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Self-efficacy in Using Mammography and Fear of Breast Cancer in Women

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ABSTRACT

Breast cancer is the most common cancer among women. Self-efficacy and fear are effective factors in using mammography in women. Considering the high rate of breast cancer and the low number of women referring to mammography, the present study was performed to determine the relationship between self-efficacy in using mammography and fear of breast cancer. This cross-sectional study was conducted on 86 women over the age of 40 years referring to three comprehensive health centers in Khalkhal, Northwest of Iran between December 2020 and May 2021. Data collection tools were a demographic questionnaire, Sherer's General Self-Efficacy Scale and Champion's Fear of Breast Cancer Scale. Data were analyzed by SPSS (version 20) and Pearson correlation coefficient. The mean age of the participants was 47.47±6.77 years. The mean score of self-efficacy was 59.71±6.03 (46-71) and the mean score of fear of breast cancer was 24.34±7.11 (8-40). There was a significant relationship between self-efficacy and fear score ($p<0.001$). Self-efficacy is recognized as an influential factor in the regular implementation of breast cancer screening behaviors.

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Introduction

Breast cancer is the most common cancer among women and one of the leading causes of death among non-communicable diseases (1-3). The prevalence of breast cancer is increasing in different parts of the world (4-5). It affects more than 1.5 million women worldwide each year (6). Breast cancer is the most common malignancy among Iranian women that accounts for 42.53% of all malignancies in Iran (7).

Breast cancer is a progressive malignant disease, which can easily metastasize (8), but it is detectable in the early stages. It is more distinct than other types of cancer (9). In developing countries, delayed diagnosis is due to a lack of awareness, especially about the warning signs of breast cancer (10-11). Other causes of delayed diagnosis in developing countries include fear of pain during screening, fear of disease, gender inequality, lack of screening tests and infrastructure, low literacy and low-income levels (12). Lack of awareness about breast cancer prevents women from attending screening centers, breast self-examination (BSE) and mammography, thus delaying diagnosis and treatment, which inadvertently leads to high morbidity and mortality (13-14).

Screening is an effective way to reduce breast cancer that increases recovery and quality of life and reduces mortality (15). The screening methods are potentially important to reduce breast cancer mortality; these methods include breast self-examination, clinical breast examination and mammography with aim of early detection (16). In fact, mammography is the only way to detect intangible cancer, which is used at least two years before the clinical diagnosis (17-18). The American Cancer Society

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recommends starting mammography at age 40 (19).

The results of studies have shown that self-efficacy and fear are the effective factors in women to perform mammography (20-22). Engaging in a health behavior depends on these two factors. Lower levels of self-efficacy are associated with greater fear of breast cancer, which ultimately leads to less use of mammography (23-25). Self-efficacy represents an internal mental process, which is defined as "the level of confidence in one's ability to control behavior" and plays a key role in changing and maintaining healthy behaviors (26). Self-efficacy is associated with the use of BSE and the use of mammography (20, 27-29). It is one of the important constructs involved in screening and health-related behaviors (30). Previous studies in Iran have reported that perceived inability of women to request mammography referrals from their physicians is a barrier to screening (31-32). In addition, no regular routine care is performed to assess breast health in Iran (21).

Fear is another factor in reducing to do breast cancer screening behavior (25). Fear means a negative emotional response through perceived threat, combined with a low understanding of performance benefits and a low understanding of self-efficacy (24). Moderate levels of fear of breast cancer, combined with high self-efficacy, lead to engaging in health behaviors; while low and high fears lower motivation levels and increase screening avoidance (28).

Regarding to the high rate of breast cancer and low referral of women for mammography, the present study was performed to assess the relationship between self-efficacy in using mammography and fear of breast cancer in women referred to the comprehensive health centers in Khalkhal.

Materials and Methods

This cross-sectional study was conducted in Khalkhal, Northwest of Iran. The research population consisted of all women over the age of 40 years who referred to three comprehensive health centers in Khalkhal from December 2020 until May 2021. The sample size was determined based on the study was done by Tolma et al. (2006) to estimate the average self-efficacy with an accuracy of 2.5 points, 95% confidence interval and considering a standard deviation of 15 for self-efficacy (33). The sample size was calculated as 86 women, which were selected using random sampling method. Inclusion criteria were women aged over 40 years, no history of breast cancer, no pregnancy and lactation at the time of sampling and being literate and fluent in Persian. Exclusion criteria were unwillingness to participate in the study.

Data collection tools included threequestionnaires including demographic questionnaire, Sherer's Self-Efficacy Scale and Champion's Fear of Breast cancer Scale. Demographic characteristics including age, marital status, occupation, number of children, income level, education, history of breast disease and performing mammography in the last two years. Sherer's General Self-Efficacy Scale developed by Sherer in 1983 (34). Barati et al. (1997) assessed the validity and reliability of the Sherer's scale in Iran with a Cronbach's alpha coefficient of 0.79. This scale has 17 questions, and is scored with a 5-point Likert scale. Questions 2, 4, 5, 6, 7, 10, 11, 12, 14, 15, 16 and 17 are scored in reverse, with a total score was 17-85, and a higher score indicating higher self-efficacy (35).

The third part of the questionnaire includes Champion's Fear of Breast Cancer Scale, which includes eight questions that determine the relationship between women's emotional responses to breast cancer and mammography behavior. The breast cancer fear questionnaire was used as a means of screening or trying to correct fear through interventions, and is scored on a five-point Likert scale. The overall score is 8-40, and a higher score indicating greater fear of breast cancer. Low fear is classified as 8-15, medium fear as 16-23 and high fear as 24-40. Champion developed the Breast Cancer Fear scale in 2004 (36). Ghahramanian et al. (2016) validated it in Iran with an alpha Cronbach coefficient of 0.86 (37).

To collect data, at first, the researcher introduced herself to the study subjects, and then explained the purpose of the study and ensured the subjects about the confidentiality of the data. Then, the study subjects completed and signed a written consent form if they wished to participate in the study. So, that they could leave the study at any time they wished.

A total of 105 questionnaires were completed, 19 of which were excluded from the final review due to incomplete completion of some questions, and finally 86 questionnaires were statistically analyzed. Data were analyzed by SPSS statistical software (version 20). Descriptive frequency, mean and standard deviation statistical methods were used to evaluate self-efficacy and fear of breast cancer. In addition, Pearson correlation coefficient was used to identify the relationship between self-efficacy and fear.

Results

The frequency distribution of demographic characteristics showed that the mean age of the participants was 47.47± 6.77 years. Most of them had a university degree and were employees. The majority of the participants had monthly incomes above three million Tomans per month. In addition, 69.8% of participants were premenopausal, 10.5% had a history of breast disease and 72.1% had no history of performing mammography in the previous 5 years (Table 1).

The mean score of self-efficacy was 59.71 and the mean score of fear was 24.34. Based on fear score classification; nine women (10.5%) had low fear, 32 women (37.2%) had moderate fear and 45 women (52.3%) had high fear (Table 2).

There was a significant relationship between self-efficacy and fear score ($p<0.001$) (Table 3).

Table 1. Demographic characteristics of the participants in the study

Variables	Frequency (%)
Women's education	
Diploma and less	40 (46.5)
College education	46 (53.5)
Women's occupation	
Employee (continuous monthly salary)	49 (57)
Housewife (not receiving a monthly salary)	37 (43)
Spouse's job	
self-employment (non-continuous monthly salary)	46 (53.5)
Employee (continuous monthly salary)	40 (46.5)
The monthly income of the family	
Less than 2 million	8 (9.3)
2-3 million	17 (19.8)
More than 3 million	61 (70.9)
Experience of menopause	
Yes	26 (30.2)
No	60 (69.8)
History of previous breast disease problems	
Yes	9 (10.5)
No	77 (89.5)
History of mammography in the last 5 years	
Yes	24 (27.9)
No	62 (72.1)

Table 2. Mean score of self-efficacy and fear in women

Variables	Mean± SD
Total self-efficacy score	59.71±6.03
Fear score	24.34±7.11

Table 3. The relationship between self-efficacy and fear in women

The level of fear	Mean Difference	P-Value
Weak		
low	4.62	0.148
High	8.70	0.001
Intermediate		
low	-4.62	0.148
High	4.07	0.005
High		
low	-8.70	0.001
High	-4.07	0.005

Discussion

The findings of the present study showed that there was a significant relationship between fear and self-efficacy, so that the rate of self-efficacy decreases with increasing fears. Findings from the present study showed that fear can be a barrier to performing mammography. The reason for this fear may be the need for a physical examination of the body in screening mammography.

The results of Melvin et al.'s (2016) study also showed that women with high self-esteem were more likely to have mammography than women with low self-esteem (38). The study by Shirzadi et al. (2020) showed that different barriers perceived at different levels (individual, intrapersonal, health and social systems) play an effective role in women's decision-making to participate in breast cancer screening program, which reflects the cultural aspect. Barriers are perceived in different societies and countries (39). The qualitative study by Khodayarian et al. (2016) showed that some psychological factors are considered as the obstacles for women to perform mammography. These factors include embarrassment, fear of the diagnosis of cancer, underlying diseases, the need for having a companion, internalizing the experiences of others and misunderstanding about mammography and maladaptive coping patterns like avoidance and denial, religious beliefs and belief in fate (40).

Women with higher self-efficacy are more likely to perform mammography (29). Also, Ahmadian et al. (2012) in their study found a significant relationship between women's self-efficacy and mammography behavior (41). Moreover, Russel et al. (2007) reported that women with higher stages of decision-making for breast cancer screening had higher self-efficacy (42).

Various reasons have been mentioned for low breast cancer screening behaviors in Iran, including: harmful radiation during mammography (43), no problem in the breast (44-45), lack of feeling the need for performing mammography, no advice by the physician to perform mammography (31-32, 46), no opportunity for doing mammography (43), neglecting their health status (46), lack of social norms (32), friends and acquaintances didn't perform mammography, lack of knowledge about the nature of the disease (10), no trust in health policies and instructions (48), limited access to mammography equipment (49), traffic related problems to the mammography center (44, 48) and fear of pain during performing mammography (50).

Self-efficacy had the most direct effect on mammography behavior. Some studies showed that self-efficacy is an important factor in performing mammography (50-51). The higher self-efficacy leads to the greater ability to control and reduce barriers and perform health-related behaviors (52). Self-efficacy is recognized as a powerful and influential factor

in the regular implementation of breast cancer screening behaviors (53-54). In fact, if a person has a mental belief about a disease and its harmful effects, the occurrence of preventive behaviors will increase. The results of other studies support this view empirically (55-57). The limitations of the study include the small sample size and the descriptiveness of the study, which affects the generalizability of the results.

Conclusion

The results of the present study showed that the higher the self-efficacy, the lower the fear of breast cancer and better a person is able to control and reduce obstacles and perform breast cancer screening behaviors. Therefore, it is suggested to hold training and counselling programs for increasing self-efficacy.

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Conflicts of interest

The authors declared no conflicts of interest.

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