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The prevalence of depression, anxiety, and stress in patients with breast cancer in Southeast Iran in 2019: a cross-sectional study

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ABSTRACT

Introduction. Today, breast cancer patients suffer from various psychological symptoms that impose irreversible effects on their quality of life. The aim of the present study was to determine the prevalence of depression, anxiety, and stress in patients with breast cancer.

Material and methods. This descriptive study was performed on 190 women with breast cancer from January 1, 2019 to July 30, 2019. Data collection was carried out using a convenience sampling method. The Standard Depression, Anxiety, and Stress Scale (DASS-21) was used to assess depression, anxiety, and stress.

Results. The mean age of the patients was 46.3 years. Results showed the prevalence of depression, anxiety, and stress to be 28.4%, 43.2%, and 14.7%, respectively.

Conclusion. The results indicate that it is vital to measure the level of depression and anxiety in women with breast cancer, which are two common mental disorders in breast cancer.

Key words: breast cancer, depression, anxiety, stress

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Introduction

Breast cancer is considered one of the most important and most common cancers in women today. Breast cancer caused more than 375,900 deaths in 2017 [1]. Breast cancer also imposes costs of \$88 billion a year to patients with breast cancer [2]. Breast cancer diagnosis is one of the most stressful medical situations in a person's life [3]. Breast cancer can have a profound effect on the patient's physical, mental, and social status and overall well-being [4]. Psychosocial interventions can improve the quality of life (symptoms of depression and anxiety) in both groups of women with breast cancer [5]. Depression and anxiety have negative effects on

the quality of life of cancer patients, and in this regard, the Hospital Anxiety and Depression Scale (HADS) is currently a useful method to screen for these problems [6, 7]. Studies show that 10–50% of cancer patients suffer from psychosocial disorder (depression, anxiety, despair, social isolation, and work and financial problems), and the above figure increases in last stages of cancer [8, 9]. A recent meta-analysis shows that the global prevalence of depression among breast cancer patients is 32.2% [10]. Depression is a very common disorder in all ages and races, as well as in men and women worldwide [11]. Depression has a negative effect on quality of life, length of stay, and treatment outcome of cancer patients [12]. Another common disorder among cancer

patients is anxiety, the prevalence of anxiety is 41.9% [13]. Anxiety is associated with cancer, and these psychological symptoms are the most common psychological symptoms found in cancer patients. Patients with ineffective coping strategies exhibit higher levels of anxiety and depression, and social support led to a significant decrease in the level of anxiety and depression [14, 15]. Stress or perceived stress was also expressed as another psychological factor in cancer patients and was strongly related with depression [16]. Determining the exact level of depression and anxiety can help policymakers and healthcare providers plan for better control of these diseases. The aim of the present study was to determine the prevalence of depression, anxiety, and stress among patients with breast cancer.

Methods

Design

This cross-sectional study was performed on 190 women with breast cancer stages 3–4 referred to oncology wards of three educational hospitals in three Iranian cities (Zahedan, Arak, and Mashhad) from 1 January 2019 to 30 July 2019. Patients were selected through convenience sampling. Inclusion criteria included patients aged above 18 years, with no systemic disease.

Instruments

The standard depression, anxiety, and stress scale — 21 items (DASS-21) was used to assess depression, anxiety, and stress in patients [17]. This instrument consisted of 21 items, with seven items for each subscale. The instrument was scored based on a four-point Likert scale ranging from 0 to 3 (never, rarely, sometimes, and always). Depression levels were categorised into four categories, which indicated normal (score: 0–9), low (score: 10–13), moderate (score: 14–20), and severe (28 and above) level of depression. Normal, low, moderate, severe, and very severe anxiety were also indicated by scores of 0–7, 8–9, 10–14, 15–19, and 20 and above, respectively. The validity and reliability of this instrument has been confirmed in various Iranian [18, 19] and international (non-Iranian) [20, 21] populations. The demographic characteristics studied included age, city of residence, level of education, and marital status.

Data collection

Data collection was carried out after making coordination with the hospital cancer department and explaining the study objectives to the patients in simple

language. Questionnaires were then distributed among the qualified patients who expressed their consent to participate in the study. Patients were given 15 minutes to complete the questionnaires. Questionnaires were completed by the researcher in the case of illiterate participants.

Ethical considerations

The present study was approved by the Ethics Committee of Zahedan University of Medical Sciences (Ethic code: IR.ZAUMS.REC.1392.5962). Written and oral consent was obtained from all participants, and they were assured that their information would be kept confidential. The STROBE checklist was also used to report the study [22].

Statistical analysis

Descriptive statistical tests (mean, standard deviation, frequency, and percentage) were used to describe demographic characteristics of the participants and analytical tests (chi-square) were also used to examine the relationship between demographic characteristics with stress, anxiety, and depression. SPSS Version 18.0 for Windows (SPSS Inc., Chicago, IL, USA) was used to analyse the data. Confidence interval of 95% and a significance level of $P < 0.05$ was considered significant.

Results

All 190 patients with breast cancer were evaluated (response rate = 100%). The mean age of patients was 46.3 years (range: 19–76 years). The majority of the participants lived in Zahedan (77.9%), had high school education (25.3%), and were married (84.2%) (Table 1).

The prevalence of mild, moderate, and severe depression was 18.4%, 9.5%, and 0.5%, respectively. The prevalence of anxiety was 43.2%. The average prevalence of stress was 14.7%, with 12.6%, 1.6%, and 0.5%, for mild, moderate, and severe stress, respectively (Table 2).

Discussion

The present study investigated the prevalence of psychological factors (depression, anxiety, and stress) in breast cancer patients and revealed that 28.4%, 43.2%, and 14.7% of patients suffered from depression, anxiety, and stress, respectively.

Approximately one-third (28.4%) of patients suffered from depression, which is similar to the global prevalence of depression (32.2%) and to results from studies car-

ried out by Montazeri et al. (29.4%) [23], Taghavi et al. (34.2%) [24], and Nikbakhsh et al. (27.5%) [25] in different parts of Iran. The above figure was, however, lower than the rate reported in studies by Ramezani et al. [26] and Mashhadi et al. [27]. This difference could be due to differences in participants' place of residence, demographic characteristics of participants, methodological differences of the studies, and sample size.

High levels of mental distress for sustained periods of time in cancer patients may lead to anxiety, depression, or both [28]. The mortality rate is higher in depressed cancer patients than non-depressed patients [6]. Depression is very common in breast cancer patients; the prevalence of depression is 47.4% [10, 29], which can significantly affect the quality of life of patients [30]. Ac-

ording to various studies, the prevalence of depression in cancer patients ranges from 16–67% [31–33].

The prevalence of anxiety in the present study was 43.2%, which was close to the global prevalence of anxiety (41.9%) [13] and lower than the figure reported in the study by Ashbury (77%) [13]. Anxiety had a significant effect on the feeling of breast cancer patients and their coping mechanisms [34]. Results of a study showed that 16% of women with breast cancer were diagnosed as depressed until 6 to 13 years after treatment [35]. Other studies have shown that the prevalence of depression in cancer patients is estimated to be 15–30% or higher [(36–38], and although anxiety and depression are commonly seen in breast cancer patients, exacerbate the symptoms of the disease, and lead to no response to treatment, these mental disorders are ignored and left untreated [39]. Achieving understanding of these common mental disorders and related psychosocial factors can help plan treatment and may lead to more successful treatment [40]. Lueboonthavatchai concluded that the prevalence of anxiety disorder and anxiety symptoms was 16% and 19%, respectively [41].

Theoretically, stress is defined as the body's response to environmental or mental conflicts, or as the internal response that depends on their ability to cope with environmental stress [42]. In a meta-analysis, researchers concluded that stressful events are not associated with the risk of breast cancer in women [43]; however, high-intensity stress may be a potential risk factor for breast cancer. A study by Nikbakhsh et al. on 150 cancer patients in Iran showed that 44 participants (29.3%) had mild anxiety and 25 (16.7%) had symptomatic anxiety and mild depression, which is inconsistent with the present study, which showed lower stress rates [25]. This difference could be due to the type of cancer being studied and methodological differences. The main strength

Table 1. Participants demographic characteristics of breast cancer patients (n = 190)

Variables	N (%)
	Mean ± SD
Age (years)	46.3 ± 12.2
City of residence	
Zahedan	148 (77.9)
Mashhad	23 (12.1)
Arak	19 (10)
Education level	
Illiterate	39 (20.5)
Elementary	45 (23.7)
Secondary	23 (12.1)
High school	48 (25.3)
University graduate	35 (18.4)
Marital status	
Single	16 (8.4)
Married	160 (84.2)
Widow	14 (7.4)

Table 2. Prevalence of depression, anxiety, and stress among breast cancer patients

Variables	N (%)	Mean ± SD	Range
Depression		6.7 ± 4.9	0–21
Normal	136 (71.6)		
Low	35 (18.4)		
Moderate	18 (9.5)		
Severe	1 (0.5)		
Anxiety		6.7 ± 4.3	0–18
Normal	108 (56.8)		
Low	26 (13.7)		
Moderate	50 (26.3)		
Severe	6 (3.2)		
Stress		8.9 ± 5.1	37–160
Normal	162 (85.3)		
Low	24 (12.6)		
Moderate	3 (1.6)		
Severe	1 (0.5)		

of the present study was the investigation of depression, anxiety, and stress concurrently. Another strength of the present study was that participants from different cities with different cultures were included, especially from areas where fewer studies had previously been carried out. The main limitations of the present study were as follows: 1. The sample size was low, which could limit the generalisation of results. 2. This is a descriptive study that should consider the specific limitations of these studies when interpreting the study results. 3. Variables were evaluated using self-report measures instead of non-clinical evaluation, which should thus be taken into consideration.

Conclusions

Results showed that approximately one-third of patients suffer from depression and about half of them from anxiety. The high prevalence of depression and anxiety indicates the importance of timely and periodic evaluation of psychological symptoms in patients with breast cancer.

Conflicts of interest

The authors declare to have no conflict of interest.

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