# Investigating attitudinal barriers to breast cancer mammography screening among women in Zabol city

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## A B S T R A C T

This study aimed to identify the psychological obstacles to breast cancer mammographic screening among women in Zabol City. This is because screening programs, including those for breast cancer, are not widely accepted, and because cultural, social, and economic differences exist between different regions of Iran. Cross-sectional and descriptive-analytical research methods were used. Two hundred women over the age of 40 who will be living in Zabol City in 2020 and who were chosen through census sampling are included in the statistical population. Data for the study were gathered using the typical professional ethics criterion questionnaire. Software called SPSS was used to examine the study's data. Two hundred women were questioned for this study. There were just 5% unmarried ladies and 85.5% were married. 82% of the women polled were employed, and 56% were stay-at-home mothers. 44.5% of women had a university degree, while 13.5% were illiterate. The obstacles of "not having breast cancer symptoms" and "mammography performed by male staff and physicians" were the two most prevalent attitudinal hurdles among women, with 75.5% and 49.5% of women agreeing on each. The three factors "The lack of diagnostic significance of mammography in early cancer diagnosis" and "Not trusting mammography" and "Not trusting national policies and guidelines" have the lowest frequency of all of the aforementioned factors, with 6% and 9%, respectively, of agreeing and completely agreeing. This study has identified the key elements that have been lowering mammography motivation among women in the Sistan area. This study also showed that women's work, educational attainment, and socioeconomic standing might influence their attitudes regarding mammography.

## 1. Introduction

Cancer is a neoplastic disease whose natural course is fatal and its infection affects the mental state, marital and social relations and will lead to nutritional and economic problems [1]. Breast cancer is a non-infectious hormone-dependent disease that is the result of the malignant proliferation of ductal epithelial cells or breast lobes. Breast cancer alone is expected to account for 26% of all new cancers in women. The American Cancer Society (ACS) estimates that 182,460 women in the United States were diagnosed with breast cancer in 2008 and that 40,480 women died of the disease during the year year[2-5].

Every year, more than one million and one hundred thousand women in the world are diagnosed with this cancer, and in fact, one

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out of every eight women is likely to be diagnosed with this malignancy in her lifetime [6]. This malignancy is the third most common cancer in Iran and the most common cancer among Iranian women, and its incidence in Iran is 22 per 100,000 people [7].

According to the reports of the Cancer Registration Center (2012- 2015), breast cancer is the most common cancer among Iranian women and its incidence is estimated at 24 cases per 100,000 people [8-10]. Although the overall prevalence of breast cancer in Asia is low, its incidence is higher in most Asian countries than in Western countries [11]. The above cases show that early diagnosis strategies are needed in the field of breast cancer in the country because the high mortality rate of women due to breast cancer is caused by the late diagnosis of this disease [12].

Early diagnosis of cancer through mammographic screening is actually the diagnosis of the disease at a time when clinical manifestations have not yet appeared [13]. Today, breast cancer deaths have decreased, and among these factors, mammographic screening has been able to reduce breast cancer deaths by 25 to 35 percent due to its ability to detect the disease in its early stages. However, only about a third of women over 50 years of age perform mammography according to the schedule [14].

One of the main reasons is the lack of awareness of women in this field. The most mentioned barriers in not doing mammography are lack of information about breast cancer and its screening methods, lack of insurance, fear of pain during mammography, fear of diagnosing a serious disease, anxiety, stress, high cost and lack of a doctor's recommendation to Performing mammography [15-18].

The existence of cultural differences in different countries has created different barriers to mammography. The type of attitude of people is also considered an important factor in screening, it has been shown in many studies that women with higher socio-economic levels and higher education participate in screening with more interest [19, 20]. Based on the fact that in Iran,

screening programs, including breast cancer screening, have not been properly considered and due to the existence of cultural-social and economic differences, this research aims to determine the attitudinal barriers to mammographic screening in women in Zabol city.

## 2. Materials and Methods

This was a descriptive-analytical cross-sectional study. Women over 40 years of age in Zabol City who have not had mammography were studied. A questionnaire including personal characteristics and 17 questions about attitudinal barriers will be used. The validity and reliability of this questionnaire have been confirmed in research conducted at Tehran University of Medical Sciences in 2020. The reliability of this questionnaire in Zabol is also evaluated among 30 women after completing it and by determining Cronbach's alpha. 200 women aged 40 years and above referring to prominent clinics of the Zabol University of Medical Sciences who had never had a Mammography were selected. 3 age groups of 40-50 years, 50-60 years and 60 years and above were considered as classes of this sampling.

The research data were categorized by a questionnaire containing personal characteristics and 17 questions about attitudinal barriers on a 5-point Likert scale from completely agree to disagree and with a scoring range of 0-4 (0 completely disagree and 4 completely agree) and how to complete the questionnaire. The questionnaire is completed by a literate person (midwifery expert). The validity and reliability of this questionnaire have been confirmed in research conducted at the University of Tehran.

The data are analyzed using SPSS software and descriptive statistics including frequency, average, frequency distribution tables and percentages according to the type and characteristics of the data as well as statistical tests including Spearman and Pearson correlation coefficient. For each questionnaire, four options were considered very much, somewhat, little and not at all. For each questionnaire, four options were

considered (very much, somewhat, little and not at all). For the very option, score 1 (excellent) and for the somewhat and low option, a score 2 (moderate) was included. The not at all option got a score 3 (weakest).

## 3. Results

This cross-sectional and descriptive-analytical research was conducted on 200 women aged 40 and over in Zabol City. Data was collected from patients referred to Amir Al-Momenin Zabol Hospital.

### 3.1. The first objective

To compare the average score of attitudinal barriers to breast cancer mammography screening based on marital status.

In the study conducted, out of 200 women studied, 171 were married, which is the most frequent, and 13 are divorced, 10 were single, and 6 were widows. The average score of attitude in single and married women was 52.2 and 55.8, respectively. In this study, there is no significant relationship between people's attitudes toward breast cancer screening mammography and marital status (p = 0.211).

### 3.2. The second objective

To compare the average score of attitudinal barriers to breast cancer

mammography screening based on employment status

Table 1 shows that 56% of the surveyed women were housewives and 82% were employed. The highest frequency is related to employed women and the highest average attitude score is related to employed women (60.77). In this study, there is a significant relationship between people's attitudes toward breast cancer screening mammography and employment status. And employed women have a higher attitude score than housewives.

### 3.3. The third objective

To compare the average score of attitudinal barriers to breast cancer mammography screening based on the level of education

Table 2 shows that 13.5% of women were illiterate and 44.5% had a university education. As the level of education increases, the average attitude score of people also increases, so people with university education have the highest average attitude score of breast cancer screening mammography. And as can be seen, there is a statistically significant relationship between the level of education and the mean score of breast cancer mammography screening (p=0.001).

**Table 1.** Frequency distribution table of the studied subjects according to their marital status and its relationship with the attitude score of the studied women

| Marital Status | Frequency | Mean | Percent | Standard Deviation | P Value (Chi –Square) |
|---|---|---|---|---|---|
| Single | 10 | 52.20 | 5.0 | 6.71 | |
| Married | 171 | 55.82 | 85.5 | 8.84 | |
| Divorced | 13 | 57.54 | 6.5 | 0.51 | 0.211 |
| Widow | 6 | 54 | 3.0 | 0.00 | |
| Total | 200 | 55.70 | 100.0 | 8.35 | |

**Table 2.** Frequency distribution of studied subjects based on education status and its relationship with breast cancer mammography screening attitude score

| Educational Status | Number | Mean | Standard Deviation | Percent | Chi-Square P Value |
|---|---|---|---|---|---|
| Illiterate | 27 | 49.04 | 5.17 | 13.5 | |
| Elementary | 8 | 52.50 | 2.67 | 4.0 | |
| Middle | 30 | 54.46 | 2.77 | 15.0 | <0.001 |
| Diploma | 46 | 52.91 | 7.18 | 23.0 | |
| University | 89 | 59.86 | 9.15 | 44.5 | |
| Total | 200 | 55.70 | 8.35 | 100.0 | |

### 3.4. The fourth objective

To compare the average score of attitudinal barriers to breast cancer mammography screening based on economic status

Table 3 shows that the economic status of 15.5% of women was poor. 14% had a good economic status, and the majority of people (70.5%) studied had an average economic status. The average score of breast cancer mammography screening for people with good economic status and poor economic status was 55.82 and 49.26 respectively. According to the test result ($p < 0.001$), there is a significant relationship between the economic status of people and their attitude score. People with medium and high economic levels have a higher average attitude score than people with poor economic status.

### 3.5. The fifth objective

To compare the average score of attitudinal barriers to breast cancer mammography screening based on the family history of breast cancer

Table 4 shows that 86% of the investigated women did not have a family history of breast cancer, while 3% of women reported a history of cancer in their first-degree relatives. The average attitude score in subjects with no family history of breast cancer and women with a family history of first-degree relatives was 55.64 and 51, respectively. The difference in attitude scores in women with a different family history was statistically significant (p=0.013).

**Table 3.** Frequency distribution of studied subjects based on education status and its relationship with breast cancer mammography screening attitude score

| Economic Situation | Number | Mean | Standard Deviation | Percent | Chi-Square P Value |
|---|---|---|---|---|---|
| Weak | 31 | 49.26 | 5.17 | 15.5 | |
| Medium | 141 | 57.09 | 8.20 | 70.5 | <0.001 |
| Good | 28 | 55.82 | 8.83 | 14.0 | |
| Total | 200 | 55.70 | 8.35 | 100.0 | |

**Table 4.** Frequency distribution table of the studied subjects is based on the family history of breast cancer and its relationship with the attitude score of breast cancer mammography screening

| Family History of Breast Cancer | Number | Mean | Standard Deviation | Percent | Chi-Square (P Value) |
|---|---|---|---|---|---|
| No History | 172 | 55.64 | 8.82 | 86.0 | |
| 1st Degree Family | 6 | 51.00 | 0.00 | 3.0 | |
| 2nd Degree Family | 8 | 55.50 | 5.88 | 4.0 | 0.013 |
| Other Family Degrees | 14 | 58.57 | 2.34 | 7.0 | |
| Total | 200 | 55.70 | 8.35 | 100.0 | |

### 3.6. The sixth goal

To determine the frequency of attitudinal barriers to mammography in women of Zabol City

Table 5 shows that the most frequent attitudinal barriers among women were related to the barrier "not having breast cancer symptoms" and "mammography performed by male staff and doctors" so these two factors were agreed with 75.5% and 49.5% of women, respectively. On the other hand, the lowest frequency of the above factors is related to the three factors "The lack of diagnostic significance of mammography in early cancer diagnosis" with 6% agreeing and

completely agreeing and "not trusting mammography " and " not trusting national policies " with 9% agree and completely agree.

In the present study, the majority of women answered that (Agree, completely agree) "Not having the symptoms of breast cancer" as the reason for not doing mammography, while only 2% completely agreed that mammography is not important in the early diagnosis of breast cancer. This means that despite the fact that people have a proper understanding of the use of screening as a method for early diagnosis of breast diseases, they are not interested in performing such health interventions. On the

other hand, the majority of the research units were not aware of the different uses of mammography in two aspects of screening and diagnosis, and they knew mammography only as a diagnostic method, not a method used for screening. Also, this finding shows that the knowledge and attitude of women participating in this study were not enough towards breast cancer and its symptoms.

Because the majority of research units assumed that not having symptoms of breast cancer is equal to not having it, and for this reason, they did not feel the need to perform mammography.

**Table 5.** The most frequent attitudinal barriers among women

| Attitudinal barriers | Attitude | frequency | Percent |
|---|---|---|---|
| Absence of mammography as a necessity in life | Completely agree | 20 | 10 |
| | Agree | 17 | 8.5 |
| Lack of experience by acquaintances | Completely agree | 12 | 6 |
| | Agree | 52 | 26 |
| Unpleasant experiences by others | Completely agree | 0 | 0 |
| | Agree | 21 | 10.5 |
| Lack of priority | Completely agree | 0 | 0 |
| | Agree | 32 | 16 |
| 'Believe in fate' | Completely agree | 12 | 6 |
| | Agree | 15 | 7.5 |
| The lack of diagnostic significance of mammography in early cancer diagnosis | Completely agree | 4 | 2 |
| | Agree | 8 | 4 |
| No signs of cancer | Completely agree | 56 | 28 |
| | Agree | 95 | 47.5 |
| No worries about cancer | Completely agree | 6 | 3 |
| | Agree | 48 | 24 |
| Inadequacy of breast self-examination in cancer diagnosis | Completely agree | 11 | 5.5 |
| | Agree | 19 | 9.5 |
| Complete trust in doctors and caregivers | Completely agree | 5 | 2.5 |
| | Agree | 58 | 29 |
| Neglecting your health | Completely agree | 0 | 0 |
| | Agree | 20 | 10 |
| No family history of breast cancer | Completely agree | 17 | 8.5 |
| | Agree | 66 | 33 |
| Shame about being naked during a Mammography | Completely agree | 9 | 4.5 |
| | Agree | 69 | 34.5 |
| Mammography performed by male staff and physicians | Completely agree | 32 | 16 |
| | Agree | 67 | 33.5 |
| Not trusting mammography | Completely agree | 9 | 4.5 |
| | Agree | 9 | 4.5 |
| Not trusting national policies and guidelines | Completely agree | 4 | 2 |
| | Agree | 14 | 7 |
| Adequacy of ultrasound | Completely agree | 8 | 4 |
| | Agree | 38 | 19 |

One of the most interesting findings in this study is that only 9% of the participants in this study mentioned "not trusting national policies" and guidelines as a reason for not performing screening mammography. This issue can be discussed in two ways. First, the health policies and guidelines of the country are unfamiliar and unknown. In this sense, proper information about the importance of mammographic screening has not been provided and the necessity of this program has not been emphasized. In this case, if people trusted the system, they would

support screening programs. In general, the health system of the country has not considered mammographic screening of breast cancer as one of the most important priorities in the prevention of breast cancer, therefore, it has not provided a suitable background to facilitate comprehensive and complete information and perform this type of screening. For example, one of the reasons for everyone's acceptance of Pap smear screening was the free cost of this test through the health system, which until now has been not performed for mammographic screening of

breast cancer and even other screening methods (breast self-examination and examination by trained people). It seems that this finding should be given more attention by the policy-makers of the country's health system. In the present study, it can be said that due to religious beliefs, women refuse to perform mammography because they think that this procedure is performed by men staff. On the other hand, the three factors "lack of diagnostic significance of mammography the early detection of cancer" and "not trusting mammography" and "not trusting national policies" had the least negative role among women.

## 4. Discussion

In this study, we examined 200 women who had no history of mammography to study motivational barriers related to mammography. The results of this study showed that the biggest barrier causing a negative attitude in women was related to "not having breast cancer symptoms" and also thinking that mammography is performed by staff and doctors of the opposite sex. In some studies [21-23], similar to the present study, the absence of disease symptoms was the biggest barrier to mammography. Also, not performing this procedure due to the absence of mammography breast cancer symptoms can endanger the health of women in society. It means that there is little information about screening and the importance of its benefits and accuracy in the early detection of breast cancer, and it is necessary to provide information in this field and encourage women to do mammography [24-26].

In a study [27], participating women who had never had a mammogram, as well as women who had a mammogram once in the past two years and did not have pain or a lump in their breast, believed that they did not need screening. In a study [28-30], 45% of the participants stated that they did not need to do mammography or they feel perfectly healthy, and in the study of Parkington and colleagues, 50% of people considered the "absence of mammography as a necessity" to perform mammography as the most common reason. This finding shows that the benefits of screening programs are not yet well known or that screening is not accepted as a suitable

method for the early detection of breast cancer among women.

In a study [23], the "absence of mammography as a necessity" accounted for 62% of the cases, which is not consistent with the results of the present study [31]. The reason for this difference can be due to the fact that the majority of the studied population were literate people with a university education.

A study [32], stated that among the attitudinal barriers to screening mammography, lack of trust in physicians and caregivers and screening mammography method, low income is one of the most important factors. While in the current study, the "not trusting national policies and guidelines" of the country are included in the lowest percentage among the attitudinal barriers [32]. This study showed that the attitude of women does not depend on their marital status. In the study of Rezaei and colleagues [23], there was a significant relationship between marital status and the attitude score of women, so married women had a higher attitude score [31]. Also, in this research, it was determined that there was a significant relationship between attitudinal barriers, level of education and economic status of people so that the highest average of all attitudinal barriers was observed in illiterate or elementary-educated women and women with low economic status. In a study [33] on 1050 American women, they showed that the level of education and the amount of income are factors influencing the screening of breast cancer. In France and Spain, women with higher incomes and levels of education participated more in screening [21, 33]. Women with no family history of breast cancer had a higher attitude score than women with a family history of cancer.

In a study [34], breast cancer screening mammography in women with a family history of breast cancer was more than in women with a family history of other cancers and women with no family history of cancer, which is not consistent with the findings of the present study. In some studies [35-38], no significant relationship was found between the family history of breast cancer and

increased willingness to perform breast cancer screening mammography. The strength of this study was its relatively high sample size, which showed the obtained results with less bias. One of the weaknesses of the study was that the majority of the women studied had diplomas and university education. A small percentage was illiterate, and the motivation and barriers to ultrasound in women with lower education levels should be investigated.

## 5. Conclusion

This study revealed the most important factors in reducing motivation among women in the Sistan region regarding mammography. Also, this study showed that women's employment, education and economic status can be effective in their attitude towards mammography.

## Conflict of Interest

The authors hereby declare that they have no conflict of interest.

## Author's contributions

All authors equally participated in designing experiment analysis and interpretation of data. All authors read and approved the final manuscript.

## Ethics approval and consent to participate

No human or animals were used in the present research.

## Consent for publications

All authors have read and approved the final manuscript for publication.

## Availability of data and material

The authors have embedded all data in the manuscript.

## Informed Consent

The authors declare not used any patients in this research.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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How to Cite This Article:

Saravani K, Saravani S, Dadras F (2021) Investigating attitudinal barriers to breast cancer mammography screening among women in Zabol city. Cellular, Molecular and Biomedical Reports 1 (4): 158-167. doi: 10.55705/cmbr.2023.411556.1167

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