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Relationship of Women's Breast Cancer Fatalism Perceptions with Health Beliefs and Early Diagnosis Behaviors

Kadınların Meme Kanserine Yönelik Kadercilik Algılarının Sağlık İnançları ve Erken Tanı Davranışları ile İlişkisi

ABSTRACT

Objective: This study aims to examine the relationship of women's breast cancer fatalism perceptions with health beliefs and early diagnosis behaviors.
Method: This descriptive and relational design study was conducted with 400 women. Data were collected using the Personal Information Form', the 'Breast Cancer Health Belief Model Scale', and the 'Breast Cancer Fatalism Scale'.
Results: Women who had high Breast Cancer Fatalism Scale mean scores were found to have low levels of breast self-exam (BSE) and clinical breast exam ($p<.05$). While a negative relationship was detected between health motivation, BSE benefits, BSE self-efficacy, and mammography benefits sub-scale scores of the Breast Cancer Health Belief Model Scale, a positive relationship was detected between susceptibility, seriousness, BSE barriers, and mammography barriers sub-scales and Breast Cancer Fatalism Scale scores.
Conclusion: As a result, a negative relationship was found between women's breast cancer fatalism, health beliefs, and early diagnosis behaviors. It is recommended that health professionals evaluate individuals' health beliefs and breast cancer fatalism perception level and take these factors into account in their education planning in order to increase women's screening behavior.

Keywords: Breast Cancer, Early Diagnosis, Health Screening Behaviors, Public Health, Women

ÖZ

Amaç: Bu çalışma kadınlarda meme kanseri kadercilik algısının sağlık inançları ve erken tanı davranışları ile ilişkisini incelemek amacıyla yapılmıştır.
Yöntem: Tanımlayıcı ve ilişkisel tasarımlı bu çalışma 400 kadınla yürütülmüştür. Araştırmanın verileri Tanıtıcı Özellikler Formu, Meme Kanseri Sağlık İnanç Modeli Ölçeği ve Meme Kanseri Kadercilik Ölçeği kullanılarak toplanmıştır.
Bulgular: Meme Kanseri Kadercilik Ölçeği puan ortalaması yüksek olan kadınların KKMM yapma ve KMM yaptırma oranlarının düşük olduğu saptanmıştır ($p< .05$). Kadınların Meme Kanseri SİM Ölçeği alt boyutlarından; sağlık motivasyonu, KKMM yararları, KKMM öz-etkililiği ve mamografi yararları alt boyutları ile Meme Kanseri Kadercilik Ölçeği puanları arasında negatif yönde bir ilişki olduğu saptanırken duyarlılık, ciddiyet, KKMM engelleri ve mamografi engelleri alt boyutları ile Meme Kanseri Kadercilik Ölçeği puanları arasında pozitif yönde bir ilişki saptanmıştır.
Sonuç: Sonuç olarak kadınların meme kanseri kaderciliği, sağlık inançları ve erken tanı davranışları arasında negatif yönde bir ilişki bulunmuştur. Sağlık profesyonellerinin bireylerin sağlık inançlarını ve meme kanseri kadercilik algı düzeyini değerlendirmeleri ve kadınların tarama davranışlarını artırmak için eğitim planlamalarında bu faktörleri dikkate almaları önerilir.

Anahtar Kelimeler: Erken Tanı, Halk Sağlığı, Kadın, Meme Kanseri, Sağlık Taraması

Introduction

Breast cancer is a systemic disease in which the cells in mammary gland channels in the breast tissue spread in an uncontrolled way and continue to spread to other tissues and areas (Smith, 2019). Breast cancer, the most common cancer type in women in our country and the world, may result in death and decrease women's quality of life TR Ministry of Health 2020). The prevalence of breast cancer is increasing every day. With this increase, when they are diagnosed, most breast cancer patients are in the advanced stage of the disease (WHO, 2006; TR Ministry of Health, 2020). Early diagnosis of breast cancer increases patients' compliance to the treatment, shortens the duration of recovery with treatment, and increases 5 to 10-year survival time substantially (Haydaroğlu et al., 2019). In this respect, the importance of screening methods and diagnosis is increasing day by day (Haydaroğlu et al., 2019; TR Ministry of Health, 2020).

Screening for the early diagnosis of breast cancer in our country includes Mammography, Breast Self-Exam (BSE) and Clinical Breast Exam (CBE) (TR Ministry of Health, 2020). While mammography as a screening method decreases death rates in those who have breast cancer, BSE and CBE increase women's awareness about the disease. An analysis of the Health Statistics Annual data of the Ministry of Health, 19.7% of women in our country have BSE regularly, and only 9.0% of those aged 40 and over had mammography within the last year. On the other hand, 71.1% of women never had mammography, not even once in their entire life (Başaran, 2017). Several studies show that mammography decreases cancer death rates between 20% and 40% (TR Ministry of Health, 2020). In this regard, mammography is used as a screening method for breast cancer worldwide, and early diagnosis is reported in countries that use this method in a society-based and organized way (TR Ministry of Health, 2005). Decreasing deaths to be caused by breast cancer requires the participation of at least 70% of the target population in these screenings (Breast Health Association, 2022; TR Ministry of Health, 2005).

Participation in screenings can be increased by educating women about the factors affecting screening behaviors and taking necessary measures for these. The Health Belief Model is an effective model utilized for investigating the causes of breast cancer screening behaviors. The model claims that women's early diagnosis behaviors are affected by their religious beliefs, attitudes, perceptions, and values (Gözüm & Çapık, 2014). Thanks to this model, attitudes and behaviors that are seen as a problem in early diagnosis behaviors are determined and the harm is decreased to a minimum, and women's early diagnosis behaviors can be affected positively by providing them with more appropriate health education. Developed early diagnosis behaviors and awareness could increase participation in breast cancer screening methods and substantially decrease breast cancer mortality rates (Haydaroğlu et al., 2019; TR Ministry of Health, 2020).

Women's perceptions can affect their early diagnosis behaviors for breast cancer. While these perceptions may sometimes support the woman's diagnosis behaviors, in some cases, it may play a barrier role. Breast cancer fatalism is one of these perceptions (Pinar Coşkun, 2019).

Breast cancer fatalism perception includes the belief that breast cancer is women's fate and an unchangeable and inevitable part of their life (Pinar Coşkun, 2019). Breast cancer fatalism perception involves the belief that the fate written by God cannot be changed or prevented with the intervention of human willpower (Kaya & Bozkur, 2015). Breast cancer fatalism perception may cause women to think that the disease happens out of their will and avoid their own responsibilities about breast cancer. Breast cancer fatalism perception could affect women's tendency to early diagnosis behaviors negatively (Pinar Coşkun, 2019). The literature includes studies indicating that fatalism perception decreases taking measures against diseases or developing protective health behaviors (Hall et al., 2008; Molaei-Zardanjani et al., 2019).

This study aims to determine the relationship between women's breast cancer fatalism perceptions with health beliefs and early diagnosis behaviors for breast cancer. Data obtained from the study are believed to contribute to planning screening programs that aim to develop breast cancer screening behaviors in society and improve the content of the current programs.

The research questions were:

Do women's perceptions of fatalism affect their health beliefs about breast cancer, is there a relationship?

Do women's perceptions of fatalism contribute to early

detection behaviors towards breast cancer, is there a relationship?

Methods

Design and Participants

This study utilized a descriptive and relational screening design. The target population was all women aged 18 to 69 who sought treatment at the family health center in a city located in eastern Turkey between February and March. The sample size of the study was determined using the sampling calculation formula for an unknown target population. According to this formula, the study should include at least 384 participants. Considering missing data between 10% to 30%, this study was completed with 400 participants. The sample of the study included 400 women who visited this center for any reason and agreed to participate in the study.

Measures

Data were collected through the Personal Information Form, the Breast Cancer Health Belief Model Scale, and the Breast Cancer Fatalism Scale. The study's data were also collected through face-to-face interviews with women at the family health center.

The Personal Information Form

The form prepared by the researcher was composed of two parts. The first part included questions about participating women's demographic characteristics, such as age, marital status, etc., while the second part included questions about their early diagnosis and screening behaviors.

Breast Cancer Health Belief Model Scale

The scale was developed by Champion (Champion, 1993) in 1984. It was developed based on the health belief model to be utilized in breast cancer screenings (Champion, 1999; Gözüm & Aydin, 2004). The Breast Cancer HBM Scale was adapted to Turkish by Gözüm and Aydın (Gözüm & Aydın, 2004) in 2004. The 5-point Likert scale includes 8 sub-scales, and 52 items responded with 1 point (I strongly disagree) and 5 points (I strongly agree). Scores closer to 5 points based on the participants' responses indicate higher perceptions. Cronbach's Alpha value of the Breast Cancer Health Belief Model Scale, adapted by Gözüm and Aydın,

was reported to be between 0.69 and 0.83 (Gözüm & Aydin, 2004). This study found Cronbach's Alpha values of the Breast Cancer Health Belief Model Scale between 0.67 and 0.90.

Breast Cancer Fatalism Scale

The original Breast Cancer Fatalism Scale developed by Powe (Ramírez & Carmona, 2018) was composed of 15 questions. It was revised by Mayo, Ureda and Parker (Powe, 2011) in 2011 to measure fatalism in breast cancer, and the number of items in the received form was reduced to 11. Reliability and validity of the Turkish adaptation of the form were performed by Ersin et al (Ersin et al., 2018) in 2014. The scale is composed of 11 questions responded as "Yes" (1 point) and "No" (0 points). Scores to be obtained from the scale range between 0 and 11, with higher scores indicating higher fatalism perceptions. The KR-20 value of the scale was determined at 0.79 (Ersin et al., 2018). This study detected the KR-20 value of the scale as 0.82.

Data Analysis

Data analysis was performed in the SPSS 26 program and included arithmetic means, standard deviation, skewness and kurtosis coefficients, t-test in independent groups, one-way analysis of variance (ANOVA), Welch ANOVA when group variances were not homogenous, Bonferroni tests for Post Hoc analyses, and correlation analysis. Skewness and Kurtosis values, which were analyzed to understand if the data distributed normally, should be in the range of ±3 (Tabachnick et al., 2013) The Skewness and Kurtosis values were found to range from 0.126 to 0.383. Since Skewness and Kurtosis values of the scales and sub-scales were within the ±3 range, all the scales and sub-scales were found to distribute normally.

Ethical Considerations

This study followed the principles in the Declaration of Helsinki. Ethics committee approval was obtained from the ethics committee of Atatürk University Medical Faculty (document date and number: 25/11/2021-B.30.2.ATA.0.01.00/498), and written permission to administer the questionnaire forms was obtained from the city provincial directorate of health. Moreover, participants' informed consent was received before they were administered the questionnaires.

Results

When the descriptive characteristics of the participating women were analyzed, it was found that 28.7% were aged 46-55, 42.8% graduated from primary school, 76.3% were married, 62.3% had a nuclear family, 74.5% did not work, and 46% had income less than expenses. When the participants were analyzed in terms of their characteristics about early diagnosis behaviors, 73.3% were found to know the responsibility of their body; 64.2% did not perform BSE; and 28.2% of those who did not perform BSE reported not performing it because they did not know how to do it. Of all the participants, 33% had both mammography and ultrasound before; 70% did not have CBE; and 29.8% of these women did not need to have CBE.

Table 1 demonstrates participating women's Breast Cancer HBM Scale and Breast Cancer Fatalism scale mean scores. When the participants' Breast Cancer HBM Scale sub-scale mean score distributions were analyzed, the susceptibility sub-scale mean score was found 7.78±3.00; the importance/seriousness sub-scale mean score was 21.11±5.35; the health motivation sub-scale mean score was 19.71±3.53; BSE benefits sub-scale mean score was 14.50±3.03; CBE barriers sub-scale mean score was 20.92±5.62; BSE self-efficacy sub-scale mean score was 30.69±7.58; mammography benefits sub-scale mean score was 17.98±3.54; and mammography barriers sub-scale mean score was 27.03±7.31. When the participants' Breast Cancer Fatalism Scale mean scores were analyzed, the scale mean score was found to be 4.69±2.67 (Table 1).

Table 1 Distribution of the women's breast cancer HBMS and breast cancer fatalism scale mean scores (n=400).

Scale Mean Scores	Number of Items	Distribution Range	X±SD
Breast Cancer HBMS			
Susceptibility	3	3-15	7.78±3.00
Importance/Seriousness	6	6-30	21.11±5.35
Health Motivation	5	5-25	19.71±3.53
BSE Benefits	4	4-20	14.50±3.03
BSE Barriers	8	8-40	20.92±5.62
BSE Self-efficacy	10	10-50	30.69±7.58
Mammography Benefits	5	5-25	17.98±3.54
Mammography Barriers	11	11-48	27.03±7.31
Breast Cancer Fatalism Scale	11	0-11	4.69±2.67

Table 2 compares women's early diagnosis behaviors according to the Breast Cancer Fatalism Scale mean scores.

When the participating women's Breast Cancer Fatalism Scale mean scores were analyzed according to their knowledge of their body responsibilities, the mean scores were found to be higher in the group that did not know compared to those who did. The analysis results showed that the difference was statistically significant.

When the participating women's Breast Cancer Fatalism Scale mean scores were compared according to performing BSE, the mean scores were lower in women who performed BSE than those who did not. On the other hand, the mean scores were higher in women who did not believe in the necessity of BSE and believed in fate

compared to other groups. Analysis results showed that these groups caused the difference and that it was statistically significant.

When the participating women's Breast Cancer Fatalism Scale mean scores were compared according to having had mammography or ultrasound, the mean scores were found to be higher in women who had mammography compared to those who had both mammography and ultrasound and those who had none of them. Analyses performed showed that the difference was caused by these groups and was statistically significant.

When the participating women's Breast Cancer Fatalism Scale mean scores were compared according to CBE, the mean scores were lower in women who had CBE compared to other groups. Analysis results showed that

these groups caused this difference and it was statistically significant (Table 2).

Comparison of the participants' early diagnosis behaviors according to their breast cancer fatalism scale mean scores (n=400).

Table 2 Comparison of the participants' early diagnosis behaviors according to their breast cancer fatalism scale mean scores (n=400).

Characteristics	n	Breast Cancer Fatalism Scale	Test and p
Women's knowledge about body responsibility			
Yes	293	4.24±2.52	t: 5.764
No	107	5.91±2.69	.001
Performing BSE			
I do [1]	143	2.90±2.36	F(Welch):43.658
I do not think it is necessary [2]	99	6.38±2.24	.001
I do not know how to perform BSE [3]	113	5.01±2.01	1<2,3,5
I am scared if I find a bulk [4]	12	3.33±2.67	2,5>1,3,4
I believe in fate [5]	33	6.72±1.89	
Having Mammography or Ultrasound			
Mammography [1]	105	5.57±2.59	F: 6.773
Ultrasound [2]	56	5.01±2.40	.001
Both mammography and ultrasound [3]	132	4.21±2.61	1>3,4
I had none of them [4]	107	4.23±2.74	
Having breast examination			
I had [1]	120	3.54±2.58	
No-neglect [2]	48	5.10±2.31	
No need [3]	119	5.04±2.80	F(Welch):7.206
Fear of finding a bulk [4]	29	5.44±2.98	.001
Lack of doctor recommendation [5]	46	5.45±2.62	1<2,3,4,5,6
Shyness [6]	38	5.18±1.48	

This study analyzed the relationship between the participants' Breast Cancer HBM Scale and Breast Cancer Fatalism Scale mean scores (Table 3). A negative, weak-level relationship was found between women's Breast Cancer HBM Scale BSE benefits, health motivation, BSE self-efficacy, and mammography benefits sub-scales and Breast Cancer Fatalism Scale scores. Besides, a positive and weak relationship was found between breast cancer BHM Scale susceptibility, seriousness, BSE barriers, and mammography barriers sub-scales and Breast Cancer Fatalism Scale mean scores ($p<.001$) (Table 3).

Relationship between the participants' breast cancer HBM scale and breast cancer fatalism scale mean scores (n=400).

Table 3 Relationship between the participants' breast cancer HBM scale and breast cancer fatalism scale mean scores (n=400).

Scales	Breast Cancer	Fatalism Scale
Breast Cancer HBM Scale	r value	p value
Susceptibility	146	.004
Seriousness	273	.001
Health Motivation	345	.001
BSE Benefits	425	.001
BSE Barriers	403	.001
BSE Self-efficacy	411	.001
Mammography Benefits	223	.001
Mammography Barriers	268	.001

Discussion

An analysis of participating women's Breast Cancer HBM Scale scores showed that the susceptibility perception mean score was 7.79±3.00, which is above average. Similarly, several studies in the literature reported women's breast cancer susceptibility mean scores between 6.70±3.20 and 12.99±3.00 (Açıkgöz et al., 2015; Aytekin et al.; Gördes Aydoğdu & Bahar, 2011). Susceptibility perception is a sub-scale indicating the degree women perceive themselves at risk in terms of having breast cancer. As they believe that their probability of having breast cancer is high, women who have high susceptibility perception may demonstrate early diagnosis and screening behaviors more (Champion, 1993; Gözüm & Çapık, 2014).

The seriousness perception sub-scale mean score of participating women was found 21.11±5.35 in this study, indicating an above-average level. The literature similarly reports breast cancer seriousness perception mean scores between 17.04±8.74 and 23.91±4.91 (Demirtaş & Aydoğdu, 2021; Karabaş, 2013). Seriousness perception is a health belief that causes women to see breast cancer as a serious disease. Perceiving breast cancer as a serious disease causes women to see breast cancer as a threat to themselves and demonstrate screening behaviours (Champion, 1993).

Participating women's health motivation sub-scale mean score was found 19.71±3.53 in this study, indicating an above-average level. Women's health motivation perception mean scores ranged between 17.52±5.28 and 20.5±2.85 in the literature (Demirtaş & Aydoğdu, 2021; Karabaş, 2013). Higher health motivation perception of women make them want to have breast cancer screening behaviors and become determined about maintaining those behaviors (Gördes Aydoğdu & Bahar, 2011; Gözüm & Çapık, 2014).

BSE benefit perceptions of participating women were found to be 14.50±3.03, indicating an above-average level. The literature reported women's BSE benefit perception mean scores between 15.70±3.14 and 16.56±4.04 (Alagöz & Tuncer, 2021; Altıntaş & Aslan, 2020). Although participating women had an above-average BSE benefit sub-scale mean score, it was found to be lower in comparison to other studies in the literature. BSE benefit perception could have effects on women's thinking that screening behaviors can have effects on getting protected from breast cancer and benefitting from the treatment in case of having the disease. This perception increases women's tendency to screening methods (Gözüm & Çapık, 2014).

Participating women's BSE barrier perception sub-scale mean score was found to be 20.92±5.62, which is above average. The literature reports women's BSE barrier perception mean scores between 15.39±5.79 and 19.35±5.16 (Alagöz & Tuncer, 2021; Altıntaş & Aslan, 2020). BSE barrier perception sub-scale mean score of the women in this study was found to be higher than other studies in the literature. Barrier perception prevents women from performing BSE (Ersin & Bahar, 2012; Gözüm & Çapık, 2014). This finding is supported by low levels of BSE (35.8%) performed by women in this study.

Participating women's BSE self-efficacy sub-scale mean score was found 30.69±7.58, indicating an above-average level. In a similar vein, other studies in the literature reported BSE self-efficacy sub-scale mean scores between 34.66±5.99 and 36.19±9.27 (Alagöz & Tuncer, 2021; Bakır & Demir, 2020). Although the BSE self-efficacy mean score was above-average in this study, it was found to be lower than in other studies. As the increase in BSE self-efficacy perception makes the woman think that performing BSE could result in success, the higher the BSE self-efficacy is,

the higher the probability of screening behavior is (Gördes Aydoğdu & Bahar, 2011; Gözüm & Çapık, 2014). Lower levels of performing BSE (35.8%) in this study seem to support this finding.

Participating women's mammography benefits perceptions sub-scale mean score was 17.98±3.54, which is above average. The literature reports mammography sub-scale mean score between 18.83± 4.00 and 19.12±3.38 (Bakır & Demir, 2020). Mammography benefits sub-scale mean score was found to be lower than the ones reported in the literature. Increased mammography benefits perception makes women see mammography as a beneficial screening method and develop positive screening behaviors (Gözüm & Çapık, 2014).

Participating women's mammography barriers perception sub-scale mean score was found 27.03±7.31, which was below average. While the Breast Cancer HBM mammography barriers sub-scale mean score was below average, the scores were found to be above average in other sub-scales. The literature reported the mammography barriers sub-scale mean scores between 20.05±8.39 and 26.81±5.75 in other studies (Altıntaş & Aslan, 2020; Karabaş, 2013). This study found the mammography barriers perception sub-scale higher than the other studies in the literature. The mammography barriers sub-scale is not a desired finding because a higher score in this sub-scale indicates higher negative perceptions about mammography. Women's screening behaviors decrease with the increase in mammography barriers perceptions (Gözüm & Çapık, 2014; Nahcivan & Secginli, 2007).

Participating women's Breast Cancer Fatalism Scale mean score was found 4.69±2.67, which was below average. The Fatalism Scale mean score of women in this study is below average. Similarly, other studies in the literature reported the Breast Cancer Fatalism Scale mean score between 3.6±2.6 and 6.00±3.51 (Erbil & Bolukbas, 2012; Pinar Coşkun, 2019; Aksu & Ersin 2021). In a study conducted on seasonal agricultural worker women, breast cancer fatalism levels were found to be high (Aksu & Ersin 2021). Women's higher Breast Cancer Fatalism Scale mean score indicates higher breast cancer fatalism perceptions. Below-average Breast Cancer Fatalism Scale mean scores in

this study indicate that breast cancer fatalism perceptions are not very high. The breast cancer Fatalism Scale mean score in this study is a score close to the other studies using the same scale in the literature.

This study found that breast cancer fatalism mean scores were higher in women who did not know the responsibility of their body and who did not believe in the necessity of BSE. Women who had BSE and CBE, on the other hand, were found to receive lower scores on the Breast Cancer Fatalism Scale. The literature includes a limited number of studies that explain the relationship of breast cancer fatalism perception with early diagnosis behaviors. For this reason, similar studies were analyzed. The study conducted by Ersin and Dedeoğlu (Ersin & Dedeoğlu, 2020) reported that fatalism perceptions were lower in women who had BSE and CBE.

When participating women's Breast Cancer Fatalism Scale mean scores were compared according to having mammography or ultrasound, mean scores were higher in women who had mammography compared to those who had both mammography and ultrasound and those who had none of them. Individuals who had high breast cancer fatalism perception had higher participation in mammography screenings. This finding was not expected; since fatalism perception could prevent positive health behavior, it is expected to decrease mammography application rates (Akhigbe & Akhigbe, 2012). Although the literature reported no direct relationship of fatalism with having mammography, it was reported to be associated with barriers in cancer screening (Farmer et al., 2007; Holroyd et al., 2004). Similar to the findings of our study, several studies in the literature reported higher levels of breast cancer fatalism scores in women who had mammography (Drew & Schoenberg, 2011; Ersin & Dedeoğlu, 2020; Molaei-Zardanjani et al., 2019). The Ministry of Health has been conducting many activities to have mammography screening in recent years, when access to health services is easier. Some of these activities include encouraging women to mammography by establishing screening centers, involving all women aged over 40 in the routine screening programs, providing mammography screenings by visiting towns and villages in articulated lorries, sending women to screening center on certain days of each month with the initiation of health personnel in the

Family Health Centers, and calling women to remind their mammography. All these are external factors that affect women's mammography. Higher mammography rates of women who have high fatalism rates could be associated with these external factors. The important thing is the woman's participation in screenings by making it a health behavior done at certain intervals with the help of both internal and external factors. Although participating women's breast cancer fatalism perception was high, their participation in mammography screenings was high. However, BSE performed by themselves with their own responsibility was low, which indicates that mammography is not a conscious behavior done with their own responsibility, and it is not a screening behavior. Participating women who had high breast cancer fatalism perception had low Breast Cancer HBM Scale mammography benefits score and high mammography barriers score, which supports this notion. The results of the present study show that the increase in breast cancer fatalism perception decreases the tendency in breast cancer early diagnosis and screening behaviors.

This study detected a negative and weak relationship between health motivation, BSE benefits, BSE self-efficacy and mammography benefits sub-scales of the Breast Cancer BHM Scale and the Breast Cancer Fatalism Scale scores. Besides, a weak and positive relationship was detected between the susceptibility, seriousness, BSE barriers, and mammography barriers sub-scales of the Breast Cancer HBM Scale and the Breast Cancer Fatalism Scale scores. There is a limited number of studies explaining the relationship between breast cancer fatalism perception and health beliefs. That's why similar studies were analyzed. In a similar vein, while the study conducted by Kulakçı et al. (Kulakci et al., 2015) found a negative and weak relationship between breast cancer fatalism perceptions and BSE benefit perceptions, a positive and weak relationship was detected between fatalism perception and BSE barriers. Similar to the findings of the present study, Altıntaş et al. (Altintas et al., 2017) also found a negative relationship between BSE benefits and breast cancer fatalism. In the study that investigated the effects of middle-class African women's fear and breast cancer fatalism perceptions on breast cancer screening behaviors, Talbert (Talbert, 2008) found that breast cancer fatalism perceptions affected health belief perceptions,

which is in line with the findings of the present study.

Limitations

The limitations of the study are that it was conducted in a small group and in only one city.

Conclusion and Recommendations

BSE and CBE rates of those who had high breast cancer fatalism perceptions were found to be lower than those who had low fatalism perceptions. According to the HBM Scale sub-scales, those who had high Breast Cancer fatalism perception also had BSE barriers perception and mammography barriers perception.

As a result, a negative relationship was found between women's breast cancer fatalism, health beliefs and early diagnosis behaviors. In line with these results, health professionals in primary healthcare services are recommended to evaluate women's breast cancer fatalism perception levels and plan education accordingly.

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