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ASSESSMENT OF DEPRESSION AND SOCIAL SUPPORT AMONG WOMEN WITH BREAST CANCER IN KARBALA CITY 2022

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Abstract

Introduction: Breast cancer is the most frequent malignancy among females worldwide, and is associated with severe mental and emotional outcomes than other cancer. One of the psychological consequences of breast cancer is depression. The prevalence of depression is influenced by multiple factors, one of which was the level of social support. Women with high levels of support experience better psychosocial adjustment, and less depression during and after treatment for breast cancer.

Objectives: Assessment the level of depression and social support among breast cancer women, and determine the association of depression with social support and socio-demographic characteristics.

Patients and Method: A cross-sectional study was done involving 250 women with breast cancer who attended the oncology clinics of Imam Hussein and Imam Al-Hassan Al-Mujtaba teaching hospital in Karbala, Iraq from 1st March to 30th June. Data were collected by direct interview using a structured questionnaire, PHQ-9 to assess the level of depression, and MSPSS to assess the patient's social support and were analyzed using SPSS version 24, and p value considered statistically significant when it is <0.05.

Results: The prevalence of depression was (36.8%). About (54%) of breast cancer women had high total social support. The level of depression and social support were significantly associated with the marital status, the number of children, living status, and monthly income P<0.05. Also, the result showed that the level of depression decreases significantly with the increase in the level of social support in breast cancer women.

Conclusions: There was a high prevalence of depression among breast cancer women. 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, and a support system for coordinating various types of support from the family, their healthcare professionals and community organizations in a way of teamwork to activate their social support systems, and working collaboratively as a multidisciplinary team to support patients financially and psychologically.

Keywords: Breast cancer, depression, social support.

Introduction

Breast cancer (BC) is the most commonly diagnosed malignancy and the leading cause of death among women worldwide. It is responsible for 30% of newly diagnosed cancer cases in women, and there is a probability that one in eight women will develop breast cancer in her lifetime, while

14% of cancer related deaths are attributed to it [1, 2]. In Iraq, BC is the most frequent malignant tumor among females and the second major cause of mortality among Iraqi females, following cardiovascular disorders, which accounts for about one-third of the registered female cancers [3, 4]. Facing breast cancer represented massive stress for patient that had to handle with new and challenging problems and decisions. [5]. Women with breast cancer 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/intimacy problems, and low self-esteem [6,7]. In addition, a breast cancer diagnosis is very bad and unbelievable experience for every one that can disorganize family life; furthermore, mental disability, financial concerns, family issues, and fearing and worrying about the death and recurrence of the disease all contribute to the emergence and aggravation of severity of psychiatric disorders like depression [8]. Depression is one of the psychological problems that affect physical health outcomes and disturbs social life. Unfortunately, major depression is widespread in breast cancer survivors and mostly untreated once the survivors stay out of the hospital; this leads to social isolation and a lack of social support. In addition, it leads to more worries for the survivors about their children, metastasis, and recurrence, which increases the level of depression dramatically [9]. The prevalence rates of depression in people with breast cancer range between 25 and 66.6% [10-12]. Other studies revealed that breast cancer patients can experience depression from the diagnosis to the terminal phase of illness, which increases physical and psychological disturbances, thus negatively affecting the quality of life [13, 14]. Various factors accounting for the likelihood of depressive symptoms in breast cancer patients, including demographics (age, marital status, degree of education, and disease stage), social support, and social isolation [15, 16]. Social support is the interrelationships that protect the individual from stress, reduce illness distress and create a sense of psychological and physical well-being and has a profound impact on quality of life in patients who have chronic disease [17]. Researches over the previous four decades has increasingly shown the significance of social support in enhancing psychosocial outcomes and health-related quality of life in breast cancer patients. Thus, women who receive a lot of support had better psychosocial adjustment, low level of anxiety and depression, and better overall functioning during and after treatment for breast cancer [18]. Lack of social support has been demonstrated to have an important role in the development of depression and anxiety in breast cancer women. A study conducted on women with primary breast cancer shown that decrease levels of social support independently predicted depression or anxiety in a year after diagnosis. Another study discovered that social support in breast cancer survivors modulated the connection between depressive symptoms and quality of life. In other words, the quality of life of breast cancer survivors who admitted having little or no social support were more negatively impacted as a result to depression symptoms [19]. Therefore, this study was conducted to assess the level of depression and social support among women with breast cancer.

Patients and Method

Study design, setting, and time: a cross sectional study was conducted between 1st of January and 30th of June, 2022; In Iraq, Karbala city (located 100 Km south-east of the capital, Baghdad and

has a population of about 1250806 according to the Annual Statistical Report of Ministry of Health/ Environment 2019 [20]) on a women diagnosed with breast cancer who attended the oncological center in 2 public hospitals in Karbala (Imam Hussein Center for Oncology and Hematology and oncology center at Imam Al-Hassan Al-Mujtaba Teaching Hospital). In addition to patients from Karbala residents, these two centers also receive patients from the Middle Euphrates region in Iraq who have been referred to them for treatment of solid and hematological malignancy.

Sampling method: A purposive sample of 250 women with breast cancer who came to receive treatment sessions with different oncological therapies or follow up on their medical condition in these two centers and met the inclusion criteria. Inclusion criteria were the following: females 18 years old and over who were diagnosed with breast cancer and started treatment at least one month before the start of the study to up to five years, and exclusion criteria included: patients with history of psychological disorders before diagnosis of breast cancer, and very ill and mentally retarded patients. Study protocol was approved by the ethical committee in Karbala University/ Collage of medicine and Verbal consents were obtained from the participants prior to interviewing, after explaining the objectives of the study. The questionnaire was conducted to each patient in a private environment to ensure their privacy and patients were told that the information provided in this study will be used for research purposes only and the data will be treated confidentially with full protection of their privacy; and it is anonymous.

Questionnaire form: A structured questionnaire has been prepared for the purpose of the study after reviewing previous studies. The questionnaire consisted of three parts; the first part: it included socio-demographic data like age, residence, marital status, number of children, educational level, occupation, family status, and income; and clinical data which involve; menstrual status, time passed since diagnosis, family history of breast cancer, and treatment options (surgical, adjuvant, and hormonal). It was written in English and translated into Arabic by the researcher and reviewed by the supervisors. The second part: Patient Health Questionnaire (PHQ-9) is a standard scale which has been used to assess depression and its severity [21]. It consists of 9 questions that represent the actual criteria upon which the diagnosis of depressive disorders is based. The PHQ-9 score range from 0-27, each of the 9 questions can be scored as 0 (not at all), 1 (several days), 2 (more than half the days), and 3 (nearly every day). The score from 0-4 indicated no depression, score 5- 9 mild depression, score 10-14 moderate depression, score 15-19 moderately severe, score 20-27 severe depression. PHQ-9 score ≥10 has sensitivity of 88% and specificity of 88% for major depression. PHQ-9 score obtained by adding score for each question (total points). The third part: Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess the patient's social support. It is one of the most reliable and valid scales that used to rate social support [22]. The scale which evaluates the adequacy of social support received from three different sources (family, friends, and significant other or special person) consist of 12-items, each of the three groups has 4 items are the family (3rd- 4th- 8th- and 11th items), the friends (6th- 7th- 9th- and 12th items), and a significant other or special-person (1st- 2nd- 5th-and 10th items). The 12-items scale has been originally rated on 7-point Likert

response ranked as 1= of very strongly disagree, 2= strongly disagree, 3= mildly disagree, 4= neutral, 5= mildly agree, 6= strongly agree, and 7= very strongly disagree. These appeared too many and would be difficult for especially illiterate and low educate 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 [11]. The scores are calculated by summing the scores of each item, with higher scores indicating higher level of social support.

Statistical analysis:

The data of the current study 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 and standard deviation in appropriate tables and graphs. Chi square test or Fisher's exact test were used where is appropriate to find out the possible association between the related variables of the current study. The association considered statistically significant when p value equal or less than 0.05.

Results:

1. Socio-demographics and related characteristics: The total study participants were 250 women with a mean age of 50.7±9.7 years ranged from 28-70 years. The majority of the participants were housewives (75.6%) and illiteracy contributed to 10% of them. Low family income recorded in more than one third of the participants (35.2%). Less than one-half of the women were premenopausal (as illustrated in table-1 below).

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

Characteristics		Total=250 No. (%)
Age (*in years*)	mean ±*SD*	50.7±9.7
	Range	28- 70
Age groups *(years)*	< 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)
	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	< 300,000	88 (35.2)

	300,000 - 1000,000	144 (57.6)
	> 1000,000	18 (7.2)
Menstrual status	Menopause	137 (54.8)
	Premenopause	113 5.2)

2. Breast cancer management related variables:

Less than half of the participants reported that the duration of the disease (from the time of diagnosis) was less than one year (40.4%). Positive history of breast cancer comprised only 19.6%. The majority of women with a history of surgical treatment (86%), while (54.8%) of them received both chemotherapy and radiotherapy (as illustrated in table-2 below).

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

Characteristics		Total=250 No. (%)
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)

3. The Patient Health Questionnaire (PHQ-9): according to the responses of the breast cancer patients, the present study concluded that 36.8% of women with breast cancer had depression (mild and moderate depression represented about one third whereas severe depression accounted to less than 4%) as shown in figure-1 below:

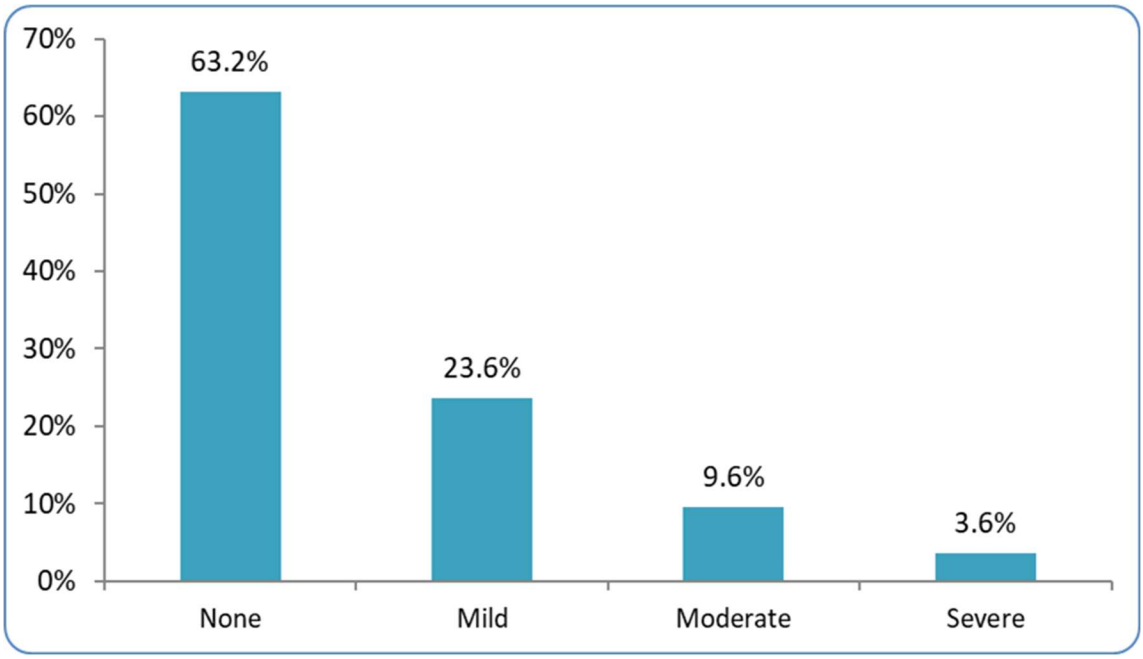

Figure-1: Classification of the level of depression in women with breast cancer according to Patient Health Questionnaire.

4. The Multidimensional Scale of Perceived Social Support (MSPSS)

The present study concluded that 54% of the breast cancer women had high Total Social Support, whereas 30% had moderate and 16% had low Total Social Support (figure 2).

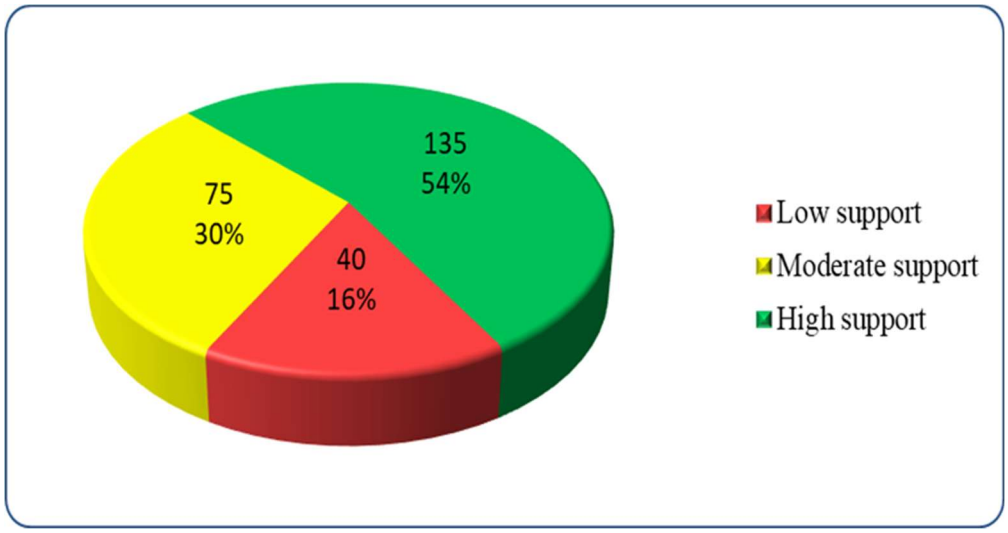

Figure-2: Frequencies and proportions of Total Social Support.

5. The association between depression and social support: The analysis of results of this study revealed that there was significant statistical association between depression severity and level of the total social support, as illustrated in table 3 below.

Table-3: association between depression and total social support among women with breast cancer.

Variable		Depression			P value
		None	Mild	Moderate/severe	
Total social support	Low support	7	15	18	0.0001*
		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%	

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

6. The association between depression and socio-demographics Characteristics:

The analysis of the current data showed that the severity of depression significantly decreased with increasing age ($p<0.05$). Also, moderate-severe depression was significantly higher in divorced and single women and women living in urban areas ($p < 0.05$). There was a significant statistical difference between severity of depression and the number of children that the women had ($p<0.05$), 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 that living alone or with relatives ($p<0.05$). A significant statistical difference between depression severity and monthly income was found ($p<0.05$), with a higher proportion of moderate-severe depression in women lower monthly income as shown in table-4 below. Table-4: Association between Depression severity and socio-demographic characteristics.

Variable		Depression			P value
		None	Mild	Moderate-severe	
Age groups	< 45	35	22	14	0.0001*
		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%	
Living Status	With family	139	43	25	0.02*
		67.1%	20.8%	12.1%	
	With relative	17	11	7	
		48.6%	31.4%	20%	
	Alone	2	5	1	
		25%	62.5%	12.5%	
Monthly income	< 300,000	40	32	16	0.0001*
		45.5%	36.4%	18.2%	
	≥300,000	118	27	17	
		72.8%	16.7%	10.5%	

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

Discussion and conclusions:

BC is considered to be the most common cancer, especially among women with an increasing trend to become a big burden on the health status of both developed and developing

countries [23]. Although there are improvements in early detection and medical treatments, a diagnosis of breast cancer continues to enhance greater distress in females than any other medical diagnosis, regardless of the prognosis [24]. Depression is one of the most common mental disorders among patients with breast cancer [25]. The results of the current study demonstrated that the prevalence of depression was 36.8%. Similarly, Tsaras K et al, performed a descriptive, cross-sectional study in Greece among 170 randomly selected breast cancer patients and found that Approximately 38% of them were diagnosed with depression [16]. Also, a cross-sectional observational study of 96 women with breast cancer in Egypt showed that nearly half of them reported depression (46.87%) [26]. While another previous study in Iraq and Egypt reported a high prevalence of about (60.4% and 68.7% respectively) of women having depression [27,24]. But the result was higher than the prevalence found in Malaysia (22%), Iran (26.7%), Qatar (27.7%), India (28%), and Morocco (26.9%) [28-32]. The discrepancy in prevalence between these studies might be due to differences in the diagnostic tools used to assess depression in these participants, as well as sociodemographic factors like age, marital status, the length of cancer treatment, the type of treatment, and the number of sessions of treatment. Additionally, locational and cultural varieties may have an impact on a patient's mental and psychological health. When severity of depression was evaluated, the present study demonstrated that most cases had mild level of depression. This was consistent with the results obtained from a study in Ethiopia which reported that mild depression was higher about (35%) of total patients with breast cancer had mild depression [33]. Whereas a study done in Saudi Arabia reported that 25.3% of the participants had the highest level of depression (very severe depression) and followed by mild depression which was detected in 24.1% of cases [34]. 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 two studies, as the Hamilton Anxiety Rating Scale (HAM-D17) was used in the study of Saudi Arabia, while in this study we used PHQ-9. In term of the factors associated with the risk of depression. The current study illustrated that participants' age was significantly associated with the severity of depression. The severity of depression decreased as age increased. This finding was in concordance with result obtained from a study of 204 women in Egypt who were diagnosed with breast cancer, showed that there was a statistically significant association between the age of the patients and the presence of depression ($p < 0.001$); depressed patients were more likely to be younger than non-depressed patients [35]. Also, Wondimagegnehu A et al, stated in their study that the age was associated significantly with depression; with increased the age the risk of developed depression declined by 60–80% [33]. The Possible explanation for this is that younger age women were less likely of getting married or having 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 make them more vulnerable to psychological distress and depression. On contrast, a study performed among African American population in the USA showed that older age increased the risk of developing depression compared to a younger age in breast cancer women [36]. Another study conducted in Lithuania also observed that patients with breast cancer over age 55 years had a greater risk of suffering from depression about 2.25 times from those who were younger [37]. For the impact of psychiatric morbidity due

to marital status. The result of the present study revealed that married women showed a significantly lower frequency of moderate-severe depression than single women. This finding was consistent with the results observed by Tsaras K et al, who stated that married patients reported fewer symptoms of depression [16]. Also, a cross-sectional study conducted among 205 breast cancer patients in Malaysia by Hassan MR et al, stated that single women showed a much higher prevalence of depression rather than married women [28]. But our result disagreed with a study conducted among 120 women with breast cancer in Iran by Okati-Aliabad H et al, which found no relationship between marital status and depression in their patients [11]. 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, as it is known that social support is associated with lower levels of depression [38]. This study also found that women with no children had a significantly higher proportion of moderate-severe depression than women with children. This finding was in line with the result obtained from a descriptive study done among 120 women with breast cancer in Iran which revealed that those with fewer children were more likely to developed higher levels of depression [39]. But this result disagrees with the finding from a study in Saudi Arabia, which reported that the severity of depression was significantly associated with women who have 3 children or more [34]. the possible explanation is that women with no children may be relatively worried about loss of fertility and premature menopause [40]. Also, women with no or fewer children might be receiving few support than women have more children, which might have a negative effect on their mental health, as children might be an important source of support for highly stressed women. Furthermore, the result of the present study showed that women who lived in urban areas had a significantly high level of moderate-severe depression. The relationship between depression and area of residence in patients with breast cancer and cancer patients in general is a contradict finding in the previous literature as there are many studies supporting this relation and many studies which opposes it [41]. In contrast, a study performed in an oncology public hospital in Greece revealed that women with breast cancer who lived in rural areas were more likely to develop depressive symptoms [16]. This result can be attributed to the fact that living in urban areas may be accompanied by high stressful events and costly, so diagnosis of BC may add an additional burden to them. Economic status plays an important role in terms of cancer treatments. The current study illustrated that there was 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 finding was in line with Srivastava V et al, a study done among 200 patients with breast cancer in the Department of General Surgery, India revealed that monthly income is significantly associated with depression and those who earned less income are more likely to have depression [31]. Low economic status and high treatment costs were directly associated with depression percentage. Going to the hospital for treatment and follow up needs financial budget; besides that, relatives or friends who escort the patient for treatment need additional budget. This is supported by a study in Malaysia done by Hassan MR et al., which found that low-income women are characterized by the prevalence of depression due to the unlikely of receiving any treatments [28]. Moreover, the result of the present study reported that women who

live with family had lesser severity of depression than those living alone. This finding was consistent with a study in china among 114 breast cancer patients to evaluate their psychological status showed that living alone was independently correlated with a higher level of depression [42]. But the result disagrees with the finding obtained by Puigpinós-Riera R et al, who stated that living alone was not significantly associated with depression [15]. The possible explanation for this might be that women who lived with family can share their problems and get more social support from them than women who live alone. Numerous studies have found that a sup¬portive family environment for women with breast cancer is positively associated with health outcomes [4]. An essential aspect of the treatment of cancer patients is social support. It fosters social contact that begins with communication, develops an empathic bond, and eventually results in a welfare circle for the patient. Possibly, interpersonal relationships give people the ability to cope with the disease and promote well-being. [43]. According to the result of our study, more than half of breast cancer women had high social support. This was in concordance with the result observed in the study by Thompson T et al, who found high social support among the participants [44]. In contrast, a cross-sectional study in Sulaimani City, Iraq to assess perceived social support in a sample of females with breast cancer revealed that about half of the participants (47.4%) received it moderately and one-third of them had high social support [2]. This variation might be due to differences in the study population and sample size between the studies. Furthermore, the current study revealed a significant statistical association between depression severity and level of the total social support. low social-support was found among women with moderate-severe depression. This finding was in concordance with what was observed in the study done by Wondimagegnehu A et al, which revealed that there is a significant association between social support and depression [33]. Also, in other research, it was discovered that breast cancer patients with depression received less social support [45]; additionally, family support was found to be negatively correlated with depression among patients with breast cancer [46]. This study had some limitations: First, due to the cross-sectional nature of the study, we couldn't determine the causal relationship between risk factors and depression. Secondly, the study included breast cancer patients who visited health facilities only so the burden of depression cannot be generalized for all patients with breast cancer since we didn't include those who stayed at home. Conclusions: Majority of patients with breast cancer were married, housewives, and had children, the prevalence of depression among patients with breast cancer was high and the total social support received from family, friends, and significant others was high among breast cancer women. Family was identified as a greater source of social support. The level of depression in women with breast cancer decreases significantly with the increase in their social support. Married women, having children, living with family, and good monthly income was identified as factors that were associated with the level of depression and social support.

Recommendations: Integration of screening programs for depression and psychosocial service provision in routine care for cancer, and implementation of training courses and counseling services for women with breast cancer in order to improve their mental health status. Also a support system for coordinating various types of support from the family, their healthcare professionals

and organizations in a way of teamwork to activate their social support systems, and working collaboratively as a multidisciplinary team to support patients financially and psychologically.

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