# Attitude Barriers to Breast Self-Examination from the Perspective of Women Referred to Health Centers Affiliated with Shiraz University of Medical Sciences

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## Abstract

**Background:** Breast Neoplasms is believed to be one of the most prevalent types of cancer in women. In the early stages, the disease could be diagnosed and controlled by breast self-examination (BSE). However, attitude barriers stop women to BSE on a number of occasions. We conducted the present study to investigate the attitude barriers of breast self-examination from the perspective of women who referred to health centers affiliated to Shiraz University of Medical Sciences (SUMS).

**Methods:** The current research was conducted as a cross sectional method from August to September 2019 on women aged 20-60 years referring to health centers affiliated to SUMS. The participants were selected with simple Random sampling and 101 complete questionnaires were returned. The data collection tool was the researcher-made questionnaire comprising 5 components (12 items) in Likert scales. The obtained data were analyzed with SPSS22 software using One sample T-test, Independednt T-test, and Pearson correlation.

**Results:** Except for the component of mental beliefs (P=0.92), all the other components were significantly lower than expected (P<0.001). The mean scores were for embarrassment (2.85±0.48), previous knowledge (2.93±0.69), negligence (3.03±0.49), and fear of breast mass (3.05±0.43). Attitudinal barriers decreased with the increase in education (P=0.01). Moreover, regarding the evaluation of the correlation between the components, the highest correlation was between previous knowledge effect and negligence (r=0.66), embarrassment (r=0.52), fear of breath mass (0.50). Additionally, the correlation between negligence and fear of breast madd was found to be 0.52.

**Conclusion:** Since certain factors, such as incorrect previous knowledge, examination-associated embarrassment, fear, and forgetfulness are barriers to BSE, designing educational programs at different ages and educational levels seems to be essential, for adolescents in particular. To eliminate previous misconceptions and attitudes, creating good culture through public media and social networks could be effective.

*Keywords:* Women, Breast self-examination, Breast neoplasms, Attitude, Barrier

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## 1. Introduction

Breast neoplasms is one of the most prevalent cancers among women (1). It makes 23% of the cancer-associated deaths among women (2). The incidence of this disease is increasing and is the most common cause of cancer death in middle and low income countries (3). According to the World Health Organization (WHO) in 2013, about 1.15 million cases of breast neoplasms are reported each year, and its prevalence is constantly increasing (4).

According to the WHO annual report, the prevalence of breast neoplasms is on an increasing trend in Asian countries. Currently, among per 100,000 people, there are 21.3 cases in Jordan, 52 in Japan and South Korea, 24.1 in Turkey, 34.6 in Malaysia, and 21.4 in Iran (5-9) and in Pakistan. That is to say one-ninth of people are at risk of breast neoplasms (10).

In Iran, breast neoplasms is the first prevalent cancer in women and accounts for 21.4% of women's malignancies (11). The results of a study in Iran showed that 23% of breast neoplasms in Iran were observed in women under 40 years of age, of whome approximately 70% were in advanced stages of cancer when they referred to health centers (12).

From the social aspect, women play a very important role in developing the health of a society and the family economy, and women's illnesses is followed by destructive effects not only on them, but also on every single member of their family, on top of the impose high medical costs in family. (13). Despite the negative effects of the disease, fortunately, breast neoplasms could be easily diagnosed and controlled with breast self-examination, clinical breast examination, and mammography (14).

Early detection of breast neoplasms allows the disease to be controlled in the early stages and increases the likelihood of timely treatment (3). The survival rate of people in the initial stages of the disease is 75% in 10 years while this rate for people in the fifth stage of the disease is less than 20% in 5 years (15). In the early stages of the disease, once the cancer is confined to the breast, 75% to 90% of women will have a chance of a healthy life (16). Researchers attribute the high mortality rate of breast neoplasms to the late diagnosis of the disease. They believe that the success of developed countries in controlling mortality and the consequences of the disease, depends on its timely and early diagnosis. For note, the survival of the individual is directly related to the stage of the disease at the time of diagnosis (17).

Studies have demonstrated that regular and monthly breast self- examination can increase the early detection of breast neoplasms and, consequently, reduce the mortality rate of patients. (18) However, research has shown that despite the increasing relative awareness of breast self-examination, only a small number of women perform it (17-19). However, breast self-examination is a healthy, simple, cost-effective, and non-invasive procedure, which can be performed without the need for specialized equipment and personnel (20-22).

Furthermore, based on previous researches, one of the reasons why women refuse breast self-examination, is their misconceptions and attitudes. Akhtari-Zavare (2015)in a study on Malaysian female students found that over 74.5% of the students were unable to do breast self-examine due to lack of knowledge and skills, and some behavioral and attitude barriers, for instance sense of embarrassment from breast examination and fear of cancer (19). Aryan (2017) and Getu (2019) found that the most important barrier to breast self-examination among girl students is the negligence and forgetfulness (23, 24). Even though research has shown that education could improve self-examination techniques, certain researches have implied that the first dominant mental norms, fear and examination-associated embarrassment for instance, in some cultures prevent women from freely asking about the breast self-examination or performing it (19, 18). This could sometimes lead to a loss of golden time to identify and treat the disease. Therefore, the identification of attitudes of women is of great importance and could be considered in educational planning. Due to the fact that no research has been done so far on this issue at Shiraz University of Medical Sciences, researchers decided to conduct a study aiming to examine the attitudes of women about breast self-examination.

## 2. Methods

### 2.1. Study Design

The research was conducted as a descriptive cross sectional method from August to September 2019 on women aged 20-60 years referring to health centers affiliated to Shiraz University of Medical Sciences.

### 2.2. Sample Size and Sampling Method

The variance and number of women aged 20 to 60 years who had not received any breast self-examination training was not known. Accordingly, given that our questionnaire had a range of 5 options, the amount of variance was primarily calculated as follows:

$$\sigma = \frac{Max(xi) - Min(xi)}{6} = \frac{5-1}{6} \simeq 0.65$$

Subsequently, the following formula was utilized for calculating the sample size. In this formula, the maximum error rate was 0.1. Therefore, the estimated number of samples was 162 participants.

$$n = \left(\frac{Z\frac{1-\alpha}{2} * \sigma}{\varepsilon}\right)^2 = \left(\frac{1.96 * 0.65}{0.1}\right)^2 \simeq 162$$

Finally, 101 women answered the questionnaires completely (Return rat = 0.62) . In this study, we intended to get the attitude of women ahead of any formal trainings; the decrease in the number of samples was due to the very small number of participants who had not received any trainings on breast self-examination.

### 2.3 Selection and Description of the Participants

The participants were selected with simple Random sampling. The inclusion criteria included women covered by a family physician in Shiraz, aged 20- 60 years, none participated in breast self-examination formal courses, and consent to participate in the study. The exclusion criteria comprised women with underlying or incurable diseases, those who did not wish to cooperate at any stages of the study, or those who completed less than 80% of the questionnaire. Our samples completed a conscious consent form. Each referred woman was given a File code and the File codes were chosen randomly. Of course, before distributing the questionnaire, we checked whether they met the inclusion criteria.

## 2.4 Measuring Tool

The data collection tool was the researcher-made questionnaire including 5 comonents in Likert scales (mental belief, fear of detecting the breast mass, sense of embarrassment of the examination by clinicians, negligence and previous knowledge effects [Misconception]). The content of the questionnaire was based on past researches (19, 23, 25-28) in 15 items on a five-choice Likert scale. In positive statements, the five-choice Likert scale included completely agree (5), agree (4), almost agree (3), disagree (2), completely disagree (1), and in negative statements, the scores were reversed. Therefore, a higher score indicated a positive attitude. From the experts' point of view, three questions needed to be corrected grammatically. The content validity of the questionnaire, employing Content Validity Index (CVI), was confirmed by 10 experts, including obstetricians (5), midwifery (2), medical education (3) by Content Validity Index (CVI). The CVI value was 99% for relevancy, 99% for clarity, and 98% for simplicity from the perspective of 10 experts. Based on the internal consistency of the questions and using Cronbach's alpha coefficient, the reliability was initially calculated to be 78%. In the internal consistency analysis, three questions were not suitable and by eliminating them from the analysis phase, reliability increased by 84%. The questionnaire was ultimately approved with 12 questions. The educated subjects completed the questionnaire themselves, but for the illiterate participants, the questions were presented orally with explanations.

## 2.5. Ethical Considerations

Our study was based on personal preference and conscious consent of the participants. The data were collected and analyzed anonymously. All the information provided by the participants in this project was confidential. Before the study begins, all the participants were justified in their research goals and participated in the project with full knowledge. The design was not mandatory and the participants had the option to withdraw from the study at any time. The use of this research and its results were reported to health adminstrators. This project was reviewed by the Ethics Committee of the Vice Chancellor for Research of Shiraz University of Medical Sciences (SUMS) and approved under the code of Ethics IR.SUMS.REC.1398.101. It is registered on the website of the National Ethics Committee on Environmental Research at http://ethics .research.ac.ir.

## 2.6. Statistics

Finally, 101 complete questionnaires were returned. The obtained data were analyzed utilizing SPSS 22 software. For evaluating the mean of each components, one sample T-test was used (Cut off point= 3). Independednt T-test was also employed for two-group comparisons and Pearson correlation test was used to measure the correlation between the components.

## 3. Results

After analyzing the data, the demographic information of the participants showed that 101 women answered the questions. Table 1 represents the demographic characteristics:

According to Table 2 [Frequency and (Percentage)], with the integration of completely agree, agree, and almost agree options, although more than 84% of the subjects approved of the necessity of breast self-examination training and learning, about 86% of them believe that the disease is hereditary and cannot be cured or prevented and did not consider self-testing efficient. Furthermore, 78% of them were afraid of

| Table 1: Characteristics of demographic variables of the research samples | | |
|---|---|---|
| Age (Year) | 20- 30 | 13 (13.1%) |
| | 31-40 | 46 (46.5%) |
| | 41-50 | 34 (34.3%) |
| | ≥51 | 6 (6.1%) |
| | Mean | 38.6±7.2 |
| | Minimum | 20 |
| | Maximum | 60 |
| Marriage | Single | 12 (11.9 %) |
| | Married | 89 (88.1 %) |
| Education | None Academic | 61 (60.4 %) |
| | Academic | 40 (39.6 %) |
| History in Family | Yes | 5 (5 %) |
| | No | 95 (95 %) |

**Table 2:** Identifying the attitude barriers to breast self-examination from the participants' viewpoints

| Components | | Completely agree | Agree | Relatively agree | Disagree | Completely disagree |
|---|---|---|---|---|---|---|
| Mental belief | I think all women should know about breast mass and BSE | 69 (71.1) | 3 (3.1) | 24 (24.7) | 1 (1) | 0 (0) |
| | I think BSE by one's own is very important for diagnosing breast masses. | 50 (52.1) | 1 (1) | 44 (45.8) | 1 (1) | 0 (0) |
| | I think breast neoplasms is a hereditary disease and BSE has no effects on its' prevention. | 0 (0) | 22 (22.7) | 61 (62.9) | 13 (13.4) | 1 (1) |
| Fear Of The Breast Mass | When I think about early detection of breast neoplasms, I get anxious and worried. | 0 (0) | 5 (5.2) | 73 (76.0) | 12 (12.5) | 6 (6.2) |
| | I am often afraid of finding a mass in my breast. | 0 (0) | 10 (10.3) | 74 (76.3) | 9 (9.3) | 4 (4.1) |
| | Because of fear of cancer, I refuse to have a monthly BSE. | 1 (1) | 16 (16.5) | 73 (75.3) | 5 (5.2) | 2 (2.1) |
| Embarrassing of the examination | I am embarrassed to do breasts examination by a physician or nurse. | 1 (1) | 16 (16.5) | 72 (74.2) | 5 (5.2) | 3 (3.1) |
| | I don't do mammography because of my embarrassment. | 1 (1) | 23 (23.7) | 69 (71.1) | 4 (4.1) | 0 (0) |
| Negligence | I usually forget to do a regular BSE. | 0 (0) | 9 (9.3) | 80 (82.5) | 6 (6.2) | 2 (2.1) |
| | I do BSE only when I feel pain or difficulty in my breasts, not regularly. | 0 (0) | 12 (12.4) | 73 (74.2) | 9 (9.3) | 4 (4.1) |
| Previous Knowledge effects (Misconception) | If there is no family history of breast neoplasms, there is no need for BSE. | 1 (1) | 28 (29.2) | 55 (57.3) | 7 (7.3) | 5 (5.2) |
| | Breast neoplasms is an inherited disease and has no correlations with lifestyle. | 1 (1) | 19 (19.6) | 62 (63.9) | 9 (9.3) | 6 (6.2) |

*BSE: Breast Self-Examination

**Table 3:** Avarege scores of attitude barriers components to breast self-examination from the participants' viewpoints

| Components | Mean | SD | t | P value |
|---|---|---|---|---|
| Mental belief | 3.39 | 0.35 | 11.15 | 0.000 |
| Fear of breast mass | 3.05 | 0.43 | 1.32 | 0.190 |
| Embarrassment of the examination | 2.85 | 0.48 | 2.90 | 0.005 |
| Negligence | 3.03 | 0.49 | 0.61 | 0.539 |
| Previous knowledge effects (Misconception) | 2.93 | 0.69 | 0.95 | 0.344 |
| Total | 3.04 | 0.34 | 1.29 | 0.200 |

*SD: Standard deviation

finding a mass while performing self-examination, and about 98% of them did not even take it into account and did not do it regularly because of their fear.

The sense of embarrassment of breast self-examination is another barrier. It should be noted that despite the fact that in Iran, all the health care providers in breath examination are women, they do not feel comfortable in the examination (97%).

Another major obstacle is negligence and forgetfulness. 92% of our subjects reported that not performing breast self-examination was due to forgetting it. Previous knowledge effects (Misconception) is also considered as a barrier. 88% of the participants thought that there was no need for breast self-examination if there was no family history of the disease.

Comparing the Components, overall with cut-off point 3, mental beliefs about the necessity of self-examination were acceptable (3.39±0.35), fear of breast mass (3.05±0.43), forgetting, and negligence (3.03±0.49) were unexpectedly almost intermediate. Yet examination-associated embarrassment (2.85±0.48) was the the most important barrier (P=0.005) (Table 3).

We compared the mean of each components with the variable of education employing independent T-test. According to our comparison, there was a significant difference between the academic and non-academic education groups in the total score of attitude (P=0.01). Comparison with non-university graduated was higher (P=0.01) and the university-graduated participants had better scores concerning negligence and forgetfulness (P=0.01). In other areas, the difference was not significant.

Comparing the mean of each domain concerning age, using ANOVA test, there were no significant differences between the groups in the total attitude

**Table 4:** Correlation between components

| Components | | Mental belief | Fear | Embarrassment | Negligence | Previous knowledge effects |
|---|---|---|---|---|---|---|
| Mental belief | R (Pearson). | 1 | | | | |
| | P value. | | | | | |
| Fear | R (Pearson). | 0.22 | 1 | | | |
| | P value. | 0.03 | | | | |
| Embarrassment | R (Pearson). | 0.38 | 0.51 | 1 | | |
| | P value. | <0.001 | <0.001 | | | |
| Negligence | R (Pearson). | 0.31 | 0.52 | 0.42 | 1 | |
| | P value. | 0.002 | <0.001 | <0.001 | | |
| Previous knowledge effects | R (Pearson). | 0.48 | 0.50 | 0.52 | 0.66 | |
| | P value. | <0.001 | <0.001 | <0.001 | <0.001 | |

score (P>0.05). However, in the descriptive study of the subgroups, women in older ages paid further attention to regular self-examination (Table 4).

We used Pearson correlation test for examining the correlation between the components of attitudinal barriers. results showed, the correlation at the significance level (P<0.001) and r>0.50 was observed between: previous knowledge and negligence (r=0.66), previous knowledge and embarrassment (r=0.52), fear of breast mass and negligence (r=0.52), fear of breast mass and embarrassment (r=0.51), previous knowledge and fear of breast mass (r=0.50), and previous knowledge with mental belief (r=0.48).

## 4. Discussion

The results obtained in the current research revealed that even though our participants confirmed the necessity and importance of self-examination, attitude barriers, such as fear and forgetfulness, prevented breast self-examination. The sense of embarrassment of breast examination was the most important barrier. For 84% of the subjects, the fear of finding a breast mass was one of the reasons that prevented them from performing breast self-examination.

In accordance with the present study, Akhtari-Zavare (2015), in a study on Malaysian female students, , found that more than 74.5% of the students were unable to perform breast-examination due to lack of awareness and knowledge, on top of attitude barriers, such as embarrassment and fear of feeling breast mass (19). The results of the research by Kalliguddi (2019) on women working at the Silicon Valley Information Technology Center in India showed that their knowledge, skills, and attitudes were at a low level. Their insufficient knowledge was due to the fact that they had not received any trainings on breast self-examination during and before college. The lack of appropriate attitudes was due

to social norms, women's sense of uncomfortability to talk about their bodies and private matters, the sense of embarrassment from breast self-examination, and so forth (29).

Ayran, in 2017, investigated the effectiveness of breast self-examination training with peer-to-peer education in medical science students. In the initial survey, 75% of the students were aware of the necessity of self-examination after the age of 20, but only 16% performed it. The most common obstacle was the fear of finding a breast mass, forgetfulness and negligence (24). In 2019, Getu studied the barriers to braest self-examination and found that the main barriers were lack of knowledge and skill (29.7%), negligence (20.9%), forgetful (15%); and 23.3% of them believed that they did not need to exam themselves until they felt a problem (23).

Anvari and colleagues (2012) in Mashhad University of Medical Sciences investigated on knowledge and attitude of female students about breast neoplasms risk factors, methods of prevention, and early diagnosis. Result showed that more than 63% of students were aware of breast self-examination while only 43.3% performed this procedure regularly on a monthly basis. Among the barriers to breast self-examination and examination by physician, "negligence" was observed to be the most important obstacle (30).

Gürsoy and colleagues (2009), in an experimental study on women in Turkey (Trapazan) concerning the impacts of three breast self-examination training methods, found that in certain cases, education could not influence attitudes; one of the reasons was persistence of old beliefs. It was about exchanging people in group meetings and reinforcing negative beliefs about it. In other words, the cultural barriers and norms of societies could be even more influential than the knowledge and awareness of individuals (31).

Therefore, it is important to develop the right attitudes for people at an early age and to boost the awareness of the public.

Cultural factors and social taboos in addressing women's sexual issues are other barriers that may lead to shame and disadvantage for women to receive preventive services. As could be observed in the present study, many women are at risk of not being diagnosed with the disease due to their sense of embarrassment of examination and mammography by doctors or nurses. The important point in Iranian society is that the age of breast neoplasms in Iranian women is lower than the global average, many of which may be due to the embarrassment. Based on the results, women with academic education were in a better situation in terms of negligence and forgetfulness compared to those without an academic education. Of course, since none of the groups received formal training on breast self-examination, this difference could be due to the attention and sensitivity of academic educated subjects in pursuing health-related content. Additionally, more educated people have better abilities in searching and evaluating health information through internet or online tools. Also, based on our results, previous knowledge (misconception) have often been related to other components with positive correlation. In other words, what source people receive information from for the first time is of great importance in shaping their attitudes.

## 5. Conclusion

Based on our finding, since embarrassment of breast examination by clinicians is the most important barrier to this procedure, breast self-examination training seems to be a very important individual diagnostic method. This necessitates public awareness in this regard from an early age.

Other reasons for not doing breast self-examination are negligence and fear of finding a breast mass. These two factors might reciprocatedly influence each other. In fact, psychologically, fear of a phenomenon causes it to be ignored. On the other hand, many people do not see a doctor until they feel a specific difficulty in their body. Given the fundamental role of women in society and family, and the importance of early detection of breast mass at an early age, breast self-examination centers should play a greater role in creating a culture, and regularization and institutionalization of breast self-examination in women's health. Creating a reminder app for women's health and even men's pursuit of personal health could be helpful in tracking personal health issues. A reminder text message from a family physician could also be effective. It is also recommended that mammography be mandatory for women after the age of 40 in the health services of every organizations. Furthermore, providing the public with information through public media is essential in creating a positive public culture. It is also a good idea to include breast self-examination training to the trainings in high schools from the age of 15 onwards. Creating an elective general course or compulsory periodic workshops at universities or in-service training of staff is essential for breast self-examination training.

Since this study was carried out on women referred to health centers affiliated with Shiraz University of Medical Sciences, the results cannot be generalized to the whole population in Iran or other counries. In addition, since the number of women between the ages of 20 and 60 who received no training in breast self-examination was very small, the number of eligible samples for admission was limited. Accordingly, it is recommended to conduct such research in different environments and with different levels of education to achieve further reliable results.

## Ethical Approval

The Ethics Review Board of Vice Chancellor for Research in Shiraz University of Medical Sciences approved the present study under the following code: IR.SUMS.REC.1398.101. This research is registered on the website of the National Ethics Committee on Environmental Research at http://ethics .research.ac.ir.

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