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## Barriers to Mammographic Screening of Breast Cancer in Women: a Cross-sectional Study in Southeastern Iran

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### ABSTRACT

**Background:** Breast cancer is one of the most prevalent cancers in women in Iran and many other countries around the world. This cancer is the most critical cause of malignancy-related mortality in women. Early detection of breast cancer through mammographic screening of breast cancer greatly increases the chance of a successful treatment. This study aimed to explore the obstacles to mammographic screening of breast cancer in women.

**Methods:** This cross-sectional study was carried out among 812 women over the age of 40 who had not undergone mammographic screening or had undergone it irregularly from three selected clinics in Zahedan in 2017. To this end, the researchers used a questionnaire which consisted of 17 questions to examine the barriers to mammographic screening of breast cancer.

**Results:** The results of this study showed that the most common barriers to this test were the following: not having the symptoms of breast cancer (62.7%); mammography being performed by male staff (57.5%); the absence of this test as a priority and necessity of life (57.2%); examination being sufficient by a physician or healthcare providers for diagnosis of breast cancer (55.8%); and the embarrassment of getting naked during mammography (51.5%).

**Conclusion:** Concerning the findings of this study, it has to be suggested first that mammography in the healthcare system should be performed by female staff. Second, health volunteers and local mass media, including provincial radio and television networks, can also play a major role in transferring educational materials to this target group.

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### INTRODUCTION

Cancer is one of the main problems related to public health in Iran and many parts of the world.<sup>1</sup> Breast

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cancer is the malignant proliferation of epithelial cells in the inner breast ducts.<sup>2</sup> In Iran and many other countries, this condition is the most common type of cancer in women, such that more than a million patients have been diagnosed with this cancer in the world.<sup>1-3</sup> Similarly, breast cancer is the most frequent malignancy in women worldwide. In 2008, approximately 715000 and 577000 new cases were detected, in developed and developing countries, respectively.



Breast cancer is also the most important cause of death associated with malignancy in women.<sup>4</sup> Early diagnosis of cancer increases the possibility of an effective treatment and reduces the burden of disease and death. Hence, WHO recommends women to regularly undergo mammographic screening of breast cancer.<sup>5</sup> In developed countries, the rate of survival after breast cancer has gradually increased up to 85% owing to improved screening and treatment practices. On the other hand, this rate has remained between 50 to 60 percent in developing countries,<sup>4</sup> where it is required that a simple, cheap, and effective method be used for screening breast cancer because early detection and treatment can lead to lower costs and much better outcomes.<sup>6</sup>

Many studies have pointed to the lack of enough awareness among women regarding breast cancer screening and treatment. It seems, therefore, that most women do not go through this screening.<sup>5-8</sup> Women may not refer for mammographic screening of breast cancer due to various reasons such as lack of time or money, lack of health insurance, and the absence of encouragement or guidance by the physician or family.<sup>9-12</sup> Other reasons for not having a breast mammography screening may include an unpleasant and painful test or even a dangerous experience and/or the belief that this cancer is not a serious disease.<sup>12-14</sup> Given the effect of breast cancer screening on having a timely and effective treatment, the present study has attempted, first, to explore the barriers in doing this mammography on the part of women in Southeastern Iran and, second, to make some suggestions as to how one might transcend them.

## METHODS

### *Study population*

This cross-sectional descriptive and analytic study was performed in 2017 initially on 890 women aged 40 years and older who referred to the selected clinics of Zahedan University of Medical Sciences. These clinics were selected from three health centers located in three economic regions including; high, medium and, poor. Afterwards, 812 participants who had either not undergone breast cancer screening or had done it irregularly entered the study. The study protocol was approved by the Ethics Committee on Medical Research at Zahedan University of Medical Sciences in Zahedan, Iran (IR.ZAUMS.REC.2016.422). The inclusion criteria were: age over 40 years; not having a mammography and/or irregular record of mammography; and consent to participate in the study.

### *Data collection*

In this study, due to the low educational level in some participants, the interview was conducted through a structured method in which the interviewer

reads a set of closed-ended questions in the form of an interview schedule, exactly as stated. Data collection was done using a questionnaire that consisted of demographic information and 17 questions about the barriers to breast cancer screening. This questionnaire was designed based on the Likert scale, consisting of 5 items ranging from “strongly agree” to “strongly disagree” (with 1 representing “strongly disagree” and 5 standing for “strongly agree”). The minimum and maximum scores were 17 and 85, respectively. Considering the questions and the scoring method, it needs to be said that earning higher scores by each person represented more barriers in doing mammography. Reliability and validity of this questionnaire were previously evaluated in a study at Tehran University of Medical Sciences by Rezaee Ghazdehi *et al.*<sup>15</sup> Cronbach's alpha coefficient of the questionnaire was estimated at 0.876.

### *Statistical analysis*

Statistical analyses were carried out using SPSS, version 19. Chi-square test was used to represent data as frequencies (percentages). Independent samples t-tests were used to compare the mean score of the questionnaire. The differences were considered significant at  $P < 0.05$ .

## RESULTS

The results of this study on 890 women over 40 years of age showed that only 78 individuals (8.7%) had regular breast cancer screening, and 812 individuals (91.3%) had not done and/or had irregularly undergone mammography.

**Table 1.** Socio – demographic characteristics.

Marital Status	N(%)
Married	583(71.8)
Single	27(3.4)
Divorced	73(8.9)
Widow	129(15.9)
Education	N(%)
Illiterate	292(35.9)
Less than high school education	282(34.8)
High school education	131(16.1)
College education	107(13.2)
Occupation	N(%)
Housewife	632(77.8)
Employed	142(17.5)
Retired	38(4.7)

The average age of the participants was  $49.10 \pm 8.56$  years. The majority of participants were married (71.9%), a significant number of them were illiterate



(35.9%), and most of them were housewives (77.7%) (Table 1).

All the women who had not done or had irregularly undergone mammography (n=781) answered the 17 questions about the reasons for not doing mammography. The results demonstrated that, based on the sum frequency of “agree” and “strongly agree,” the greatest barriers to breast cancer screening were as follow:

1. Not having the symptoms of breast cancer (62.7%);

2. Mammography being done by male staff and physicians (57.5%);

3. The absence of mammography as a necessity and priority in life (57.2%);

4. The adequacy of the examination by a physician or healthcare provider for diagnosing breast cancer (55.8%);

5. The embarrassment of getting naked during mammography (51.5%); (Table 2).

**Table 2.** The answers of participants to the questions about the reasons for not doing mammography

Items	Strongly disagree N(%)	Disagree N(%)	Don't know N(%)	Agree N(%)	Strongly agree N(%)
No need for mammography	117(15)	192(24.6)	144(18.5)	159(20.4)	168(21.5)
Failure to do so by friends	121(15.5)	216(27.7)	145(18.6)	158(20.3)	140(17.9)
Unpleasant experience of mammography in relatives	169(21.7)	270(34.6)	148(19)	119(15.3)	74(9.5)
Mammography is not a priority in my life	43(5.5)	122(15.6)	169(21.7)	231(29.6)	215(27.6)
The lack of importance of mammography in early detection of breast cancer	143(18.3)	270(34.6)	153(19.6)	101(12.9)	113(14.5)
No signs of breast cancer	62(7.9)	95(12.2)	134(17.2)	216(27.7)	273(35)
Lack of concern about breast cancer	112(14.4)	199(25.5)	89(11.4)	132(16.9)	248(31.8)
Adequacy of BSE to detect breast cancer	59(7.6)	190(24.4)	193(24.7)	167(21.4)	171(21.9)
The adequacy of the clinical examination for diagnosis	29(3.7)	105(13.5)	211(27.1)	230(29.5)	205(26.3)
The lack of attention one's health condition	151(19.4)	275(35.3)	124(15.9)	116(14.9)	114(14.6)
No family history of breast cancer	98(12.6)	189(24.2)	141(18.1)	169(21.7)	183(23.5)
Embarrassment of getting naked during mammography	103(13.2)	154(19.7)	121(15.5)	160(20.5)	242(31)
Mammography is done by male doctors	56(7.2)	140(17.9)	113(14.5)	136(17.4)	335(42.9)
Lack of trust in this method	194(24.9)	285(36.5)	109(14)	98(12.6)	94(12.1)
Lack of confidence in the health policies and guidelines	183(23.5)	312(40)	102(13.1)	89(11.4)	94(12.1)
Sonography is sufficient for diagnosis	85(10.9)	195(25)	169(21.7)	139(17.8)	192(24.6)

## DISCUSSION

The current study has addressed the barriers to mammographic screening of breast cancer. In line with other similar studies,<sup>15,16</sup> the current study showed that 62.7% of participants pointed to the lack of symptoms of breast cancer as their reason for not doing mammography. This implies that women have little information about the benefits of screening and its accuracy in early detection of cancer, plus the consequent effective treatment following such a diagnosis. Hence, education has a crucial role to play in this regard.

However, unlike other studies,<sup>15,17</sup> the present research has proposed the performance of mammography by male staff and the embarrassment associated

with getting naked while doing mammography as significant factors that impede mammographic screening of breast cancer. The reasons behind this remarkable difference could be related to the culture of the region in which the study was done, in addition to the lack of awareness as to the existence of female specialists and the absence of a necessity to refer to male specialists.

In this study, a considerable number of participants believed that BSE (breast self-examination) is sufficient for detection. In order to get the correct answer, the questioner provided the necessary explanations about the questionnaire items to the participants. Participants also received explanations about breast self-examin-



ation and then they started responding. The questioner's explanation can lead to a positive attitude of participants towards the role of breast self-examination in diagnosis.

By contrast, other studies have suggested that few participants thought that way.<sup>15,16</sup> Therefore, this indicates the need for training and enlightenment in this area.

Similar to another study conducted in Iran,<sup>15</sup> this research observed that only a small percentage of participants mentioned lack of confidence in the national health policies and guidelines as the reason for not doing screening. This issue could be discussed from two aspects: first, the people of this region trust the current national health policies; second, due to lack of adequate information and education about breast cancer screening, this program has not been well received, and there exist some obstacles and efforts need to be made to resolve them. In this research, there was a significant difference in terms of age and economic status in the mean score of the questionnaire ( $P=0.018$ ). Compared to the age groups of 41-50 years (34.97) and 51-60 years (36.78), the mean score of barriers to screening was greater in women older than 60 years (42.62). Also, the mean score of barriers to screening was 28.72 in the group with high socioeconomic status, suggesting fewer obstacles compared to individuals with a medium (35.61) and poor (39.21) socioeconomic status. The age distribution of the population affects the incidence of cancer, so that in some countries there is a decrease in age at diagnosis.<sup>18</sup> The results of our study showed that the barriers to breast cancer screening were different across different age groups, so that the highest mean scores belong to the group over 60 years, divorced women, and widows. Similar studies have also reported old age as an important factor in not doing mammography.<sup>15,19</sup> This fact could be attributed to the psychological conditions of this age group and the solitary life of such people. In this case, consulting with psychologists might be a useful measure. Compared with the groups who had a medium or poor socioeconomic status, individuals with a high socioeconomic status had lower mean scores in terms of barriers to breast cancer screening; other studies have reached similar conclusions.<sup>15,20</sup>

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In developing countries, mammograms are not performed primarily because of barriers in the healthcare system, which are due to limitations such as the availability of health services, the cost of tests, and difficulty in performing follow-up tests.<sup>21</sup> These limitations lead to low population coverage and generally restrict access to regular mammography. Concerning the limitations of this study, it has to be mentioned first that there is no national mammographic screening program in Iran. Women only have the chance of doing opportunistic screening. Second, according to the results of this study, educating women and raising their awareness about breast cancer mammography screening and its importance in early detection of this complication is necessary. High school females, as mothers and future women of the society, are one of the main groups who can have an important role in transferring educational materials to families. Moreover, focusing on those groups who have faced more barriers in going through screening will lead to high population coverage of this program.

Given the fact that insurance companies do not cover all costs pertaining to mammography, it seems that financial factors influence the rate of breast cancer screening. Since the questionnaire of the present study did not include a question to evaluate the impact of financial factors, this can be considered as a limitation in this study.

## CONCLUSION

Concerning the findings of this study, it has to be suggested first that mammography in the healthcare system should be performed by female staff. Second, health volunteers and local mass media, including provincial radio and television networks, can also play a major role in transferring educational materials to this target group.

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## CONFLICT OF INTEREST

The authors declare no conflicts of interest.





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