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The Effect of Breast Cancer Fear Levels of Female Seasonal Agricultural Laborers on Early-Diagnosis Behaviors and Perceptions of Breast Cancer

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ABSTRACT

The purpose of this study was to determine the effect of breast cancer fear levels of female seasonal agricultural laborers between ages 40 and 60 on breast cancer early-diagnosis behaviors and perceptions. This is a cross-sectional study. The data of the study were collected between February and September 2014 in Şanlıurfa, Turkey. A sample of the study group consisted of 350 women. The data were assessed by using SPSS 16.0 statistics package software. Descriptive statistics, t test, chi-square, and correlation analysis were used to analyze the data. Considering that breast cancer fear levels are effective on the breast cancer early-diagnosis behaviors and health beliefs, it can be recommended for the health care staff to carry out initiative works to reduce the fear levels.

KEYWORDS

breast cancer; female seasonal agricultural laborer; fear of breast cancer

Introduction

Breast cancer is ranked as the first among the cancer types seen in women, and as the second cause of cancer deaths after lung cancer in the world (Parkin, Bray, Ferlay & Pisani, 2005). Its early diagnosis increases one's chance of survival. Breast cancer, at the rate of 25% among all cancer types seen among women in the world, has been reported as 1.67 million in 2012 (International Agency for Research on Cancer [IARC], 2012). It is the most common cancer type seen among women in Turkey, its incidence rate was reported to be 40.7% in 100.000 in 2008, and this rate reached to 45.1% in 2011 (Ministry of Health, 2012).

Although breast cancer is known to be a disease that is seen in advanced ages, 25% of cases are observed in the age group of 40 to 49 years. In recent years, it has also been diagnosed at earlier ages (Liberman, Dershaw, Deutch, Thaler, & Lippin, 1993). Early diagnosis and treatment are of vital importance to prevent and reduce the cancer-related deaths in high-risk groups. The most common approaches known and implemented in the world are the screening programs (Karadeniz, 2008; Langhorne, Fulton, & Otto, 2007).

The studies on breast cancer have stated that women's early-diagnosis behaviors of breast cancer are insufficient (Champion, 1985, 1999; Fındık & Turan, 2004; Göçgeldi et al., 2008; Juon, Seung-Lee, & Klassen, 2003; Somunoğlu, 2009; Yi & Reyes-Gibby, 2002). According to the results of studies conducted among American women, the frequency of having regular breast self-examination (BSE) varies between 18% and 36%, and the frequency of annual mammography among women older than age 40 is between 20% to 50% (Champion, 1985, 1999). The rate of screening practices intended for the early diagnosis of breast cancer among women is also considerably low in Turkey. The rate of having regular BSE every month has been reported to vary between 10.2% and 24.5% (Fındık & Turan, 2004;

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Göçgeldi et al., 2008). In the study conducted by Somunoğlu (2009) to examine the opinions of women regarding the early-diagnosis interventions of breast cancer, it was found that 71.2% of women indicated the necessities of BSE, clinical breast examination (CBE), and mammography (MG) (Somunoğlu, 2009).

There are many reasons affecting women's attitudes and behaviors regarding the early diagnosis of breast cancer. These reasons include factors such as one's cultural beliefs, health/disease perception, family and environmental support, knowledge and risk perception regarding the disease, and one's belief in important practices for the early diagnosis of the disease, and so on (Champion & Scott, 1997; Rosenstock, Strecher & Becker, 1988). Additionally, women's perceptions and attitudes in relation to the health beliefs also play an important role in implementing early-diagnosis behaviors (Taylor, Taplin, Urban, White & Peacock, 1995). Therefore, the health protection and promotion behaviors of individuals have been explained by the developed models. These models are guiding for practices seeking to change the behaviors of women.

Health belief model (HBM) is the most commonly used model for increasing breast cancer early-diagnosis behaviors (Champion & Skinner, 2008; Gasalberti, 2002; Pender, Murdaugh & Parsons, 2006; Rosenstock et al., 1988). It is indicated in the literature that the most significant reagent of the model is the perceived barriers. The fear of breast cancer, which is among these barriers, is one of the factors that prevent the performance of preventive health behaviors (Ogedegbe et al., 2005; Remennick, 2006; Young & Severson, 2005). The studies have reported that the greatest reluctance concerning women's early-diagnosis behaviors is related to the fear of finding a lump and not knowing what to do (Alimoğlu et al., 2004; Ogedegbe et al., 2005; Young & Severson, 2005). In other words, positive or negative past-related knowledge and beliefs are effective on the regular implementation of early-diagnosis behaviors. Negative experiences of women during previous practices and the fear of being diagnosed with breast cancer affect the subsequent behaviors of some women (Alimoğlu et al., 2004). Past experiences related to preventive behaviors as well as fear are important in the implementation of these behaviors.

Female seasonal agricultural laborers (SALs) appear a significant risk group in Turkey in terms of working and living conditions and access to health services. Therefore, determination of the breast cancer early-diagnosis behaviors and the preventive factors in this group would be helpful in terms of leading the way for nursing interventions. In addition, because the number of studies indicating the effect of breast cancer fear levels of SALs on breast cancer early-diagnosis behaviors and perceptions is limited, this study would shed light for future studies.

Material and method

Population – sample

This descriptive study was conducted between February 2014 and September 2014 in the regions affiliated with Adıyaman No. 3 Zeynep Ana and Şanlıurfa No. 27 Hayati Harrani Family Health Centers. Although the study's population consisted of 2,967 women in the age group of 40 to 60 years living in these regions, the sample consisted of 350 women. Calculation of sample with finite population was used for the sample selection. The stratified sampling method was used to determine how many women would be included in the study from the regions affiliated with Family Health Centers (FHCs), and each FHC was accepted as a stratum. Female SALs older than age 40 years who were not diagnosed with breast cancer and could speak and understand Turkish sufficiently to communicate with the researcher were included in the study.

Data collection

Descriptive form of Champion's Health Belief Model Scale for Breast Cancer and Screenings (CHBMS) (Champion, 1984), Breast Cancer Fear Scale (Champion et al., 2004), and Mammography Self-Efficacy Scale (Champion, Skinner & Menon, 2005) were used to collect the data to be used in the study.

The descriptive form involved 15 questions including the information concerning sociodemographic characteristics and breast cancer early-diagnosis behaviors. This form included questions determining women's sociodemographic characteristics such as age, marital status, educational status and social security, and conditions such as having BSE, CBE and MG, causes for not having BSE and CBE, causes for not having MG, and getting the information regarding breast cancer and early-diagnosis methods. The Health Belief Model Scale was developed by Champion in 1984 and was revised in 1993, 1997, and 1999. It was adapted into Turkish by Gözüm and Aydın. The scale consists of a total of 52 items. The scale does not have a general total score. The total own score of each subscale is used. The scale is a Likert-type tool scored between 1 and 5. The scale's scoring is ranged from 1 point (*strongly disagree*) to 5 points (*strongly agree*). Higher scores obtained from subscales signify higher perceptions for that subscale (Gözüm, Karayurt & Aydın, 2004). Breast Cancer Fear Scale was developed by Champion et al. (2004). Cronbach alpha coefficient is 0.91 for the overall scale. Its validity reliability study was conducted by Seçginli in Turkey in 2012. The scale's Turkish version consists of eight items and the minimum score of the scale is eight whereas the maximum score is 40. The scale's scoring ranges from 1 point (*strongly disagree*) to 5 points (strongly agree). Higher scores indicate high breast cancer fear levels. Cronbach alpha coefficient is 90 (Seçginli & Nahçıvan, 2006). Mammography Self-Efficacy Scale was developed by Champion et al. (2005). Cronbach alpha coefficient is .87. Its validity reliability study in Turkey was conducted by Seçginli (2012). The scale's Turkish version consists of 10 items, and though the minimum scale score is 10, the maximum score is 50. The scale's scoring ranges from 1 point (*strongly disagree*)" to 5 points (*strongly agree*). Higher scores indicate high efficacies of participation in breast cancer screenings (Seçginli, 2012).

Dependent and independent variables

The study's dependent variables were breast cancer early-diagnosis behaviors, mean scores of Health Belief Model Scale, and MG self-efficacy mean scores. Its independent variable was mean score of Breast Cancer Fear Scale.

Data analysis

The data were assessed by using SPSS 16.0 statistical package program. Descriptive statistics, *t* test, and correlation analysis were used for the data analysis.

Ethical consideration

Approvals were received from Harran University Medical Faculty Ethics Committee, relevant institutions, and participants to conduct the study.

Results

The average age of the participants was 47.6 ± 6.37. Of the female seasonal agricultural laborers in Adıyaman 59.1% were illiterate, 92.3% were married, and 94.5% had social security. Of the female SALs in Şanlıurfa 90.0% were illiterate, 94.6% were married, and 90.8% had social security. Although 61.4% of the female SALs in Adıyaman did not have BSE, 38.6% had BSE. Although 83.1% of the female SALs in Şanlıurfa did not have BSE, 16.9% had BSE, and the difference between them was statistically significant ($\chi^2 = 18.15, p = .000$). Although 71.4% of the female SALs in Adıyaman stated that they did not have CBE, 28.6% stated that they had CBE, and though 86.9% of the female SALs in Şanlıurfa did not have CBE, 13.1% had CBE, and the difference between them was statistically significant ($\chi^2 = 11.21, p = .001$). Although 71.4% of the female SALs in Adıyaman did not have MG and 28.6% had MG, 83.8% of the female SALs in Şanlıurfa did not have MG and 16.2% had MG, and the difference between them was statistically significant ($\chi^2 = 6.98, p = .008$). Although 50.0% of the women stated

that they did not receive any information on breast cancer and early-diagnosis methods (BSE, CBE, MG) up to the present, 32.0% indicated that they wanted to receive related information from health care personnel (Table 1).

When the female SALs in Adıyaman were analyzed, the fear scale mean scores of women who had BSE were higher than women who did not have BSE, and the difference between them is statistically significant ($t = 2.439$, $p = .016$). The fear scale mean scores of women who had CBE were higher than women who did not have CBE, and the difference between them was statistically significant ($t = 3.099$, $p = .002$). The fear scale mean scores of women who had MG were higher than women who did not have MG, and the difference between them was statistically significant ($t = 3.276$, $p = .001$; Table 2).

When the effect of fear scale mean score of female SALs in Şanlıurfa on their early-diagnosis behaviors was analyzed, the fear scale mean scores of women who had BSE were higher than women who did not perform BSE, and the difference between them was not statistically significant ($t = .544$, $p = .587$). The fear scale mean scores of women who had CBE were higher than women who did not have CBE, and the difference between them was not statistically significant ($t = 1.082$, $p = .281$). The fear scale mean score of women who had MG were higher than women who did not have MG, and no statistically significant difference was found between them ($t = .810$, $p = .410$; Table 2).

When reasons of female SALs for not having BSE were examined, 29.7% of women stated that they did not know how to do it, 4.6% stated that they did not have the time, 7.7% stated that they did not think they would have breast cancer, 9.1% stated that they did not need it, 4.6% stated that they did not want to make the effort, 3.1% stated that they did not pay sufficient attention to their health, and 1.7% stated that they had more important problems. Results related to the reasons of female SALs for not having MG scans are shown in Table 3. The reasons for not having MG were specified as follows: not having the time (26.9%), not knowing MG (26.9%), not thinking they would have breast cancer (16.0%), not feeling the need (8.6%), not paying attention to their health (7.1%), absence of complaints (3.1%), presence of more important problems (2.6%), male doctors (1.7%), fear (1.1%), and not wanting to make the effort (0.3%).

There was a positive medium-level correlation between fear scale mean scores and perceived susceptibility mean scores of female SALs, and a significant correlation between them was found ($r = .683$, $p = .000$). There was a positive high-level correlation between fear scale mean scores and their perceived severity mean scores of the participants, and the correlation between them was significant ($r = .773$, $p = .000$). There was a positive low-level correlation between fear scale mean scores and health motivation perception mean scores of the women, and the correlation between them was significant ($r = .294$, $p = .000$). There was a positive low-level correlation between the fear scale mean score and BSE perceived benefit mean scores of the women, and the correlation between them was significant ($r = .349$, $p = .000$). There was a negative and very low-level correlation between fear scale mean scores and BSE perceived barrier mean scores of the women, and the correlation between them was significant ($r = -.133$, $p = .013$). There was a positive and very low-level correlation

Table 1. The Distribution of Female Seasonal Agricultural Laborers' Implementing Breast Cancer Early-diagnosis Behaviors Based on Cities.

	Adıyaman		Şanlıurfa		
Early-diagnosis Methods	*n*	%	*n*	%	Statistical Value
Having CBE					
Yes	85	38.6	22	16.9	$\chi^2 = 18.15$
No	135	61.4	108	83.1	$p = 0.000$
Having CBE					
Yes	63	28.6	17	13.1	$\chi^2 = 11.21$
No	157	71.4	113	86.9	$p = 0.001$
Having mammography					
Yes	63	28.6	21	16.2	$\chi^2 = 6.98$
No	157	71.4	109	83.8	$p = 0.008$
Total	220	100	130	100	

Note. BSE = breast self-examination; CBE = clinical breast examination.

Table 2. The Effect of Fear Scale Mean Scores of Female Seasonal Agricultural Laborers on Their Early-diagnosis Behaviors Based on Cities.

	Adıyaman	Şanlıurfa	Statistical Value	
Early-diagnosis Methods	*M* ± *SD*	*M* ± *SD*	*t*	*p*
Having BSE				
Yes	28.46 ± 9.79	29.00 ± 8.81	−0.236	0.814
No	25.15 ± 9.82	27.91 ± 8.45	−2.361	0.019
	$t = 2.439$, $p = .016$	$t = .544$, $p = .587$		
Having CBE				
Yes	29.63 ± 25.14	30.17 ± 9.50	−0.207	0.837
No	25.14 ± 9.78	27.78 ± 8.32	−2.394	0.017
	$t = 3.099$, $p = .002$	$t = 1.082$, $p = .281$		
Having mammography				
Yes	29.80 ± 9.41	29.47 ± 9.36	0.141	0.888
No	15.07 ± 9.81	27.83 ± 8.32	−2.473	0.014
	$t = 3.276$, $p = .001$	$t = 0.810$, $p = .410$		

Note. BSE = breast self-examination; CBE = clinical breast examination.

between the fear scale mean scores and BSE self-efficacy perception mean scores of the women, and the correlation between them was significant ($r = .173$, $p = .001$). There was a negative and very low-level correlation between fear scale mean scores and MG perceived benefit mean scores of the women, and the correlation between them was not significant ($r = -.098$, $p = .067$). There is a positive and very low-level correlation between the fear scale mean scores and MG perceived barrier mean scores, and the correlation between them was not significant ($r = .059$, $p = .268$). There was a positive and very low-level correlation between fear scale mean scores and Mammography Self-Efficacy Scale mean scores of female SALs, and the correlation between them was significant ($r = .203$, $p = .000$; Table 3).

Discussion

It was found that more than one half of the female SALs participating in the study in cities of Adıyaman and Şanlıurfa did not have BSE, CBE, and MG, and the difference between them was statistically significant (Table 1). Although one half of the women participating in the study stated that they did not receive information on breast cancer and early-diagnosis methods (BSE, CBE, MG) up to the present, 32% of them stated that they were willing to receive information from medical personnel. Additionally, lack of knowledge is the first reason of not implementing early-diagnosis behaviors.

The number of studies conducted on female SALs concerning breast cancer early-diagnosis behaviors is limited. In the study conducted by Şimşek (2012) on female SALs, it was stated that 87.2% of women did not have BSE (Şimşek, 2012). Similarly, there are also studies indicating that the breast cancer early-diagnosis behaviors of poor women like female SALs were insufficient (Yi & Reyes-Gibby, 2002; Bastani et al., 1995; Makuc, Breen & Freid, 1999). In the study of Yi & Reyes-Gibby (2002), they reported that 18.6% of women regularly had BSE every month, the rate of having CBE was 48.7% and the rate of having MG was 32.8%. In the study of Kalichman, Williams, and Nachimson (2000), they reported that 45.0% of women regularly had breast examination every month. In another study, it was found that though the rate of having MG among women was 21.0% in the last one year, the rate of having MG after a 9-month follow-up period was 23.0% (Bastani et al., 1995). Makuc et al. (1999) reported that the rate of having MG among women in the age group of 50 to 64 years in the last one year was 48.4%, whereas this rate was 73.6% among women who were not in poor circumstances. Takakuwa, Ernst, Weiss, and Nick (2000) found that women with high income had higher rate of preventive health behaviors such as breast examination and MG compared to women with low income. It was reported by a study conducted among Thai women that 25.0% of 145 women regularly had BSE and the probability of performing BSE was higher among women having high susceptibility for breast cancer (Jirojwong, Maclennan, & Manderson, 2001). Fontana and Bishhoff (2008) indicated that one of the most significant determinants of having CBE and MG among poor women was the income level,

Table 3. The Correlation Between Fear Levels and Health Beliefs of Female Seasonal Agricultural Laborers.

Pearson Correlation	Fear	Susceptibility	Severity	Health Motivation	BSE Benefits	BSE Barriers	BSE Self-Efficacy	Mammography Benefits	Mammography Barriers	Mammography Self Efficacy
Fear	1									
Susceptibility	.683**	1								
Severity	.773**	.684**	1							
Health motivation	.294**	.341**	.213**	1						
BSE benefits	.349**	.338**	.260**	.493**	1					
BSE barriers	−.133*	−.200**	−.014	−.335**	−.482**	1				
BSE self-efficacy	.173**	.167**	.039	.355**	.460**	−.538**	1			
Mammography benefits	−.098	−.086	−.037	.169**	.132*	.041	.064	1		
Mammography barriers	.059	.049	.167**	−.286**	−.195**	.336**	−.407**	−.189**	1	
Mammography self-efficacy	.203**	.198**	.045	.547**	.398**	−.399**	.441**	.156**	−.421**	1

Note. BSE = breast self-examination.
*$p < .05$. **$p < .01$.

and there was a strong correlation between increasing income levels and exhibiting these behaviors (Fontana & Bischoff, 2008).

It is known that nomadic lifestyle makes it difficult to access follow-up–based and long-term treatment services (such as cancer screening, etc.), and even many SALs delay receiving health services until they return to their permanent addresses (Arcury & Quandt, 2007; Weathers & Garrison, 2004). Hard working conditions, poverty, and migration movements of female SALs also increase the incidence rates of diseases and prevent access to information/services. Moreover, nomadic lifestyle, economic insufficiencies, language and cultural differences, not being registered and the limited number of health institutions in the regions they work, geographical and social isolation, inadequacy of transportation vehicles, and low health perception may also be thought to be restricting the use of medical services by SALs and therefore preventing them from implementing behaviors such as having CBE and MG.

In this study, it was determined Breast Cancer Fear Scale mean scores of the women who performed breast cancer early-diagnosis behaviors were higher (Table 2). Previous studies stated that fear was effective on breast cancer early-diagnosis behaviors (Bailey, 2000; Gördes, 2011; Karabaş, 2013; Lamyian, Hydarnia, Ahmadi, Faghihzadeh, & Aguilar-Vafaie, 2007; Lyttle & Stadelman, 2006). Similarly, Ersin, Gözükara, Polat, Erçetin, and Bozkurt (2015) found the Breast Cancer Fear Scale mean scores of women who had MG were higher than the scores of those who did not have MG (27.27 ± 9.01, 21.96 ± 9.59, respectively) and the difference between them was statistically significant ($p < .05$). In their study, Karabaş (2013) reported that 74.8% of women who were afraid of having breast cancer had BSE whereas 74.7% of those who were not afraid did not have BSE, and no statistically significant correlation was found between having fear of having breast cancer and having BSE ($p = .64$). The fear of being diagnosed with breast cancer has not been found to be a significant barrier for the participation of Arab women in screenings (Donnelly et al., 2013). On the other hand, fear has been found motivating for Israeli Arab women to have BSE (Azaiza & Cohen, 2008). In a study conducted in Turkey, no statistically significant difference was determined between the groups who had and did not have MG in terms of breast cancer fear scores (Seçginli, 2012).

Fear arises out of knowing cancer as a serious disease, and considering and perceiving cancer as equivalent with death in numerous communities. In this study, a high Breast Cancer Fear Scale mean score of the women who had BSE, had CBE and had MG was a expected result. Considering that fear is a barrier and a facilitator in terms of implementing breast cancer early-diagnosis behaviors (Glanz, Rimer, & Viswanath, 2008), it was observed that fear may be a facilitator factor on early-diagnosis behaviors in accordance with the results obtained from the study.

It may be asserted that women's knowledge on breast cancer and their opinions on the challenging processes in the treatment of breast cancer lead to increasing fear of breast cancer and women's fear levels affect preventive behaviors such as having CBE and having MG.

It was found in this study that the participants' fear levels were effective on their health beliefs (Table 3), and number of studies indicating the effect of breast cancer fear levels of female SALs on their health beliefs has been limited. In the study of Ersin et al. (2015), a statistically significant correlation was determined between breast cancer fear and perceived susceptibility, perceived severity, and health motivation perception. Perceived susceptibility is a powerful perception that is effective on people in terms of adopting healthy behaviors. Therefore, the positive effect of fear on perceived susceptibility would increase the probability of implementing health behaviors. Moreover, increasing breast cancer fear levels of women enables them consider breast cancer a serious matter and leads to concerns about the harmful consequences of breast cancer. This situation appears as an important determinant in implementing breast cancer early-diagnosis behaviors for women. In addition, a significant correlation found between breast cancer fear and health motivation perception may be an indicator that the breast cancer fear levels motivate women for implementing breast cancer early-diagnosis behaviors. A previous study revealed that the perceived benefit was effective on fear (Champion et al., 2004). This situation shows that the breast cancer fear levels of female SALs have a significant effect on perceiving the benefit regarding early-diagnosis behaviors. High perceived benefits would be effective in

implementing health behaviors. Consequently, cancer's negative effects would considerably decrease. It was observed in this study that the breast cancer fear levels of female SALs reduced the BSE perceived barrier mean scores. Decreasing perceived barriers are thought to affect positively developing the breast cancer early-diagnosis behaviors. Moreover, a previous study showed that the perceived self-efficacy was effective on fear (Champion et al., 2004). Breast cancer fear level made us think to have an effect increasing individual competences of female SALs in terms of implementing breast cancer early-diagnosis behaviors.

In the study of Ersin et al. (2015), a statistically significant correlation was found between breast cancer fear and MG perceived benefit. However, no significant correlation was found between breast cancer fear and MG perceived barrier. The breast cancer fear levels of female SALs were observed to reduce the perceptions related to the positive results and benefits of MG. It is reported in literature that women are worried that they will be exposed to radiation during MG (Champion & Scott, 1997; Fındık & Turan 2004). Therefore, this result may affect negatively the implementation of preventive health behaviors. In addition, the fear of having breast cancer is a barrier and a facilitator for implementing health behaviors (Glanz et al., 2008). The fact that the breast cancer fear levels of female SALs increased their MG perceived barrier mean scores in this study may be an indicator that breast cancer fear level is a barrier for implementing early-diagnosis behaviors.

There was a positive and very low-level correlation between participants' breast cancer fear level mean scores and their mean scores of Mammography Self-Efficacy Scale, and the correlation between them was significant (Table 3). This result showed that the breast cancer fear levels of female SALs increased their MG self-efficacy perception mean scores. The obtained result made us think that the breast cancer fear levels of female SALs were effective on women's self-efficacy for having MG.

Conclusion and recommendations

It was determined that female SALs did not implement nor perform breast cancer early-diagnosis behaviors to a large extent. Moreover, the fear levels of female SALs were effective on the breast cancer early-diagnosis behaviors and health beliefs.

Women's breast cancer fear levels may be reduced by emphasizing the importance of preventive health services in terms of breast cancer within the scope of training activities. Appropriate conditions (access to hospitals through transportation systems, providing health care services on fields, etc.) may be provided for regularly implementation of breast cancer early-diagnosis behaviors (CBE, MG) within the scope of ambulatory health care services. Owing to trainings to be provided for women concerning breast cancer early-diagnosis behaviors, their fear levels may be reduced, their perceived susceptibility, perceived severity, health motivation, BSE benefits, and MG benefits regarding breast cancer may be increased, and their BSE perceived barriers and MG perceived barriers may be reduced.

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