

The Most Critical Barriers in Conducting Mammography Screening among the Iranian Women in Arak in 2014

Somaye Dezhm¹, Nasrin Roozbahani^{2*}, Mahboobeh Khorsandi³

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Abstract

Aim: Regarding the high prevalence of breast cancer among the Iranian women and lack of attention to mammography screening, planning the behavior promotion interventions would be practicable through determining the barriers of conducting mammography screening behavior. The purpose of this study was determining the barriers of conducting breast cancer mammography screening among the women over 40 years.

Methods: The participants of this cross-sectional study consisted of 294 over 40-years old women in Arak-Iran who completed the questionnaire of mammography barriers. The questionnaire used was based on Champion's revised Health Belief Model Scale (CHBMS). Sampling was based on the population. All hygiene officers of the Health and Cure Centers of Arak were asked to randomly select some samples among the women over 40 years. In this way, all the city's areas were covered. Inclusion criteria were women over 40 years, not already suffering from breast cancer, or having a family member (mother or sister) affected by the disease.

Findings: The findings revealed that the high cost is the main barrier (20.1%) of mammography screening among the population. Among the other reasons, one may point to fear of discovering a cancer mass (9.5%), painful procedures of mammography (7.1%), not knowing the mammography centers (6.5%), and shame of undressing for mammography (5.1%). Comparing the mean scores of the barriers based on the individual characteristics showed that the barriers of mammography screening according to education level ($p=0.0001$), insurance status ($p=0.02$), and economic status ($p=0.0001$) have significant difference.

Conclusions: Regarding the barriers of mammography screening among the Iranian women, it is necessary that authorities apply solutions to reduce costs, and promote women's knowledge about the importance of early diagnosis of breast diseases through screening plans, especially mammography screening.

Keywords: Barriers, Breast cancer, Cost, Mammography, Screening

1. M.Sc. Student, Department of Health Education, Faculty of Health, Arak University of Medical Sciences, Arak, Iran
Email: Sdezham@arakmu.ac.ir

2. Assistant Professor, Department of Health Education, Faculty of Health, Arak University of Medical Science, Arak, Iran
Email: Roozbahani@arakmu.ac.ir

3. Associate Professor, Department of Health Education, Faculty of Health, Arak University of Medical Science, Arak, Iran
Email: khorsandi@arakmu.ac.ir

Introduction

Breast cancer is one of the most prevalent and fatal cancers among the world women [1]. It is estimated that one out of every nine women would be affected by this type of cancer [2, 3]. The most common range of the death age as a result of this disease is 40-49 in the developing countries including Iran whose women are infected by breast cancer ten years earlier than their European counterparts [4-6]. Mammography and physical examination are complements of each other as the standard screening methods, and are necessary for the success of screening plans. 35-50% of breast cancers are diagnosed using mammography. Mammography is the best method of primary breast cancer diagnosis at earlier stages in many countries [7]. On this basis, activities promoting mammography behavior can be applied as an important instrument for prevention of the second type disease [8]. With regard to the ever increasing rate of breast cancer in Iran and late referring to physicians, it is necessary to concentrate on the problem in order to promote and enhance cancer control behavior. Seemingly, some barriers affect the reduction of tendency to mammography behavior. In the previous studies, the most barriers have been introduced as follows: Lack of sufficient information about breast cancer and its screening methods, lack of insurance, fear of pain in mammography, fear

of diagnosing a serious disease, anxiety, stress, high cost, and lack of mammography propose by the physician [9-11].

Cultural differences may create different mammography barriers in various countries. For instance, the main barriers among the Spanish women have been reported as lack of their participation in mammography screening, fear of diagnosing a serious disease, and being time consuming [6]; while the barriers in the United States are feeling no necessity to conduct mammography because of having no symptoms, believing in not being exposed to the disease, worrying about the danger of mammography rays, and fear of pain during the mammography [12].

This study is necessary in Iran because mammography screening has not been welcomed yet generally, and the screening is affected by cultural, economic and social differences. The present study has been conducted to determine breast cancer mammography screening among the Iranian women.

Methods

This cross-sectional study aimed at determining the most crucial barriers in mammography screening in Iranian women in 2014.

Sample and setting

According to the pilot study and using a .95

confidence level, the sample size was decided upon as 300. Sampling was based on the population. All hygiene officers of the Health and Cure Centers of Arak city were asked to select some samples among the women over 40 years randomly. In this way, all the city's areas were covered. Inclusion criteria were women over 40 years, not already suffering from breast cancer, or having a family member (mother or sister) affected by the disease. Among the samples, six women were Afghans who were excluded from the study, and the final sample population was 294 women.

Instruments

The questionnaire used was based on Champion's revised Health Belief Model Scale (CHBMS). The instruments were translated using the Banvill's method in order to develop a culturally equivalent questionnaire [13]. Two bilingual experienced health educators translated the questionnaire into Persian, and two other bilingual health educators retranslated it into English again (without access to the original version) independently. The two versions were then compared, evaluated and modified to reconcile any differences observed. A panel consisted of 10 Iranian experts in health education and breast cancer was asked to evaluate the clarity and linguistic appropriateness of the translated

questionnaires (content validity). The panel members were further asked to evaluate the pilot instrument for the appropriateness and relevance of the items. They were then requested to evaluate item wording and response format. Next, the edited version of the questionnaire was piloted with a group of 40 women to evaluate item clarity and response variance, and to estimate its reliability. Examination of the frequency distributions indicated that the full range of responses was being used for the questionnaire items. It consisted of demographic data (age, education, marital status, insurance status and income), and 10 items were related to mammography behavior barriers; for example, "Mammogram is painful". The scores related to barriers were measured based on the Likert's five-scale spectrum from "perfectly agree" to "perfectly disagree". The Cronbach's alpha coefficient was 0.74.

The questionnaires were completed during a face-to-face interview. The approximate time required to complete the instrument was 40 minutes.

Data Analysis

Data were analyzed using SPSS 20. Descriptive statistics were used to describe the samples, and ANOVA was applied to analyze the data and answer the research questions.

Ethical considerations

The study was approved by the Research Ethics Committee at Arak University of Medical

Sciences in line with the commitments of the Helsinki Health Study Protocol. Data were collected with the consent of all participants.

Table 1: Distribution of socioeconomic characteristics of the study population & mean and standard deviation of barriers

Variables		Number	%	Mean and standard deviation of barriers ■	P
Age (year)	40-49	185	62.92	28.3 ± 5.1	0.89
	50-59	109	37.07	28.2 ± 5.5	
Marital status	Married	271	92.2	28.1 ± 5.3	0.22
	Single	4	1.4	30.2 ± 3.6	
	Divorced	3	1	28.5 ± 0.7	
	Widowed	16	5.4	30.1 ± 3.7	
Education level	Illiterate	45	15.3	31.3 ± 3.5*	0.001
	Primary	97	33	29.1 ± 4.6	
	Guidance	48	16.3	27.1 ± 5.7	
	High School	67	22.8	27.8 ± 4.7	
	Academic	37	12.6	24.4 ± 6.4*	
Economic status (per capita income)	Lower than 70 dollars	21	7.19	31 ± 5*	0.001
	70-100 dollars	27	9.24	29.9 ± 4.4	
	100-130 dollars	77	26.36	29.2 ± 4.6	
	Over 130 dollars	167	57.19	27.1 ± 5.4*	
Insurance status	Insurances	266	90.8	31.3 ± 2.9	0.002
	Non-insurance	27	9.2	28 ± 5.3	

■ Range 10-50
* Post Hoc p<0/05

Results

Descriptive statistics of the study variables are reported in Table 1. Most of the under study population (60.2%) did not conduct mammography, and 30% conducted it just once. Comparison of the mean scores of the mammography screening barriers based on the individual characteristics revealed no significant difference concerning mammo-graphy behavior in terms of age (p=0.89) and marital status (p=0.22); however, there appeared a meaningful difference based on the education level (p<0.0001). According to Post Hoc test, the most differences were

rooted in being illiterate and having academic studies (p<0.0001). Table 1 shows the differences of other groups. The samples, insurance status was also important (p=0.02) in prevention of mammography. The problem was more obvious among those who lacked insurance. Also there was a meaningful difference (p<0.0001) concerning the economic status and mammography screening so that the higher income, the lower understanding of the barriers. According to the Post Hoc test results, the maximum difference (p=0.007) appeared between the individuals with per capita income of US\$70

(2000000 Rials) and those with US\$130 (4000000 Rials). Individuals with per capita income of over US\$ 130 were significantly different from all the three groups. Table 2 shows the frequency distribution of

mammography behavior barriers among the research participants. As you see, the most important barriers of mammography are being costly (20.1%), and fear of discovering cancer mass (9.5%).

Table 2: Frequency distribution of mammography behavior barriers among the research participants

Mammography conducting barriers	Group	Completely agree	Agree	No comment	Disagree	Completely disagree	Total
		Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
Fear of finding a cancer mass in breast	Conducted mammography	9 (7.6)	57 (47.9)	14 (11.8)	34 (28.6)	5 (4.2)	119 (100)
	Not conducted	19 (10.19)	91 (52.0)	21 (12.0)	39 (22.3)	5 (2.9)	175 (100)
Shame of undressing	Conducted mammography	3 (2.5)	37 (31.1)	15 (12.6)	52 (43.7)	12 (10.1)	119 (100)
	Not conducted	12 (6.9)	58 (33.1)	22 (12.6)	73 (41.7)	10 (5.7)	175 (100)
Being painful	Conducted mammography	10 (8.4)	33 (27.7)	6 (5.0)	57 (47.9)	12 (10.1)	118 (99.2)
	Not conducted	11 (6.3)	33 (18.9)	93 (53.1)	35 (20.0)	3 (1.7)	175 (100)
High costs	Conducted mammography	20 (16.8)	43 (36.1)	18 (15.1)	31 (26.1)	7 (4.2)	117 (98.3)
	Not conducted	39 (22.3)	59 (33.7)	60 (34.3)	16 (9.1)	1 (0.6)	175 (100)
Husband's disagreement	Conducted mammography	4 (3.4)	3 (2.5)	28 (23.5)	64 (53.8)	19 (16.0)	119 (100)
	Not conducted	3 (1.7)	16 (9.1)	68 (38.9)	81 (46.3)	7 (4.0)	175 (100)
Being employed and lack of enough time	Conducted mammography	1 (0.8)	7 (5.9)	25 (21.0)	64 (53.8)	22 (18.5)	119 (100)
	Not conducted	3 (1.7)	10 (5.7)	56 (33.0)	97 (55.4)	7 (4.0)	173 (98.9)
Lack of breast cancer symptoms	Conducted mammography	1 (0.8)	18 (15.1)	22 (18.5)	60 (50.4)	18 (15.1)	119 (100)
	Not conducted	11 (6.3)	69 (39.4)	30 (17.1)	60 (34.3)	3 (1.7)	173 (98.9)
Believing in breast self-examination	Conducted mammography	1 (0.8)	15 (12.6)	16 (13.4)	72 (60.5)	14 (11.8)	118 (99.2)
	Not conducted	5 (2.9)	51 (29.1)	51 (29.1)	64 (36.6)	3 (1.7)	174 (99.4)
Not knowing the health care centers' address	Conducted mammography	4 (3.4)	10 (8.4)	15 (12.6)	73 (61.3)	17 (14.3)	119 (100)
	Not conducted	15 (8.6)	76 (43.4)	26 (14.9)	54 (30.9)	4 (2.3)	175 (100)
Lack of tendency because of small size breasts	Conducted mammography	3 (2.5)	20 (16.8)	76 (63.9)	20 (16.8)	0(0)	119 (100)
	Not conducted	6 (3.4)	21 (12.0)	41 (23.4)	95 (54.3)	12 (6.9)	175 (100)

Discussion

Since breast cancer is the most prevalent type of cancer among the Iranian women, and mammography is the most crucial screening

method for breast cancer, it is of great importance to determine the most effective factors on mammography behavior. The considerable finding of this research was that

most of the women introduced high cost of mammography as the basic barrier in this regard. Ann et al. have also reported the high cost of mammography screening as a basic barrier among the 50% of American natives and African immigrants [14]. Moreover, Straughan et al. found that the Singapore Chinese women have announced the barriers as believing in fate, wrong information about the mammography, and high cost, respectively [15]. In our study, the mean scores of mammography barriers were compared based on the personal characteristics, and the results showed that people with better economic status, higher education and with health insurance understand mammography barriers less. Lopez et al. studied 1050 American women and showed that lower education and income level are effective in breast cancer screening sustainment [12]. The same is true for Spanish and French women [9]. Ahmed et al. study on female residents of Middle Tennessee revealed that among the low income women, there remain crucial barriers such as physician proposes, lack of information, non-confidence prevalence, and fear [16]. Their findings also showed that the high cost of mammography, on the one hand, and low insurance cover, on the other, led to increase of the fatality proportion of breast cancer in the developing countries comparing to the developed countries.

In this study, most of the subjects stated high costs of mammography as the main barrier followed by fear of discovering cancer mass and being painful. This is in conformity with the results of Hardin's study conducted on black American woman who announced fear as the most basic barrier [17]. Kim et al. concluded that fear of breast cancer diagnosing is the main barrier of mammography behavior [18]. Also pain has been introduced as a basic barrier in this regard by various populations [19, 20].

Apparently, the reason is lack of information about the mammography procedures, false beliefs on breast twitching during mammography, or according to Rezei Qazdehi et al., having unfavorable experience of mammography [21].

Our study announces other reasons for refraining from mammography as having no breast cancer symptom. Trigoni et al. and Donato et al. have also introduced having no breast cancer symptom as the basic barrier in this regard [9, 22].

Tejeda et al. have shown that the women who have never conducted mammography and those who have conducted it one time in the last two years and lack of feeling pain or any mass in their breast believed that they do not need screening and are not at breast cancer risk [23]. Also Rezai Qazdehi et al. showed that 89.9% of the research population has pointed

the lack of breast cancer symptoms as the mammography barriers [21]. So it seems that increase of women's knowledge on mammography screening is a must, and we are in urgent need for this increase and promotion. Being employed and having no enough time to conduct mammography are the least choices among the mammography screening barriers according to the under-study units. The reason may be the low number of employed individuals among the population.

Since, the study has been conducted in Arak (one of the most important industrial cities of the country with the highest industrial pollution) and according to the earlier studies, breast cancer is the most prevalent type of cancers in this city (24). Therefore, it is necessary that the authorities concentrate on activities such as paying more shares of mammography costs by health insurances and more attempt to promote mammography screening among the Iranian women. Apparently, the country's health system has not considered breast cancer mammography screening as one of the crucial priorities in the breast cancer prevention, and has not paved the way for completed and comprehensive informing. For instance, Pap smear as a free screening process has been warmly welcomed, but the mammography process has not been concentrated, and even other less expensive screenings have not been conducted. This

finding must be highly recognized by the health system policy makers.

Restrictions

- 1) Just as any other studies, the samples may not be representative of all the Iranian women, despite our attempts to select them from all over the Arak city, because the city is industrial and its citizens are from all over the country's population.
- 2) Data collection was conducted through self-reporting and face-to-face methods; therefore, the collected data may be far from perfect accuracy.
- 3) All mammography barriers have not been considered in the questionnaire, and there may be more barriers from the viewpoint of the participants.

Conclusion

Finally, the results of the study revealed that the high costs, fear of discovering the cancer mass, being painful, and not knowing the mammography centers' addresses are among the most basic barriers of mammography screening among the Iranian women.

With regard to the results of the research, education and promotion of the women's knowledge about the importance of early breast cancer diagnosis through mammography screening, explaining the mammography screening procedures, and making women familiar with the necessity of conducting the

process should be given great importance in providing women with facilities, information and accessibility to reduce mammography expenses.

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