Knowledge, Attitude, and Practice on Breast Cancer Screening Methods among Women in the North of Iran

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Abstract

**Background:** Breast cancer is the second most common cancer in women. Because early detection of breast cancer can be associated with better treatment and reduce the risk of death, screening tests for rapid diagnosis is a crucial measure. The aim of this study was to survey the knowledge, attitude, and practice on breast cancer screening methods among women in the North of Iran.

**Methods:** This study was a cross-sectional and descriptive study conducted on 1410 women aged greater than 20 years in the north of Iran. Data was collected using self-developed questionnaire by the researchers after extensive review of literature. The questionnaire included 40 questions that 6 questions were related to demographic characteristics, 15 questions were about measuring awareness towards breast cancer, mammography, and screening methods such as BSE or CBE by physicians, 10 questions were about assessing attitude towards screening methods, and finally 9 questions for assessing performance of female BSE as well as CBE based on mammography. Collected data were analyzed by SPSS-17 statistical software.

**Results:** The mean age of the women was 35.71±11.60 years. The mean of awareness scores was 51.0±9.2). The mean of attitude scores was 72.0±12.4. There was no significant relationship between awareness and demographic variables (except for employment, P=0.003). There was a positive relationship between awareness and positive attitude with a correlation coefficient of 0.54. The results related to women’s awareness towards screening methods showed that mean of awareness towards breast cancer is 63.70%, the mean of awareness towards BSE is 65.13%, the mean of awareness towards CBE is 68.0%, and the mean of awareness towards mammography...
is 69.70%. There is a significant relationship between two variables of attitude and awareness of women towards regular use of screening methods and BSE (P<0.001). However, there was no significant relationship between attitude and variables such as demographic characteristics, family history of disease, and individual’s experience of breast cancer.

**Conclusion:** The results of this study showed that knowledge and attitude of women towards breast cancer screening methods was moderate, but their practice was poor for these tests.

**Keywords:** Breast Cancer Screening, Knowledge, Attitude, Practice, Women.
Introduction

Cancer is the most important cause of death in Asian women [1]. Breast cancer is the second most common cancer in women and a common disease both in developed countries and in developing countries [2, 3]. In developed western countries, one out of every eight women is prone to breast cancer [4]. Also, it seems that the disease is increasing in the Middle East [5]. There are no reliable statistics on the rate of breast cancer in Iran, but an unofficial estimate suggests that incidence of the disease is 20 cases per 10,000 patients of the female population [6]. According to the latest report by the Cancer Institute of Iran, breast cancer constitutes 25% of all cancers among Iranian women, with the highest rate occurring in those aged between 35 and 44 years [7]. So the risk of breast cancer increases with age. The primary factors that increase the risk of breast cancer in women include certain inherited genetic mutations, a personal or family history of breast cancer, and biopsy-confirmed hyperplasia [8].

Because early detection of breast cancer can be associated with better treatment and reduce the risk of death, screening tests for rapid diagnosis is a crucial measure [4]. Breast cancer presents most commonly as a painless breast lump and in a smaller proportion with other symptoms. This cancer is amenable to almost complete cure in its early stages but to seek medical help early in the course of disease, women need to be “breast aware”: they must be able to recognize symptoms of breast cancer through routine performance of practicable screening [9, 10]. There are three options for breast cancer screening: mammography, clinical breast examination (CBE) by a physician and breast self-examination (BSE). Although mammography is the most accurate option but does not mean that other methods are not helpful [11]. The American Cancer Society states that every woman should know what is the status of the normal breast, and can recognize any change in its tissue and informs to her doctor. Women who do breast self-examination have a greater chance of finding breast tumors in their early stages [12]. Self-examination for early diagnosis of breast cancer is the most important factor in increasing the possibility of treatment [13]. Various studies show that knowledge, attitude and practice to use these methods are very different. In a study of Korean nurses, it was found that 39.5% of the women had done BSE over the past year. In this study, the nurses who had more confidence to do their own examination, further examinations were performed [14]. Another study on African-American women showed that many women believed that screening is not necessary, because their families had no history of breast cancer [15]. Also, a study of screening for breast cancer in Chinese women showed that 85% of the women had heard about screening and only 50.0% of them had done mammography [16].

The American Cancer Society reports that in a BSE screening program for breast cancer in women over forty years, 24% reduction in mortality was observed [4]. Other benefits can be outlined for BSE; Such as be economic, simple and non-invasive [17]. Also for rural areas and developing countries can be an appropriate option [18]. On the other hand, CBE is relatively simple and inexpensive, but its effectiveness in reducing mortality from breast cancer has not been directly tested in a randomized trial. Mammography is complex and expensive, but may pick up tumors long before they can be detected in any other way, thus enhancing better prognosis than those whose cancer is detected in some other ways [19].

In Iran, most patients present in advanced stages, although they are younger than patients in western countries. Cultural, occupational and economic problems are some important causes of late referral in many Asian countries including Iran [20, 21]. Knowledge, attitude and practice of
the community is necessary for a screening program particularly BSE. Considering the importance of early diagnosis of breast cancer, when a woman perceives accurately about her chance for developing breast cancer and knows the complications and consequences of the disease and see more benefits in preventive behavior and fewer barriers would have exist in the way of doing these behaviors, she will be more inclined to adopt this behavior. As well as having positive beliefs and motivations for health and a good self-confidence will help to person to do these behaviors [22]. Therefore, this study was conducted to survey knowledge, attitude, and practice on breast cancer screening methods among women in the north of Iran.

MATERIALS & METHODS
In this cross-sectional and descriptive study, 1410 women aged greater than 20 years referred to the health centers in the north of Iran were investigated. Participation in the study was made voluntary. Informed consent was obtained and participants were assured of the confidentiality of their responses. The sample size encompassed 141 clusters that each of them included 10 people. Data was collected using self-developed questionnaire by the researchers after extensive review of literature. The questionnaire included 40 questions that 6 questions were related to demographic characteristics, 15 questions were about measuring awareness towards breast cancer, mammography, and screening methods such as BSE or CBE by physicians, 10 questions were about assessing attitude towards screening methods, and finally 9 questions for assessing performance of female BSE as well as CBE based on mammography.

The questions related to awareness were assessed based on three options of “yes”, “no”, and “I do not know” and they were scored 2, 0, and 1, respectively. The questions about attitude were assessed based on five-options ranked based on 5-score Likert scale. With regard to direct or indirect questions, the options were scored. Score 5 was for the option “I completely agree”, 4 for the option “I agree”, 3 for “I have no opinion”, 2 for “I disagree”, and 1 for “I absolutely disagree”. Validity of the study instrument was determined by experts’ content validity method and the reliability of it was determined by Cronbach’s alpha. Validity and reliability of the questions related to awareness equaled 88.0%, attitude questions 79.0% and performance 91.0%. The questioners attempted to distribute the questionnaires to people included in the statistical population and the questionnaires were collected after answering by participants.

Finally, collected data were analyzed by SPSS-17 statistical software. Analysis was done using descriptive statistics and inferential statistics. Associations were tested using Chi-square test and Pearson correlation coefficient.

RESULTS
A total of 1410 women have successfully completed the study. The mean age of the women was 35.71±11.60 years. In terms of marital status, 87.0% of them were married and 8.4% were single. Regarding employment condition, 87.9% of them were housewives and 14.7% were employees. The mean of education period of the women was 9.46±4.6 which 17.6% of them had experienced 2-5 years of education and 50.0% had experienced 6-12 years of education. In addition, 9.5% of the women had a positive family history of breast cancer, 6.1% of them had a history of the disease among their first degree relatives and 10.0% had a history of the disease among their second degree relatives.
According to the results, the mean of awareness scores was 51.0±9.2 with degree of confidence of 95% (50.60-51.40). Moreover, the mean of attitude scores was 72.0±12.4 with confidence degree of 95% (71.40-72.56). There was no significant relationship between awareness and demographic variables (except for employment). Employed women’s awareness was more than others (P=0.003). Moreover, there was no significant relationship between night work and breast cancer. Based on the hypothesis of the present study, there was a positive relationship between awareness and positive attitude with a correlation coefficient of 0.54. The results related to women’s awareness towards screening methods showed that mean of awareness towards breast cancer is 63.70%, the mean of awareness towards BSE is 65.13%, the mean of awareness towards CBE is 68.0%, and the mean of awareness towards mammography is 69.70% (Table 1). Also, there is a significant relationship between two variables of attitude and awareness of women towards regular use of screening methods and BSE (P<0.001). However, there was no significant relationship between attitude and variables such as demographic characteristics, family history of disease, and individual’s experience of breast cancer.

Table 1. Knowledge of women aged greater than 20 years in the north of Iran towards breast cancer

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>%95 of confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness towards breast cancer</td>
<td>63.7</td>
<td>13.7</td>
<td>63.0-64.4</td>
</tr>
<tr>
<td>Awareness towards BSE</td>
<td>65.13</td>
<td>16.0</td>
<td>64.0-66.0</td>
</tr>
<tr>
<td>Awareness towards clinical history of breast cancer</td>
<td>68.0</td>
<td>15.0</td>
<td>67.2-68.8</td>
</tr>
<tr>
<td>Awareness towards mammography</td>
<td>69.7</td>
<td>13.4</td>
<td>68.9-70.4</td>
</tr>
</tbody>
</table>

* BSE= Breast Self-Examination

The results of the study showed that 4.2% of respondents absolutely disagreed with the question of “I do not believe in doing BSE, CBE and mammography”, 35.5% of them disagreed with it, 8.4% neither agreed nor disagreed with it, 7.0% agreed with it and 6.2% absolutely agreed with it. Moreover, 0.4% of respondents absolutely disagreed with the question of “I believe that screening helps the diagnosis and treatment of breast cancer”, 1.1% disagreed with it, 8.1% neither agreed nor disagreed with it, 51.5% agreed with it, and 38.8% absolutely agreed with it. In addition, 41.9% of respondents absolutely disagreed with the question of “I do not like to
increase my worry by doing screening”, 37.2% disagreed with it, 6.1% neither agreed nor disagreed with it, 11.4% agreed with it, and 3.3% absolutely agreed with it. Finally, 44.1% of respondents absolutely disagreed with the question of “It makes me embarrassed to do BSE, CBE or mammography”, 32.8% disagreed with it, 6.7% neither agreed nor disagreed with it, 11.6% agreed with it, and 4.1% absolutely agreed with it (Table 2).

The results also indicated that 46.0% of women had an experience of doing BSE, and 52.1% had never done it. 14.3% of women did BSE monthly. Moreover, 38.0% of women had an experience of CBE and 61.0% of them had never experienced it. 20.7% of women did CBE yearly. 13.7% of women had an experience of doing mammography, and 83.2% had never done it. 13.5% of women did it yearly (Tables 3 & 4).

There is a significant relationship between marital status and regular BSE among married women (P<0.001). Also, there is a significant relationship between both CBE and mammography and personal history of breast cancer (P=0.001).

**Table 2.** Participants’ answers to the questions about determining type of attitude towards screening methods of breast cancer for women aged greater than 20 years in the north of Iran.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I absolutely disagree</td>
</tr>
<tr>
<td>Breast cancer prompts families to undergo screening method</td>
<td>1.8</td>
</tr>
<tr>
<td>Breast removal in friends with breast cancer prompts me to do screening method</td>
<td>1.0</td>
</tr>
<tr>
<td>I believe that screening helps the diagnosis and treatment of breast cancer</td>
<td>0.4</td>
</tr>
<tr>
<td>I do not like to increase my worry by doing screening</td>
<td><strong>41.9</strong></td>
</tr>
<tr>
<td>I think that I will never have breast cancer, then there is no necessity to do screening</td>
<td><strong>46.0</strong></td>
</tr>
<tr>
<td>I do not do screening, because I am afraid of having breast cancer</td>
<td><strong>42.5</strong></td>
</tr>
</tbody>
</table>
### Table 3. The rate of doing BSE, CBE and mammography in women aged greater than 20 years in the north of Iran

<table>
<thead>
<tr>
<th>Question</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
</tr>
<tr>
<td>I have an experience of BSE</td>
<td>64.0</td>
</tr>
<tr>
<td>I have an experience of CBE</td>
<td>38.5</td>
</tr>
<tr>
<td>I have an experience of mammography</td>
<td>13.7</td>
</tr>
</tbody>
</table>

* BSE= Breast Self-Examination, ** CBE= Clinical Breast Examination

### Table 4. The interval of doing BSE, CBE and mammography in women aged greater than 20 years in the north of Iran

<table>
<thead>
<tr>
<th>Question</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
</tr>
<tr>
<td>It makes me embarrassed to do BSE, clinical examination or mammography</td>
<td>44.1</td>
</tr>
<tr>
<td>I do not believe in doing BSE, CBE or mammography</td>
<td>42.7</td>
</tr>
</tbody>
</table>

* BSE= Breast Self-Examination, ** CBE= Clinical Breast Examination

### DISCUSSION

The present study was performed among women aged greater than 20 years in north of Iran and their knowledge, attitude and practice towards screening methods of breast cancer include BSE, CBE and mammography were investigated. The findings of the study indicated that general awareness and attitude of the women towards breast cancer and its screening methods were moderate and statistically, there was a good relationship between the two items that this finding confirmed the hypothesis of the study. It indicated the fact that with increasing awareness, women's attitude towards breast cancer would change in a positive way. Among the demographic variables, only employment had a significant relationship with the knowledge of participants, so that employer women were more aware than others, but regarding the attitude, none of the variables were significantly associated with women's attitudes towards screening methods. Nearly half of the women believed that screening helps the diagnosis and treatment of breast cancer and about half of them thought that they will never have breast cancer, so there is no necessity to do screening. About half of the participants stated that it makes them embarrassed to do BSE, clinical examination or mammography and less than half of them did not believe in doing BSE, CBE or mammography. The results showed that rate of doing BSE was more in married women and those who had a personal history of breast cancer. Regarding the
Performance of women in the field of BSE was determined that less than two-thirds of respondents had an experience of BSE, but only one-thirds of them experienced CBE. Also, the experience of mammography was observed in only 13.0% of the women. On the other hand, most of these women did not regularly repeat the screening methods. Several studies conducted in different populations of women about knowledge, attitudes and practice towards breast cancer screening methods showed various results. Mahvari, et al. (2004) showed that level of education, personal history of breast diseases and family history of breast cancer had a significant relationship with breast cancer screening tests [23]. In the study of Nekhlyudou, et al. (2003) was determined Some factors such as women’s employment and socioeconomic status were significantly correlated such with breast examination and breast cancer screening in women aged less than 50 years [24]. Heidari, et al. (2008) with their study indicated that only 8.3% of women were aware of breast cancer screening methods. About BSE 21.6% and about mammography 3.4% had good knowledge. Overall knowledge of breast cancer screening was insufficient in 67.4%. There was statistically significant relationship between knowledge of breast cancer screening and level of education, history of individual breast disease, and history of breast cancer in their families [10]. Shirayzdi, et al. (2014) found that 86.8% participants had moderate to poor knowledge of breast cancer screening methods. There was a significant relationship between the knowledge and educational level and age. 70.8% participants had moderate attitude. There was a significant relationship between the attitude, age and job. 65.8% participants had poor practice. In addition, there was a significant relationship between the practice and all variables other than familial history [25]. In the study of Alharbi, et al. (2012) was determined that 67.5% of the participants declared that they had information about breast cancer. Of the participants, 18.5% reported positive family history of breast cancer, 49.9% did not know how to practice BSE, and 29.0% knew the procedure but never applied it. Moreover, 81.9% has no breast examination by health professionals and 85.7% did not know what the mammography is [8]. El Mhamdi, et al. (2013) in your study showed that 92% of women had poor knowledge of the specific risk factors for breast cancer and 63.2% had poor knowledge of the screening methods. Proper practice of breast cancer screening was observed in 14.3% of cases. Their results showed that good knowledge of risk factors and screening methods, higher level of education and positive family history of breast cancer were independently correlated with breast cancer screening practice [26]. The results of the study of Olowokere, et al. (2012) showed that 52.7% of the women had adequate knowledge about breast cancer risk factors and symptoms. Regarding the women’s awareness about breast cancer screening methods, 52.8% and 51.7% of women have heard about BSE and CBE, respectively. However, few numbers of respondents (3.9%) were aware about mammography and these are people who did it for the purpose of diagnosing breast problem. Majority of the women (72.8%) did not practice BSE which is the most readily available screening method [19]. Elobaid, et al. (2014) showed that almost half (44.8%) of women who never had a CBE and 44.1% of women who never had a mammography expressed a lack of knowledge about the existence of these screening techniques [27]. In another study by Donnelly, et al. (2013) was determined that one quarter of the women stated their doctors talked to them about breast cancer, and less than half of the women interviewed believed breast cancer can be prevented. The main reasons given for not planning BCS were lack of a doctor’s recommendation, fear, and embarrassment [28].
Several Factors such as increased anxiety, problems of doing BSE, fear of bad results, embarrassment and cultural problem are the barriers in the way of doing BSE and other breast cancer screening methods. The results of the present study showed that there was a positive correlation between women's attitudes and knowledge. Thus, by increasing knowledge, attitude has also increased. The results of this study showed that a statistically significant relationship between knowledge and preventive practice in women, so that increased awareness can be effect on the individual’s performance. So probably enough knowledge about a disease like breast cancer can cause a favorable attitude about the disease and creating preventive behaviors.

CONCLUSION
The results of this study showed that knowledge and attitude of women towards breast cancer screening methods was moderate, but their practice was poor for these tests. Whatever the level of awareness of target group in the community is higher, and the positive attitude have been reinforced in this group, surely, their performance will be better in this regard which is effective in reducing mortality from common cancers in women. Since in this study, the women’s awareness seems to be not satisfactory, health planners need to pay more attention to education and promotion of screening methods. In order to implementation of health behavior, in addition to taking knowledge about the behavior and its implementation, people should believe that health behaviors can maintain their health and will protect them against the disease. Understanding the causes of lack of preventive behaviors and health care by the patients in the community is very important. Authorities seek to providing facilities at health centers for screening of the disease. Finally, this study emphasizes on the impact of awareness of women in the prevention of breast cancer and improving the screening process through promoting their performance.

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CONFLICT OF INTEREST
None declared.
References