Original Article

The Effect of Breast Cancer Fear on Early Detection Behaviors of Women

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Abstract

Background: Early detection is the most effective method to reduce morbidity and mortality in breast cancer as in other types of cancers.
Aims: This research aimed to analyze the effect of breast cancer fear on early detection behaviors of women.
Methods: This descriptive research was conducted on 380 women aged 20 and older during the years 2013 and 2014. Data has been collected using the Socio-Demographic Characteristics Information Form, the Breast Cancer Fear Scale and the Assessment Form for Early Detection Behaviors of Breast Cancer.
Results: While 16.8% of participants perform regular breast self-examination, rates of women who have clinical breast examination and mammography are respectively 13.9% and 22.8%. Furthermore, 82.6% of the participants have serious breast cancer fear and a statistically significant difference has been found between the breast cancer fear and women's early detection behaviors (Breast self-examination, clinical breast examination, and mammography).
Conclusion: In view of the research results, it is suggested that the breast cancer fear and its effect on women's behaviors must be defined first in order to develop early detection behaviors for breast cancer among women.

Keywords: breast cancer, early detection, fear, nursing

Introduction

Breast cancer is the most common type of cancer among women in the world which stays the fifth rank of mortality overall cancers. According to the statics of International Agency for Research on Cancer [IARC] (International Agency for Research on Cancer, 2017), 25% of all women cancers is breast cancer. In Turkey, breast cancer is the most common cause of death resulted from cancer among women and it constitutes 24.5% of all cancer types diagnosed in women. In 2012, the mortality rate caused by breast cancer was reported as 15.7%. Early detection is the most effective method to reduce morbidity and mortality in breast cancer as in other types of cancers. Clinical breast examination (CBE) and mammography are

suggested for early detection of the breast cancer. Furthermore, breast self-examination (BSE) is also suggested for raising awareness about breast health (American Cancer Society, 2017). However, early detection behavior rate of women on breast cancer is relatively low (Adams et al., 2006; Fouladi et al., 2013; Akhtari-Zavare et al., 2013; Subramanian et al., 2013; Sonmez et al., 2012).

The reasons why women avoid early detection behaviors for breast cancer include neglect of screening, forgetfulness, lack of knowledge, low level of education, insufficient time, low income, inadequate transportation facilities to health services, lack of health insurance, failing to get an appointment, feeling embarrassed during the examination/religious beliefs, lack of family

support, lack of suggestions from medical officials and fatalism, etc. Furthermore, fear of screening methods, being diagnosed with breast cancer and losing the breast also seriously affect the early detection behaviors of women (Garbers et al., 2003; Parsa et al., 2006; George, 2000; Ersin & Bahar, 2011; Kissal & Beser, 2011).

There are many studies, some of which indicate that the fear of breast cancer adversely affects early detection behaviors of women, while others show that this fear doesn't affect at all or positively affects early detection behaviors (Kissal & Beser, 2011; Al-Naggar & Bobryshev, 2012; Kim & Kim, 2008; Polat & Ersin, 2017). Champion et al., (2004) reported that the rate of performing early detection behaviors among women who had a medium level of breast cancer fear was relatively high, on the contrary, low and high levels of fear affected the behaviors in a negative way. Schwartz, Taylor & Willard, (2003) stated that women with high level of breast cancer fear had less mammography screening in 12 months. Furthermore, the mammography rate among women with low level of breast cancer fear (%77) was higher than the mammography rate among women with high level of breast cancer fear (%57). Kim & Kim (2008) conducted a research on 138 Korean women and found that these women had a medium level of breast cancer fear and they regarded this fear as preventing mammography. Al-Naggar & Bobryshev (2012) reported that 15% of 200 Malaysian women had mammography examination only once throughout their lives and only 2% of these 200 women had regular mammography screenings. They also reported that 20% of women regarded the fear of breast cancer as preventing mammography.

The fear of breast cancer hasn't always been reported as preventing early detection behaviors, but it is sometimes found to be a variable which affects screening behaviors positively and facilitates them (Kissal & Beser, 2011). Among all the researches conducted on breast cancer fear in Turkey, the one conducted by Yavan et al., (2010) on 188 women indicated that 21.3% of participants performed regular BSE; 33% of them had CBE; 8.5% of them had mammography in one year and 12.8% of them had mammography in longer than one year, while 78.7% of them didn't have any mammography screenings. On the other hand,

85.1% of participants stated that they had the fear of breast cancer resulting from the probability of being diagnosed with breast cancer or due to the existence of a breast cancer history in their family and other risk factors.

These researches indicate that fear of breast cancer is an important factor affecting attendance in screening programs and it affects early detection behaviors either positively or adversely. The number of researches conducted on the effect of breast cancer fear on early detection behavior is very limited in Turkey. If the way how early detection behaviors of women affect different levels of breast cancer fear is defined, then attempts planned to develop positive health behaviors of women will be led.

Materials and Methods

Study Design

This descriptive research was conducted between December 2013 and May 2014.

Setting and Sample

The research population included women aged 20 and older. In the scope of the research, sample selection method with pre-determined target population was used to determine the number of women to participate in the sampling process and the sample size was determined as 380 (Secginli, 2012). Women older than 20 years old who had neither breast lump nor breast cancer history and who accepted to participate in the research were directly included in the research without sampling.

Ethical consideration

Permission was received from Balcova Municipality (Izmir) for the research. Furthermore oral consent of women to participate in the research was taken after they were informed of the research by permission of Dokuz Eylul University Ethics Committee for Non-invasive Clinical Research. Before using the Breast Cancer Fear Scale, permission was also received from Selda Secginli, who conducted Turkish validation and reliability studies of the fear scale.

Instruments

Data has been collected using the Socio-Demographic Characteristics Data Form, the Breast Cancer Fear Scale, and the Assessment Form for

Early Detection Behaviors of Breast Cancer. Socio-Demographic Characteristics Data Form included five questions about age, education, marital status, income and social security information of the participants. Breast Cancer Fear Scale was developed by Champion et al., (2004). The Cronbach alpha coefficient of the scale is 0.91. This scale has eight articles and defines the relation between the breast cancers, mammography behavior and emotional reacts of women. It uses a 5-point Likert scale. The highest point of the scale is 40, while the lowest point is 8 (Champion et al., 2004). The scale has been adapted into Turkish by Secginli (2012). The Cronbach Alpha coefficient has been 0.90. In this research, the Cronbach Alpha coefficient for the scale was 0.85. Turkish Champion Breast Cancer Fear Scale included eight articles which were rated by statements of (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Partially agree and (5) Strongly agree. The highest point of the scale was 40, while the lowest point was 8. As for the evaluation of the points obtained from the breast cancer fear scale, 8-15 points represented for a low level of fear; 16-23 points represented for a medium level of fear and 24-40 points represented for a high level of fear (Secginli, 2012). Assessment Form for Early Detection Behaviors of Breast Cancer included three questions (frequency of performing BSE, having CBE and Mammography) to evaluate early detection behaviors of women for breast cancer.

Dependent and independent variables
Independent variable of the research included breast cancer fear points (Low, Medium, High) while dependent variable included the frequency of early detection behaviors (the frequency of performing breast self-examination, having clinical breast examination and mammography screening).

Data Analysis
SPPS 16.0 software was used for assessment of data. Number and percentage of women were divided by socio-demographic characteristics, and the multi-eye chi-square test was performed about the relation between early detection behaviors of breast cancer and fear levels.

Results

The average age of participants was 45.3 ± 14.4 and 45% of them were aged between 40 and 59. Moreover, 41.1% of participants were primary school graduate; 88.4% were married; 88.2% had social insurance; and 65% had higher expenses than their income (Table 1). 16.8% of 380 women involving in this research performed BSE regularly, while 13.9% of them had CBE. Among women aged 40 and older having mammography screening was 22.8% (Table 2).

Table 3 demonstrates participants' levels of fear of breast cancer. 5.8% of participants have low level of fear, while 11.6% have medium level of fear, and 82.6% have high level of fear.

A statistically significant difference was found between frequency of performing BSE ($X2 = 6.35$, $p = 0.04$), having CBE ($X2 = 7.40$, $p = 0.02$) and mammography ($X2 = 6.51$, $p = 0.04$) among women depending on their level of breast cancer fear. On these three types of behaviors (BSE, CBE, and mammography), the difference resulted from the group with medium level of breast cancer fear. Women with medium level of breast cancer fear performed BSE and had CBE and mammography more frequently than women with low and high level of fear (Table 4).

Discussion and Conclusion

In this research, it was found that 5.8% of women had low level of breast cancer fear, while 82.6% of them had high level of fear (Table 3). The findings of several researches have indicated that women's levels of fear of cancer may differ. Lee (2011) stated that 55.6% of women had medium level of breast cancer fear, while Garbers et al., (2003) reported that the fear factor rate among women was 44.6% which was one of the reasons why these women didn't perform early detection behaviors. In the research conducted by Adams et al., (2001) on American African women residing in three different areas, it was stated that the fear of getting breast cancer diagnosis and the fear of mammography screening negatively affected the frequency of having mammography. Another research suggested that women aged 20-65 had breast cancer fear which was resulted from the idea that breast cancer was a hurtful, fatal disease (Taha et al., 2012). Yavan et al. (2010) reported that 85.1% of women had the fear of breast cancer in Turkey. In this study, the reason why women had high level of breast cancer fear could have been resulted from their high level of seriousness perception.

Table 1. Distribution of Participants by Socio-Demographic Characteristics

Demographic Characteristics	n	%
Age		
Age group of 20-39	139	36.6
Age group of 40-59	171	45.0
60 and older	70	18.4
Education		
Illiterate	17	4.5
Literate	13	3.4
Primary school graduate	156	41.1
Secondary school graduate	43	11.3
High school graduate	100	26.3
University graduate	51	13.4
Marital Status		
Married	336	88.4
Single	44	11.6
Income		
Expenses are higher than the income	246	64.7
Expenses are equal to the income	130	34.2
Income is higher than expenses	4	1.1
Social Security		
Yes	335	88.2
No	45	11.8
Total	380	100

Table 2. Frequency of Early Detection Behaviors for Breast Cancer (n=380)

Early Detection Behaviors	Yes		No	
	n	%	n	%
BSE	64	16.8	316	83.2
CBE	53	13.9	327	86.1
Mammography*	55	22.8	186	77.2

* Women aged 40 and older were surveyed (n=241)
BSE: breast self-examination; CBE: clinical breast examination; n: Number of samples

Table 3. Levels of Breast Cancer Fear among Women (n=380)
n: Number of samples

Fear Levels	n	%
Low	22	5.8
Medium	44	11.6
High	314	82.6
Total	380	100

Table 4. Effect of Breast Cancer Fear on Breast Self-examination, Clinical Breast Examination, and Mammography

Early Detection Behaviors	Fear Level						X^2	p
	Low		Medium		High			
	n	%	n	%	n	%		
BSE								
Yes	2	9.1	13	29.5	49	15.6	6.35	0.04
No	20	90.9	31	70.5	265	84.4		
Total	22	100	44	100	314	100		
CBE								
Yes	3	13.6	12	27.3	38	12.1	7.40	0.02
No	19	86.4	32	72.7	276	87.9		
Total	22	100	44	100	314	100		
Mammography*								
Yes	3	17.6	12	41.4	40	20.5	6.51	0.04
No	14	82.4	17	58.6	155	79.5		
Total	17	100	29	100	195	100		

* Women aged 40 and older were surveyed (n=241)
BSE: breast self-examination; CBE: clinical breast examination; n: Number of samples

A statistically significant difference has been found between the fear of breast cancer and the frequency of performing BSE, having CBE and mammography screening (Table 4). Women with medium level of breast cancer fear performed BSE, had CBE and mammography more frequently than women with low and high level of fear. Similar to the results of present study, Zhang et al. (2012) determined that women with low and high level of breast cancer fear had CBE less frequently compared to women with medium level of fear. Talbert (2008) pinpointed that, increasing the fear-level leads to the less frequent early detection behaviors. Rızalar & Altay (2010) stated that the fear of breast cancer was among the reasons why women avoided BSE. Aydogdu Gordes (2012) also reported that women avoided BSE because of the fear of finding a lump in the breast during self-examination. However, in contrast with this study, Koc & Saglam (2009) stated that 51.4% of women performed BSE because they feared of getting breast cancer diagnosis.

The studies exploring the effect of breast cancer fear on mammography behaviors indicated that women with medium level of breast cancer fear had more mammography screening, while low and high level of fear adversely affected the behavior (Aydogdu Gordes, 2012; Champion et al., 2004; Schwartz et al., 2003; Zhang et al., 2012). Lyttle & Stadelman (2006) stated that fear of breast cancer was the reason why women avoided mammography screening. In the study conducted by Donnelly et al. (2013) it was reported that high level of breast cancer fear adversely affected the frequency of having mammography. Similar to

these findings, the research conducted by Aro et al., (2001) stated that 21% of women referred fear factor as the reason why they avoided mammography.

In contrast with the findings stated above, the research conducted by Miller et al., (2011) indicated that there was a significant relation with the fear of breast cancer and mammography screening, and furthermore high level of breast cancer fear increased mammography screening rates. Also, Polat & Ersin (2017) showed a higher mean score of Breast Cancer Fear in the women who performed breast cancer early-diagnosis behaviors. In this study, the reason why women with medium level of fear performed more early detection behaviors than women with high and low level of fear could be related to the fact that they were more motivated about early detection behaviors compared to women with high and low level of fear.

The reason why women with high level of breast cancer fear performed early detection behaviors less frequently than women with medium level of fear could be resulted from the fact that they feared of getting breast cancer diagnosis and finding a lump in their breasts. On the other hand, the reasons why women with low level of breast cancer fear avoided early detection behaviors could include low level of seriousness perception and high level of fatalism. Women having medium level of breast cancer fear may use more efficient methods to deal with fear compared to women with low level of fear and therefore the rate of early detection behaviors is higher among them.

The findings of this study indicated that the major part of women had a high level of breast cancer fear, and there was a statistically significant difference between the level of fear and early detection behaviors. Women with medium level of breast cancer fear performed more breast self-examination, had more clinical breast examination and mammography screenings.

Suggestion

1. In this research it is suggested that medical officials, especially public health nurses who are commonly in touch with people should play more active roles in detecting the women who don't seek screening, because early detection behaviors are performed by women inadequately,

2. Nurses should cooperate with local administrations for raising awareness on breast cancer among women and group trainings should be arranged,

3. Meetings should be arranged, where women having similar experiences can meet, in order to encourage them for early detection behaviors,

4. Factors resulting in high level of breast cancer fear should be determined and one-to-one consultancy services should be provided to deal with the fear, because high and low level of breast cancer fear prevent women from performing early detection behaviors,

5. Health training should be planned to increase seriousness perception of breast cancer among women who have low level of breast cancer fear.

Suggestions for researchers

First of all, levels of breast cancer fear and its effect on screening behaviors should be determined for the future studies and then required attempts should be planned accordingly because the fear of breast cancer is a factor which either prevents or facilitates early detection behaviors of women.

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