Research Article

Assessment of Depression and Social Support among Women with Breast Cancer in Kerbala City, Iraq 2022

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Abstract

Background: Breast cancer is the most frequent malignancy among females worldwide. It is associated with more severe mental and emotional outcomes than other cancers. Depression is one of the psychological consequences of breast cancer. The prevalence of depression is influenced by multiple factors, one of which is the level of social support. This study aimed to assess the degree of depression and social support among breast cancer women, the relationship they have with each other, and their association with socio-demographic characteristics.

Methods: A cross-sectional study involved 250 women with breast cancer who attended the oncology clinics of two hospitals in Kerbala City from January to June 2022. Data were collected by direct interview using a structured questionnaire. Patient Health Questionnaire-9 was used to diagnose and assess the level of depression. A multidimensional scale of perceived social support was applied to assess the patient's social support.

Results: Depression was recorded in 36.8% of patients. About 54% of breast cancer women had high total social support. The result showed that depression decreases significantly with the increase in the total social support in breast cancer women.

Conclusions: Depression is experienced by more than one-third of women with breast cancer. It decreases significantly with the increase in social support for them. Integration of screening programs for depression and psychosocial service provision in routine cancer care is recommended. Coordinating different types of support from the family, healthcare professionals, or community organizations is necessary when they work together. Financially and psychologically support also demands.

Keywords: Breast cancer, depression, social support.
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Introduction

Breast cancer (BC) is the most commonly diagnosed malignancy and the leading cause of death among women worldwide. It represents 30% of newly diagnosed cancer cases in women, and it is a probability that one out of eight women has a chance to develop breast cancer in her lifetime, with a death rate of about 14% among patients [1-2]. BC is the most frequent malignant tumor among women in Iraq and the second major cause of death after cardiovascular disorders, which are responsible for about one-third of all registered female cancers in Iraq [3-4]. Women with BC might suffer from treatment-related side effects, such as surgical trauma, scarring, mastectomy, and lymphedema. According to the medical data, these effects will easily lead to body image distortion, sexual dysfunction with intimacy problems, and low self-esteem [5-6]. Additionally, the diagnosis of BC has a bad impact and unbelievable experience for everyone that can disorganize family life. Other influences of BC include mental disability, financial concerns, family issues, and fear and worrying about the death and recurrence of the disease all contributing to the emergence and aggravation of the severity of psychiatric disorders like depression [7]. Depression is one of the psychological problems that affects physical health outcomes and disturbs social life [8].

According to previous studies, BC patients experienced varying degrees of depressive symptoms. A systematic review and meta-analysis revealed that the prevalence of depression among BC patients globally was 32.2%. The Eastern Mediterranean region was found to have the highest frequency of

2823

depressive symptoms, as well as the middle-income countries, which showed a prevalence twice that in developed countries [9-12]. Various factors account for the likelihood of depressive symptoms in BC patients, including demographics (age, marital status, degree of education, and disease stage), social support, and social isolation [11, 13]. Social support is the interrelationships that protect the individual from stress, reduce illness distress, create a sense of psychological and physical well-being, and profoundly impact on quality of life in patients with chronic disease [14-15]. Research over the previous four decades has increasingly shown the significance of social support in enhancing psychosocial outcomes and health-related quality of life in BC patients. For that, women who received a lot of support had better psychosocial adjustment, low levels of anxiety and depression, and better overall functioning during and after treatment for BC [16]. Thus, this study aimed to assess the level of depression and social support among women with BC.

Materials and Methods

Patients

A cross-sectional study was conducted on women diagnosed with BC who attended the oncology clinics of two public hospitals in Kerbala City in Iraq; Imam Hussein Center for Oncology and Hematology and Imam Al-Hassan Al-Mujtaba Teaching Hospital. This study was carried out during the period from January to October 2022. A total of 250 women with BC were selected by using systemic random sampling among all women who attended to receive treatment sessions with different oncological therapies or follow-up on their medical condition in the oncology clinics, were randomly selected. They all met the inclusion criteria which include, females 18 years old and over who were diagnosed with BC and started treatment at least one month before the start of the study, regardless of their past medical history. Exclusion criteria included patients with a history of psychological disorders before diagnosis of BC, and those with very ill (advanced stages) and mentally retarded patients.

Questionnaire form

A structured questionnaire has been prepared for the study after reviewing previous studies. The questionnaire consisted of three parts. The first part included socio-demographic and clinical data. The second part consisted of the Patient Health Questionnaire (PHQ-9), which is a standard scale used to assess depression and its severity [17]. It consisted of 9 questions that represent the actual criteria upon which the diagnosis of depressive disorders is based. The PHQ-9 score ranges from 0-27. Each of the 9 questions can be scored as 0, 1, 2, and 3. The score 0-4 indicated no depression, mild depression (5-9 score), moderate depression (10-14 score), moderately severe (15-19 score), and severe depression (20-27 score). PHQ-9 score ≥ 10 has a sensitivity of 88% and specificity of 88% for major depression. Scoring was performed by specialists who trained the researcher in a psychiatric clinic on how to diagnose and evaluate depression. PHQ-9 score was obtained by adding the score for each question (total points). The third part included the Multidimensional Scale of Perceived Social Support (MSPSS), which assessed the patients' social support. It is one of the most reliable and valid scales used to rate social support [18]. The scale which evaluated the adequacy of social support was received from three different sources (family, friends, and significant other) consists of 12 items. Each of the three groups had 4 items: the family (3rd- 4th- 8th- and 11th items), the friends (6th-7th- 9th- and 12th items), and a significant other (1st- 2nd- 5th-and 10th items). The 12-item scale was originally rated on a 7-point Likert response ranked as 1 very strongly disagrees, 2 strongly disagrees, 3 mildly disagree, 4 neutral, 5 mildly agree, 6 strongly agree, and 7 very strongly disagree. These scales appeared too many and difficult for especially illiterate and low educated patients. So, the researcher adopted a 5-point Likert scale that ranged from 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree [19-20]. The scores were calculated by summing the scores of each item, with higher scores indicating a higher level of social support.

Ethical approval

The study protocol was approved by the ethical committee at the University of Kerbala/ College of Medicine. A written agreement was obtained from the Kerbala Health directorate. Verbal consents were obtained from the participants before interviewing after explaining the study's objectives. The questionnaire was conducted for each patient in a private environment to ensure their privacy. Patients were told that the information provided in this study would be used for research purposes only the data would be treated confidentially with full protection of their privacy, and it is anonymous.

Statistical analysis

The current study's data was entered and analyzed through the Statistical Package for the Social Sciences (SPSS version 24). Descriptive statistics were presented as frequencies and percentages or mean

2824

and standard deviation (SD) in appropriate tables and graphs. The chi-square test or Fisher's exact test was used where appropriate to find out the possible association between the related variables of the current study. The association is considered statistically significant when the p-value is < 0.05.

Results

The total study participants were 250 women with a mean age of 50.7±9.7 years, ranging from 28-70 years. Most participants were housewives (75.6%) and 10% of them had illiteracy. Low family income was recorded in more than three-quarters of them (35.2%). Less than half of the women were premenopausal (Table 1).

Table 1. Socio-demographic and characteristics of study participants.

Characteristics		Total No. (n=250)(%)
Age (year)	mean ±SD*	50.7±9.7
	Range	28-70
Age groups (year)	< 35	12 (4.8)
	35- 44	59 (23.6)
	45-54	84 (33.6)
	55-64	79 (31.6)
	≥65	16 (6.4)
Residence	Urban	158 (63.2)
	Rural	92 (36.8)
Marital status	Married	181 (72.4)
	Widow	36 (14.4)
	Single	17 (6.8)
	Divorced	16 (6.4)
Education	Illiterate	25 (10)
	Read and write/Primary school	116 (46.4)
	Secondary school	80 (32)
	College and higher	29 (11.6)
Number of children	No children	38 (15.2)
	1-3	77 (30.8)
	4-6	110 (44)
	>6	25 (10)
Occupation	Housewife	189 (75.6)
	Governmental employee	34 (13.6)
	Retired	19 (7.6)
	Business owner	8 (3.2)
Living status	With family	207 (82.8)
	With relatives	35 (14)
	Alone	8 (3.2)
Income	Low	88 (35.2)
	Middle	144 (57.6)
	High	18 (7.2)
Menstrual status	Menopause	137 (54.8)
	Premenopause	113 (45.2)

Less than half of the participants reported that the disease duration (from the time of diagnosis) was <

1 year (40.4%). The positive history of BC comprised only 19.6%. The majority of women were with a history of surgical treatment (86%), while 54.8% of them received both chemotherapy and radiotherapy (Table 2).

Table 2. Breast cancer related variables of the study participants.

Characteristics		Total No. (n=250)(%)
Time of diagnosis	< one year	101 (40.4)
	≥ one year	149 (59.6)
History of breast cancer in first degree relatives	Yes	49 (19.6)
	No	201 (80.4)
Surgical treatment	Mastectomy	142 (56.8)
	Lumpectomy	73 (29.2)
	No surgery	35 (14)
Adjuvant treatment	Chemotherapy+ Radiotherapy	137 (54.8)
	Chemotherapy	100 (40)
	Radiotherapy	13 (5.2)
Hormonal treatment	Yes	140 (56)
	No	110 4)

Based on the PHQ-9 and according to the responses of the BC patients, the present study concluded that 36.8% of them had depression (mild and moderate depression represented about three-quarters whereas severe depression accounted for < 4% with a mean score of 4.44±4.01 ranging from 0-20 score (Figure 1).
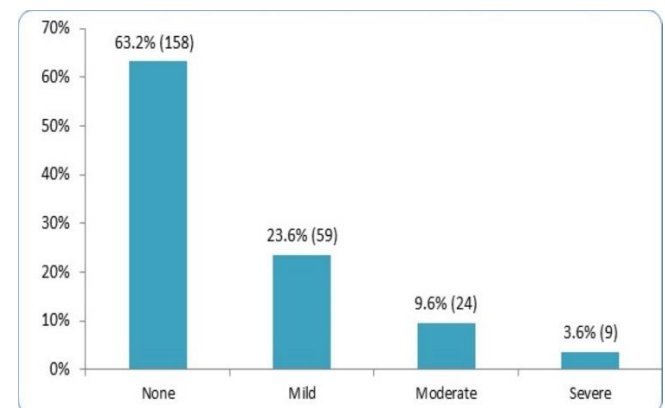

Figure 1. Classification of the level of depression in women with breast cancer according to Patient Health Questionnaire.

Based on the MSPSS, 54% of the BC women had high Total Social Support, whereas 30% had moderate and 16% had low Total Social Support, with a mean score of 41.45±10.69 ranging from 12-60 Figure 2).
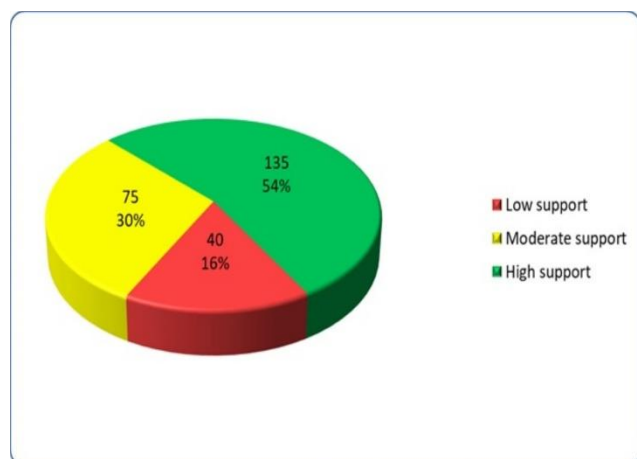
Figure 2. Frequencies and proportions of Total Social Support.

Association between depression and socio-demographics characteristics

The analysis of the current data showed that the severity of depression significantly decreased with increasing age. Also, moderate-severe depression was significantly higher in divorced and single women and women living in urban areas. There was a significant statistical difference between the severity of depression and the number of children that women had (p=0.045). Women with no children had a significantly higher proportion of moderate-severe depression than women with children. The result also showed that women living with family had significantly lesser depression severity than those living alone or with relatives (p=0.02). A significant statistical difference between depression severity and monthly income was found (p<0.001), with a higher proportion of moderate-severe depression in women with lower monthly income (Table 3).

Association between total social support and socio-demographics characteristics

The current data analysis showed that married women had significantly higher social support than either widows, single or divorced (p=0.004). In addition, there was a significant statistical difference between the level of social support and the number of children that women had (p=0.005), with a higher level of support in women with children. There was significantly higher social support in women with secondary school and higher education than those of illiterate and primary school (p=0.043). Also, employed and retired women had significantly higher support from housewives and business owners (p=0.013). The result showed a significantly higher level of social support in women living with family than that living alone or with relatives (p<0.001). There was a significant statistical difference between the level of social support and monthly income (p<0.001), with a

higher level of support among women with high monthly income (Table 4). A significant statistical difference between the level of social support and the time of diagnosis of the disease was found (p=0.022). Women diagnosed with less than one year had a higher level of support than women with a time of diagnosis of one year or more. Also, there was a significantly higher level of social support in women with no surgery than those who had undergone lumpectomy or mastectomy (p=0.042) (Table 5).

Association between depression severity and total social support

The analysis of the results of this study revealed that there was a significant statistical association between depression severity and level of total social support (Table 6).

Discussion

The results of the current study demonstrated that the prevalence of depression was 36.8%. Similarly, a study performed in Greece found that approximately 38% of BC patients were diagnosed with depression [11]. Also, a study in Egypt showed that nearly half of BC women reported depression (46.87%) [21]. While other previous studies in Iraq and Egypt reported a high prevalence (60.4% and 68.7%, respectively) of BC women having depression [22-23]. In contrast, the result of this study showed a higher prevalence than found in Malaysia (22%), Iran (26.7%), India (28%), and Morocco (26.9%)[24-27]. The discrepancy in prevalence between these studies might be due to differences in the diagnostic tools used to assess depression in these participants, and sociodemographic factors like age, marital status, length of cancer treatment, type of treatment, and the number of treatment sessions. Additionally, locational and cultural varieties may impact a patient's mental and psychological health.

Evaluation of the severity of depression in the present study demonstrated that most cases had mild depression, which is consistent with the study in Ethiopia [28]. On the contrary, a study done in Saudi Arabia reported that 25.3% of the participants had very severe depression, followed by mild depression in 24.1% of cases. Also, a study in Qatar observed that 27.7% of their participants had moderate depression, while 19.5% of them had severe depression [29-30]. This variation might be probably due to differences in the study population and the diagnostic tools used to assess the severity of depression between the studies.

The HAM-D17 scale and Beck Depression Scale were used in the study of Saudi Arabia and Qatar, respectively.

In terms of the factors associated with the risk of depression, this study illustrated that participants' age was significantly associated with the severity of depression, which decreased as age increased.

Table 3. Association between depression severity and socio-demographic characteristics.

Variable		Depression			P-value
		None	Mild	Moderate-severe	
Age groups (year)	< 45	35	22	14	<0.001*
		49.3%	31%	19.7%	
	45-54	54	26	4	
		64.2%	31%	4.8%	
	≥55	69	11	15	
		72.6%	11.6%	15.8%	
Residence	Urban	97	32	29	0.004*
		61.4%	20.3%	18.4%	
	Rural	61	27	4	
		66.4%	29.3%	4.3%	
Marital status	Married	118	42	21	0.004*
		65.2%	23.2%	11.6%	
	Widow	23	9	4	
		63.9%	25%	11.1%	
	Single	10	2	5	
		58.8%	11.8%	29.4%	
	Divorced	7	6	3	
		43.7%	37.5%	18.8%	
Number of children	No children	16	15	7	0.045*
		42.1%	39.5%	18.4%	
	1-3	50	16	11	
		64.9%	20.8%	14.3%	
	4-6	71	26	13	
		64.6%	23.6%	11.8%	
	> 6	21	2	2	
		84%	8%	8%	
Educational level	Illiterate	18	3	4	0.081
		72%	12%	16%	
	Primary/ read and write	62	37	17	
		53.4%	31.9%	14.7%	
	Secondary	57	13	10	
		71.3%	16.3%	12.5%	
	College and higher	21	6	2	
		72.4%	20.7%	6.9%	
		139	43	25	
		67.1%	20.8%	12.1%	
		17	11	7	
		48.6%	31.4%	20%	
		2	5	1	
		25%	62.5%	12.5%	
		40	32	16	
		45.5%	36.4%	18.2%	
		118	27	17	
		72.8%	16.7%	10.5%	
		93	28	16	
		67.9%	20.4%	11.7%	
		65	31	17	
		57.5%	27.5%	15%	
		69	23	9	
		68.3%	22.8%	8.9%	
		89	36	24	
		59.7%	24.2%	16.1%	

*Chi-square test was used with a significant P-value of less than 0.05.

Such results were similar to the results of a study in Egypt and Ethiopia [28, 31] and in contrast to a study performed in the USA and another study conducted in Lithuania [32-33]. The possible explanation is that younger women were less likely to get married or have the ideal number of children. They are also more commonly to refuse mastectomy and may suffer from fear of death at a young age, which makes them more vulnerable to psychological distress and depression. Also, married women had a significantly lower frequency of moderate-severe depression than single women.

Table 4. Association between total social support and socio-demographic characteristics.

Variable		Total Social Support			P-value
		Low support	Moderate support	High support	
Age groups (year)	< 44	16	25	30	0.154
		22.5%	35.2%	42.3%	
	45-54	15	23	46	
		17.9%	27.4%	54.8%	
	55-64	7	24	48	
		8.9%	30.4%	60.8%	
	≥ 65	2	3	11	
		12.5%	18.8%	68.8%	
Marital status	Married	22	49	110	0.004*
		12.2%	27.1%	60.8%	
	Widow	7	13	16	
		19.4%	36.1%	44.4%	
	Single	4	8	5	
		23.5%	47.1%	29.4%	
	Divorced	7	5	4	
		43.8%	31.3%	25.0%	
Number of children	No children	9	20	9	0.005*
		23.7%	52.6%	23.7%	
	1-3	13	19	45	
		16.9%	24.7%	58.4%	
	4-6	16	30	64	
		14.5%	27.3%	58.2%	
	> 6	2	6	17	
		8.0%	24.0%	68.0%	
Educational level	Illiterate	5	11	9	0.043*
		20.0%	44.0%	36.0%	
	Primary/ read and write	24	36	56	
		20.7%	31.0%	48.3%	
	Secondary	10	18	52	
		12.5%	22.5%	65.0%	
	College and higher	1	10	18	
		3.4%	34.5%	62.1%	
Occupational status	Housewife	34	59	96	0.013*
		18.0%	31.2%	50.8%	
	Employee	1	10	23	
		2.9%	29.4%	67.6%	
	Retired	1	4	14	
		5.3%	21.1%	73.7%	
	Business owner	4	2	2	
		50.0%	25.0%	25.0%	
Living Status	With family	25	56	126	<0.001*
		12.1%	27.1%	60.9%	
	With relative	8	18	9	
		22.9%	51.4%	25.7%	
	Alone	7	1	0	
		87.5%	12.5%	0.0%	
Monthly income	Low	26	34	28	<0.001*
		29.5%	38.6%	31.8%	
	Middle-High	14	41	107	
		8.6%	25.4%	66%	

Table 5. Association between total social support and clinical characteristics.

Variables		Total Social Support			P-value
		Low support	Moderate support	High support	
Menstrual state	Menopause	16	43	78	0.122
		11.7%	31.4%	56.9%	
	Premenopause	24	32	57	
		21.2%	28.3%	50.4%	
Time of diagnosis	< one year	9	29	63	0.022*
		8.9%	28.7%	62.4%	
	>= one year	31	46	72	
		20.8%	30.9%	48.3%	
History of breast cancer in first degree relatives	Yes	12	13	24	0.195
		24.5%	26.5%	49.0%	
	No	28	62	111	
		13.9%	30.8%	55.2%	
Surgical Rx	Mastectomy	24	52	66	0.042*
		16.9%	36.6%	46.5%	
	Lumpectomy	13	15	45	
		17.8%	20.5%	61.6%	
	No surgery	3	8	24	
		8.6%	22.9%	68.6%	
Adjuvant Rx	Chemo +Radio	26	44	67	0.120
		19.0%	32.1%	48.9%	
	Chemo Rx	13	30	57	
		13.0%	30.0%	57.0%	
	Radio Rx	1	1	11	
		7.7%	7.7%	84.6%	
Hormonal Rx	Yes	25	38	77	0.447
		17.9%	27.1%	55.0%	
	No	15	37	58	
		13.6%	33.6%	52.7%	
*Chi-square test was used with a significant P-value of less than 0.05.					

Table 6. Association between depression severity and total social support among women with BC.

Variable		Depression			P-value
		None	Mild	Moderate/severe	
Total social support	Low support	7	15	18	<0.001*
		4.4%	25.4%	54.6%	
	Moderate support	40	24	11	
		25.3%	40.7%	33.3%	
	High support	111	20	4	
		70.3%	33.9%	12.1%	

This finding was consistent with the results of Tsaras *et al.* (2018) and a study conducted in Malaysia [11, 24]. However, the results of the present study disagreed with a study in Iran which found no relationship between marital status and depression in their patients [20]. Factors related to having a partner from whom receive support and with whom share emotions and thoughts, discussing, deciding, and facing the visits and the treatments can be a resource of social support, which is associated with lower levels of depression [34].

This study also found that women with no children had a significantly higher proportion of moderate-severe depression than women who had children. This was in line with the result obtained from a study in Iran [35], but disagrees with the finding from a study in Saudi Arabia [29]. The possible explanation is that women with no children may be relatively worried about loss of fertility and premature menopause [36]. Also, women with no or fewer children might receive few supports than women who have more children, which might have a negative effect on their mental health. The children might be an important source of support for highly stressed women.

The current study illustrated a significant association between depression severity and the monthly income of patients. Those with low income had a high proportion of moderate-severe depression. This was in line with a study done in India [27]. The study in Malaysia supported that going to the

hospital for treatment and following up need a financial budget as well as relatives or friends who escort the patient for treatment need an additional budget [24]. Moreover, the result of the present study reported that women who lived with family had lesser severity of depression than those living alone. This finding was consistent with a study in China [9], but disagrees with the finding obtained by Puigpinós-Riera *et al.* (2018) [13]. The possible explanation might be that women who live with family can share their problems and get more social support than women who live alone. Numerous studies have found that a supportive family environment for women with BC positively correlates with health outcomes [4]. An essential aspect of the treatment of cancer patients is social support. According to the result of this study, more than half of BC women had high social support, this was in concordance with the result of a study done by Thompson *et al.* (2013)[37], and inconsistent with a study in Sulaimani City, Iraq (2022)[2]. This variation might be due to differences in the study population and sample size between the studies.

This study revealed a significant statistical association between depression severity and level of total social support. Low social support was found among women with moderate-severe depression. This finding Concorde with the study by Wondimagegnehu *et al.* (2019)[28]. Also, other research discovered that BC patients with depression received less social support [38]. This study showed that married women had significantly higher social support than single. Such finding a line with the result observed in Greece [39]. The patients who are single, separated, or widowed report a low level of perceived social support because they may experience feelings of loneliness and isolation even if the rest of their environment is particularly supportive towards them. In addition, the relationship between spouses varies from that of family members, doctors, and nurses with the patient. The presence of a spouse as someone who helps to increase an individual's sense of solidarity with others can impact the performance and health of the individual and the quality of perceived social support [40].

The results of the current study showed a higher level of social support among women with higher education and high monthly income. This was consistent with the study results in Turkey [41]. Moreover, the current study reported that women with no surgery had significantly higher levels of social support than those who had undergone lumpectomy or mastectomy. This result agreed with a

study by Thompson *et al.* (2013)[37]. Also, the present study reported that the working status of women with BC has a role in perceived social support. It was found that employed females had a significantly higher level of support than unemployed, in contrast to a study by Goula *et al.* (2020)[39]. A possible explanation is that working women might receive social support from their environment as the occupation is a way of relieving their feelings. In addition, a job usually gives women a sense of power and independence, as well as a feeling of being able to manage a difficult situation, in addition to the economic aspect and their ability to cover treatment expenses. Furthermore, the results indicated that a high level of social support was reported in women who had children, consistent with a study in Isfahan, Iran [42]. Also, women who lived with family had a higher level of social support than those living alone. This was consistent with a study by Sørensen *et al.* (2020)[43]. Having someone physically present and available at all times is described as important for the experience of social support [44]. Finally, the study results showed that women diagnosed in less than one year had a higher level of support than those with a time of diagnosis of one year or more. This finding was in line with the result observed by Costa-Requena *et al.* (2015)[45], while Oztunc *et al.* (2013) reported a non-significant difference between time from diagnosis and social support [46].

Conclusions

More than one-third of women with BC had depression. It decreases significantly with the increase in social support for them. Integration of screening programs for depression and psychosocial service provision in routine cancer care is recommended.

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