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www.fppc.com.tr**Family Practice and Palliative Care**<https://dx.doi.org/10.22391/fppc.503683>**Original Article****Evaluation of depression and anxiety levels in patients with a complaint of a breast mass: a prospective study**

Memede kitle şikayeti olan hastalarda depresyon ve anksiyetenin değerlendirilmesi: prospektif bir çalışma

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Introduction: Breast cancer is the most common cancer among women in the world and in our country. Despite early diagnosis and improved treatment possibilities, breast cancer is difficult to accept and a major source of anxiety. It brings various psychosocial problems to the agenda. In this study, we aimed to evaluate the effect of depression and anxiety in the patients admitted to the outpatient clinic with the complaint of a mass in the breast and to determine the effect of mass on the mental health of women.

Methods: This study is an analytical case-control study. All of the participants were female (n=200). Patients filled the questionnaire containing the Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI) and the sociodemographic data form.

Results: There was no statistically significant difference between the case and control groups in terms of the marital status, living with someone, monthly income level, place of residence, occupation, and education level (p>0.05). There was a statistically significant difference between case and control groups in terms of the mean BDI score (19.6±1.05, 8.92±0.62, respectively, p<0.001). There was also a statistically significant difference between the two groups in terms of the mean BAI score (20.34±1.23, 7.88±0.71, respectively, p<0.001).

Conclusion: In our study, the incidence of depression and severe anxiety was significantly higher in the women admitted to the outpatient clinic with the complaint of a breast mass than in the healthy women.

Keywords: Breast mass, anxiety, depression

ÖZ

Giriş: Meme kanseri dünyada ve ülkemizde kadınlarda en sık görülen kanserdir. Erken tanı ve gelişen tedavi olanaklarına rağmen meme kanseri, kabul edilmesi zor, önemli bir kaygı kaynağı olarak çeşitli psikososyal sorunları gündeme getirmektedir. Biz bu çalışmamızda memede kitle yakınmasıyla polikliniğe başvuran hastalardaki depresyon ve anksiyeteyi değerlendirerek, kitlenin kadınlara ruh sağlığında oluşturduğu etkiyi tespit etmeyi amaçladık.

Yöntem: Bu çalışma analitik tipte bir vaka kontrol çalışmasıdır. Çalışmaya katılanların %100'ü kadındı (n=200). Hastalar Beck Depresyon Ölçeği (BDÖ), Beck Anksiyete Ölçeği (BAÖ) ve sosyodemografik verileri içeren anket formunu doldurdu.

Bulgular: Vaka ve kontrol grupları arasında medeni durum, kimlerle yaşadığı, aylık gelir düzeyi, yaşadığı yer, meslek ve eğitim düzeyi açısından istatistiksel olarak anlamlı farklılık saptanmadı (p>0,05). Vaka ve kontrol gruplarının BDÖ skor ortalaması arasında anlamlı fark vardı (19,6±1,05, 8,92±0,62, sırasıyla, p<0,001). İki grup arasında BAÖ skor ortalamaları arasında da istatistiksel olarak anlamlı fark saptandı (20,34±1,23, 7,88±0,71, sırasıyla, p<0,001).

Sonuç: Çalışmamızda memede kitle yakınması ile başvuran kadınlarda depresyon ve anksiyete skorları sağlıklı kadınlara göre anlamlı yüksekti.

Anhtar kelimeler: Memede kitle, anksiyete, depresyon

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Introduction

Breast cancer is the most common cancer among women and approximately 25% of cases are premenopausal women [1]. World Health Organization International Cancer Research Agency (WHO-IARC) estimates that the annual global burden of new breast cancer cases will reach 1.5 million people and the majority of these will be seen in low-income countries [2]. The incidence of breast cancer increasing in Turkey and continues to be the most common cancer in women. The high incidence of breast cancer increases breast cancer risk anxiety and its awareness [3]. First, in 2004 breast cancer screening standards were published by the Department of Fight Against Cancer, Ministry of Health [4]. Early detection by breast cancer screening programs is related to the application of invasive interventions that lead to less aesthetic impairment, increasing overall survival, and reducing mortality [5].

Breast cancer is a disease that makes significant changes in women's lifestyle, threatens the integrity of the body, and causes various changes in the appearance of women [6, 7]. This shows that there are psychological and social sides of breast cancer as well as medical and epidemiological aspects [8]. The psychology of women who have breast cancer or who have a high risk of cancer is negatively affected. Cancer, the second most common cause of death in many countries, including Turkey, causes serious psychological-social problems and labor force losses for the patients, their relatives, and the community. When the psychological and psychosocial problems are added to the treatment and care, the cost of the disease increases. [9, 10]. In the studies, the probability of any depressive disorder occurring in the patient after diagnosis of cancer has been reported between 4.5% and 58% [11, 12].

Depression is one of the common psychiatric disorders affecting the entire population. When untreated, it may cause negative results, such as deterioration in general health and early death, and it may be possible to improve the quality of life of the patient when properly diagnosed and treated appropriately [13].

Studies have focused on the relationship between cancer patients and depression. In the literature, there are not enough studies about the emotional status of women in the time between diagnosis and diagnosis of breast mass. In this study, we tried to determine the effect of breast mass on the mental health of women and in comparison with patients who came to Cancer Early Diagnosis Screening and Training Center (CEDSTC) for routine screening, and the sociodemographic factors that may be related to depression.

Methods

This study is an analytical type case-control study. This study was carried out as a case group of 100 patients who were admitted to the Breast Outpatient Clinic of Health Sciences University Konya Training and Research Hospital, between 01 July 2016-30 September 2016 without any diagnosis. 100 people who came for routine mammography to CEDSTC and had no complaints, were included in the study as a volunteer group. People who did not agree to participate in the study, with a diagnosed psychiatric disease, with a disease to affect cognitive function, under 18 years of age, and those who had anxiety and depression disorders after a short psychiatric interview were excluded from the study.

Before starting the study, approval was obtained from the Ethics Committee of the Medical Faculty of Selcuk University with the decision dated 29.06.2016 and numbered 2016/191. The volunteers were informed about the study. For the volunteers who accepted to participate in the study, a consent form in accordance with the Helsinki World Medical Association Declaration was obtained. The participants were asked to complete the sociodemographic data form, the Beck Depression Inventory (BDI), and the Beck Anxiety Inventory (BAI). The application of the questionnaires was carried out by the researcher, by reading it to the illiterate and marking the answers. Those who left unanswered questions in the questionnaire forms were excluded from the study.

Beck Depression Inventory

It is a self-report scale developed by Beck et al. [14] consisting of 21 questions used to assess the level of depression. The Turkish reliability and validity study was performed by Hisli et al. [15] The cut-off point of the scale was 17 points [16, 17].

Beck Anxiety Inventory

This is a three-point Likert type self-assessment scale consisting of 21 items developed by Beck et al. [18] Those with a BAI score of 0-7 were considered to be minimal, 8-15 to mild, 16-25 to medium and 26-63 to be severely anxious. Turkish reliability and validity study was performed using the Beck Anxiety Scale by Ulusoy et al. [19]. The cut off value was taken as 16.

Statistical Analysis

SPSS (Statistical Package for the Social Sciences, IBM Corp., Armonk, NY) 22.0 package program was used for coding and statistical analysis of the data. Statistical analysis of the data obtained in the study was evaluated as $\alpha = 0.05$ (Type I error). Frequency and percentage values in categorical variables; mean, standard error, median, minimum (min) and maximum (max) values were used in numerical variables. Kolmogorov-Smirnov and Shapiro-Wilk analysis were used for descriptive statistics, binomial test and continuous data distribution tests in single groups. Non-parametric Mann Whitney-U test used for the difference between the averages in two different groups, Spearman correlation analysis was used to measure the relationship levels. Chi-square tests were used to investigate the relationships between categorical variables.

Results

The study group consisted of 100 people who presented to the breast polyclinic for breast mass and 100 healthy people who applied to CEDSTC as a control group. 100% of the participants were women (n = 200). The sociodemographic characteristics of the participants are shown in Table 1.

Table 1. Sociodemographic characteristics of the participants

	Case group (n=100)		Control group (n=100)		Total n	p
	n	%	n	%		
Marital status						
The Married	85	85.00	90	90.00	175	0.285
Single	15	15.00	10	10.00	25	
Education Level						
Primary school graduates or below	69	69.00	80	80.00	149	0.074
Middle school graduates or above	31	31.00	20	20.00	51	
Place of Residence						
Rural areas	17	17.00	8	8.00	25	0.150
Urban areas	83	83.00	92	92.00	175	
Monthly income						
Level of 1500 liras or below	55	55.00	52	52.00	107	0.671
Level of 1500 liras or above	45	45.00	48	48.00	93	
Occupation						
Housewife	83	83.00	83	83.00	166	1
Other occupational groups	17	17.00	17	17.00	34	
Who do you live with?						
Alone	8	8.00	8	8.00	16	0.197
With husband	15	15.00	15	18.00	30	
With husband and children,	65	65.00	65	65.00	130	
With parents	7	7.00	1	1.00	8	
Living with all	5	5.00	8	8.00	13	

Chi-square tests

The mean age of the case group was 44.74 ± 1.12 (min = 19, max = 70). The mean age of the control group was 51.14 ± 0.68 (min = 40, max = 69). There was a statistically significant difference between the two groups ($p < 0.001$). The mean body mass index (BMI) of the patient group was 28.66 ± 0.59 and the mean BMI of the control group was 30.56 ± 0.45 . There was a statistically significant difference between the case and control groups in terms of BMI ($p = 0.007$).

When we questioned the menopausal status of the participants in our study, 30% ($n = 30$) of the case group was in menopause and 56% of the control group ($n = 56$) were in menopause. There was a statistically significant relationship between the case and control groups in terms of menopause status ($p < 0.001$). When we classified the participants according to whether or not they gave birth, 9% ($n = 9$) of the case group was nulliparous and 91% ($n = 91$) were multiple. 100% of the control group was multiparous. There was a statistically significant relationship between the two groups in terms of giving birth ($p = 0.006$).

Of the patients who have mass and thought that they have cancer, 27 of them (79.40%) had $BDI \geq 17$ and 7 of them (20.60%) had $BDI \leq 17$ and of the patients who did not think that they had cancer, 32 of them (48.50%) $BDI \geq 17$ and 34 of them (51.50%) $BDI \leq 17$ and there was a statistically significant difference between them ($p = 0.003$). Of the patients who have mass and thought that they have cancer, 8 of them (9 %) had $BAI \leq 15$ and 26 of them (26.50 %) had $BAI \geq 16$ and of the patients who did not think that they had cancer, 30 of them (45.50 %) $BAI \leq 15$ and 36 of them (54.50 %) $BAI \geq 16$ and there was a statistically significant difference between them ($p = 0.032$).

Of the participants with a mass, we looked at how long take to apply to the clinic after they noticed the mass and we found that 20 (10%) participants went immediately, 21 (10.50%) participants went in one week, 37 (18.50%) participants went in one month, 9 (4.50%) participants went in six months, 5 (2.50%) participants went in one year and 8 (4%) participants went to the clinic after more than one year. When we compared the depression levels of the study groups, a statistically significant difference was found ($p < 0.001$). The incidence of depression in the case group was 1.351 times higher than the control group [Odds Ratio = 0.074 %95 CI (min = 0.034 max = 0.115)] (Table 2).

Table 2. Comparison of the relationship of the study groups with the level of depression

	BDI ≥ 17 (Depression)		BDI < 17 (No Depression)		P
	n	%	n	%	
Case group	60	60.00	40	40.00	<0.001
Control group	10	10.00	90	90.00	

Chi-square tests

When the anxiety levels of the study groups were compared, a statistically significant difference was found ($p < 0.001$). The incidence of moderate and severe anxiety in the case group was 8,333 times higher than in the control group [Odds Ratio = 0.120 % 95 CI (min = 0.062 max = 0.233)] (Table 3).

Table 3: Comparison of the relationship between the anxiety levels and the study groups

	BAI < 16 Minimal or mild anxiety		BAI ≥ 16 Moderate or severe anxiety		p
	n	%	n	%	
	Case group	37	37.00	63	
Control group	83	83.00	17	17.00	

Chi-square tests

The mean BDI score of the case group was 19.60 ± 1.05 and the BDI score of the control group was calculated as 8.92 ± 0.62 . There was a statistically significant difference between the two groups ($p < 0.001$). The mean BAI score of the case group was calculated as 20.34 ± 1.23 and the BAI score of the control group was calculated as 7.88 ± 0.71 . There was a statistically significant difference between the two groups in terms of mean anxiety score ($p < 0.001$) (Table 4).

Table 4. Comparison of depression and anxiety scores of study groups

	Case Group Average \pm Std Err.	Control Group Average \pm Std. Err.	P
BDI scores	19.6 \pm 1.05	8.92 \pm 0.62	<0.001
BAI scores	20.34 \pm 1.23	7.88 \pm 0.71	<0.001

Mann Whitney-U test

Discussion

Breast cancer is the most common cancer among women in both developed and developing countries. It constitutes 23% of all cancer cases and 14% of deaths due to cancer in women. While the incidence of 38-40 per 100,000 in the world, in Europe the ratio is around 66-67 and in Turkey the ratio is 40 [20]. In the literature, it has been found in many studies that the most common finding in breast cancer is the mass that can feel with hand [21, 22]. In spite of early diagnosis and treatment options, breast cancer raises various psychosocial problems as a significant source of anxiety. Although the risk of breast cancer causes a great psychological impact on most women, very few studies have been conducted [23] to investigate depression and anxiety changes at different diagnostic stages in women with suspected breast cancer.

Major depressive disorder can be seen at any age, but is more common in the middle ages and especially between the ages of 40-50 [13]. Although there was a significant difference between the mean age of the groups in our study, the mean age of the two groups was the most common age of depression. Therefore, we believe that the age factor does not affect the results of our study.

In the literature, it has been suggested that there are three hypotheses between obesity and depression so far: a positive relationship between depression and obesity (higher depression is associated with more obesity) [24, 25], a negative relationship (higher depression is associated with lower obesity) and there is no relationship [26, 27]. In our study, the case group was found to be significantly lower than the BMI control group. As a result of a large-scale study by Tangen T. et al., post-menopausal women's depression and anxiety scores were significantly higher than perimenopausal women [28]. The cohort studies reported that the risk of clinical depression increased during menopause and early postmenopausal period [29]. In our study, the number of patients with menopause in the control group was significantly higher than the case group. Despite this, the anxiety and depression scores of the case group were high.

Many studies have been reported women with high risk of breast cancer have feelings of fear, anxiety, and despair [30, 31]. Turgut et al. [32] in Ankara In 2009, 112 women who applied to the general surgery clinic with any complaint and 108 women who diagnosed before and take medical information after the diagnosis, applied the Hamilton Anxiety Scale. There was a significant decrease in anxiety scores of women after diagnosis. The mean anxiety scores of the patients with and without cancer thought, there was significant decrease was observed in the group with the idea of cancer at the time of admission and after the diagnosis compared to each other [33]. As a result of a study of Liao M.N. et al. [23], the women who applied to the clinic due to a mass in the breast reported a significant level of anxiety until a definitive diagnosis was made.

In our study, the frequency of depression and anxiety levels were significantly higher in patients who with a mass in their breast than those who did not. This situation shows that women's fear of being cancer has a negative effect on their psychology and our study is compatible with other studies in the literature. In our study, the presence of depression was significantly higher in patients who thought they were late to apply to the clinic. The rate of severe anxiety was significantly higher in patients who thought they were late than those who did not.

Conclusion

In our study, the prevalence of depression, BDI averages, moderate anxiety, and BDI scores were significantly higher than healthy women in women with a complaint of the breast mass. This situation suggests that the mass in the breast causes severe psychological changes in women, women with breast complaints should be approached holistically and women should be supported in psychosocial terms.

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