness- and to activate their social support systems, work cooperatively in a multidisciplinary team with an aim in supporting patients psychologically and financially, specifically targeting patients with low levels of education.

The current study suggests that hopelessness of the patients with breast cancer decreased with the increase in their social support. Therefore, activating patient social support systems is of importance in increasing their level of hope. The present study findings revealed the coexistence and association of the socio-demographic, physical, psychological, and cognitive problems faced by patients with breast cancer.

#### Contributors

AB and RS designed and supervised the study and were involved in data collection, statistical analysis the writing of the paper. LD and TA were involved in interpretation of data and writing manuscript. All authors approved the final version of this manuscript.

#### Ethics Committee Approval

Ethics committee approval was received for this study.

#### Informed Consent

Informed consent was obtained for this study.

#### Compliance with Ethical Standard

This article does not contain any studies with human participants or animals performed by any of the authors.

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#### Competing interests

We have no financial interest to declare.

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