Abstract

Introduction:
Breast cancer is one of the most common diseases among women, accounting for 19% mortality from cancers. Treatment is achieved if diagnosed in early stages. The aim of this survey was to determine the women’s level of knowledge about symptoms of breast cancer, breast self-examination and mammography.

Materials and Methods:
This descriptive-analytic study done on 615 married women aged 20 years and older. The data were collected through a valid and reliable questionnaire. Data were analyzed through SPSS, version 11.5. To analyze the data, descriptive statistics, non-parametric test Kruskal-Wallis, Mann Whitney, Chi square and fisher exact tests were used to find the relationship between the mentioned variables.

Results:
According to the results, the median knowledge score was 53.3. Knowledge based on individual characteristics was significantly related to the family history, employment and education level.

Conclusion:
This survey shows that the women’s knowledge about the mentioned variables was at a moderate level. Since raising knowledge of women and increasing their sensitivity to do regular and appropriate breast self-examination and mammography are very important, continuous educational programs seem to be necessary in order to promote their knowledge about how to detect breast cancer.

Keywords: Breast Self-examination, Mammography, Knowledge, Breast Cancer

Introduction
Breast cancer constitutes the most common malignancy in women, the third most common malignancy overall, and is responsible for 19% of cancer-related mortality in women (1). According to the World Health Organization (WHO) reports in 2007, breast cancer was the most frequent type of cancer in women of the developed and developing countries. In United Arab Emirates, the age standardized incidence rate of breast
cancer was reportedly 15.5% per 100,000 in 1998. According to the Iranian cancer registry report in 2007, breast cancer is the top malignancy of Iranian women with an age standardized incidence rate of 27.1% per 100,000 women, which places it as the first malignancy in all provinces except Ardabil (third after gastric and esophageal cancers) and Kohgiluye-and-Boyerahmad (second after skin cancer) (2). According to this report, Fars province is the fourth Iranian province in terms of breast cancer with an age standardized rate of 29.22 per 100,000 (3).

Most Iranian women are not sufficiently familiar with breast cancer and the methods of early detection, resulting in delayed diagnosis of the disease where treatment is often unsuccessful (4). Fortunately, very efficient methods have been devised to treat breast cancer; if diagnosed in a timely manner, therapy is quite successful and most patients may return to normal life.

Three common methods of early diagnosis for breast cancer include:
1- self examination
2- examination by healthcare personnel and physicians
3- breast imaging (mammography) (4).

Correct examination of the breasts on a monthly basis will enable the person to become familiar with the features of her own breasts, thus making sure about the normality of its structure every month and detecting any change in preliminary stages. If all women perform self-examination regularly and undergo physical examination and mammography according to the schedule, 95% of breast cancers may be prevented from advancement (5).

In a study on breast cancer patients as the case group and healthy women as the control group, it was observed that only 29.4% of women in the control group were aware of early detection methods for breast cancer (6). In a study on the impact of education on awareness and attitude of female students towards breast self-examination, 76.4% of students had poor awareness prior to education (7). Jarvandi reported that 34% of teachers in Tehran had poor knowledge of breast self-examination (8).

Given the high prevalence of breast cancer in Fars province, poor awareness of women of detection methods as indicated by most studies, the importance of timely diagnosis in determining prognosis, as well as the impact of awareness on screening programs, we conducted the present study to evaluate women’s awareness of breast cancer screening methods.

Materials and Methods
This is a qualitative-analytic study conducted in 2009 in all urban and rural healthcare centers of Jahrom. Data were collected using a questionnaire devised by the author. The questionnaire’s content validity was confirmed by three experts in midwifery and gynecology, and its reliability was confirmed with a Cronbach’s alpha of 74.6%. The questionnaires were completed by 6 healthcare personnel for all women aged 20 years of higher referring to the healthcare centers. The interviewers were trained in a 3-hour session.

The sample size of the study was determined to be 531 individuals based on the previous similar studies, awareness of 33%, 95% confidence interval, and accuracy of 0.04. A total of 615 questionnaires were completed. Samples were selected in a randomized manner from a list of married women aged 20 years or higher in healthcare centers. The samples were chosen by drawing lot, they were contacted on telephone, and, if willing, they were interviewed for the questionnaire. If the individual declined, another woman would be selected to replace her. The number of cases selected from each healthcare center was determined according to the ratio of people covered by the center to the total study population.

The questionnaire consisted of demographic information (age, occupation, ...
number of children, education level, residence) and 17 questions with three options, 4 questions dealing with awareness of breast cancer symptoms, 8 dealing with manner of self-examination, 3 dealing with awareness of mammography, and 2 questions with two options dealing with performance of self-examination and family history of breast cancer. Each correct answer was scored 1, and each incorrect answer was scored 0. The total sum of scores was calculated out of 100.

Data were analyzed on SPSS software version 11.5 using descriptive statistics, distribution of frequency, mean and standard deviation. In studying the relationship between awareness score and associated factors, as the data were not normal, we used nonparametric tests of Kruskal-Wallis, Mann-Whitney, chi-square, and, if indicated, Fisher’s exact test.

Results
In the present study, we evaluated 615 women aged 20 years or older in terms of awareness for breast cancer and its associated issues. 63.1% of these women resided in rural areas, and 57.6% were aged 20-29 years. Most women (89.3%) were house-makers, 52.8% had education levels of below high school diploma, and 50.7% had two or more children. 88.6% of women mentioned no history of cancer in their family.

The mean awareness score for breast self-examination and mammography was 53.3, ranging from 0 to 93.3. In this study, we compared the individuals’ awareness based on their personal characteristics. Our findings indicate lack of a significant relationship between age, residence, and number of children with awareness, as well as the presence of a significant relationship between family history of disease and awareness. In other words, women without a family history of breast cancer tended to be less aware of the disease (p=0.016).

The awareness of employed women was significantly lower compared to house-makers (p=0.002). Also, a significant relationship was found between education level and awareness. In other words, women with high school diploma or higher certificates tended to be better aware (p=0.001). We found a significant relationship between breast self-examination and awareness; i.e. individuals who performed the examination had higher awareness scores compared to those who did not (p=0.001) (Table 1).

In this study, we investigated the performance of breast self-examination based on personal characteristics and observed a significant relationship only in the case of education level (p=0.0165). In addition, 403 (65.5%) women participating in the study had no knowledge of mammography screening.

Discussion
We found a significant relationship between awareness of breast cancer symptoms, breast self-examination and mammography with education, family history and employment. Another study in Shahr-e-Kord indicated a significant relationship between education and family history with breast self-examination (9).

Also, a study in Ramsar demonstrated that with increasing level of education in women, their awareness of breast cancer symptoms improved (10). Findings indicate a relationship between awareness and performance of self-examination. In other words, women who performed self-examination had better awareness of breast cancer symptoms, manner of examination and mammography. The results of the study conducted in Ramsar are consistent with our findings (10). According to a study in Tabriz, the most important cause of abstaining from breast self-examination was not knowing how to perform it (11). A Turkish study investigating the impact of education on awareness and attitude of women about breast self-examination demonstrated that after provision of training sessions, the frequency of breast self-examination increased (12). In
general, different studies indicate a considerable relationship between self-examination and awareness (13, 14), which is consistent with our findings.

Table 1: Comparison of awareness in married women aged 20 years or higher referring to healthcare centers of southern Iran based on personal characteristics and performance of breast self-examination

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variable Grouping</th>
<th>Count</th>
<th>Mean Score</th>
<th>Minimum</th>
<th>Maximum</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Children</td>
<td>0</td>
<td>121</td>
<td>53.3</td>
<td>6.67</td>
<td>86.67</td>
<td>0.127</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>182</td>
<td>46.6</td>
<td>0</td>
<td>93.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 and more</td>
<td>312</td>
<td>53.3</td>
<td>0</td>
<td>86.67</td>
<td></td>
</tr>
<tr>
<td>Family History</td>
<td>Positive</td>
<td>70</td>
<td>53.3</td>
<td>0</td>
<td>93.3</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>545</td>
<td>46.6</td>
<td>0</td>
<td>86.67</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>Employed</td>
<td>66</td>
<td>53.3</td>
<td>0</td>
<td>93.3</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>House-maker</td>
<td>549</td>
<td>60</td>
<td>0</td>
<td>86.67</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Illiterate</td>
<td>24</td>
<td>46.6</td>
<td>6.67</td>
<td>80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Below high school</td>
<td>325</td>
<td>53.3</td>
<td>0</td>
<td>93.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High school and higher</td>
<td>266</td>
<td>57.5</td>
<td>0</td>
<td>86.67</td>
<td></td>
</tr>
<tr>
<td>Residence</td>
<td>Urban</td>
<td>277</td>
<td>53.3</td>
<td>0</td>
<td>86.67</td>
<td>0.597</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>388</td>
<td>53.3</td>
<td>0</td>
<td>93.3</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20-29</td>
<td>354</td>
<td>53.3</td>
<td>0</td>
<td>93.3</td>
<td>0.991</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>199</td>
<td>53.3</td>
<td>0</td>
<td>86.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40-58</td>
<td>62</td>
<td>50</td>
<td>6.67</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Self-Examination</td>
<td>Yes</td>
<td>235</td>
<td>53.3</td>
<td>6.67</td>
<td>93.3</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>380</td>
<td>46.67</td>
<td>0</td>
<td>86.67</td>
<td></td>
</tr>
</tbody>
</table>

According to our findings, no relationship was found between awareness and number of children, residence, and age. Similarly, other studies have not reported a significant relationship between personal characteristics and awareness, attitude and performance of individuals (15-18).

In our study, 38.2% of women performed self-examination. 18.8% of women in Tabriz, 28.3% of women in Shiraz, and 14.64% of female nurses in Yazd performed self-examination on a regular, monthly basis (12, 19, 15). In Ramsar, 13.5% of women had performed breast examination at least once (11. An American study reported that 58% of women performed self-examination (20). Choudhry et al studied South Asian women residing in Canada to conclude that 49% of them had performed self-examination at least once in their lifetime and 12% performed the examination on a monthly basis (21). Patista et al reported that 34.7% of women performed breast self-examination regularly and on a monthly basis (22). In San Francisco, Long reported that 51% of homeless women performed breast self-examination (23). Although annual physician visits and mammography constitute the screening program for breast cancer, low costs and simplicity have made self-examination more useful and applicable in developing countries (24). The results of breast cancer screening studies in Canada indicate that self-examination may prove beneficial in countries like Iran, where breast cancer is a public health challenge (25). On the other hand, some researchers believe that breast self-examination not only fails to reduce breast cancer mortality, but also increases the rate of unnecessary biopsies and thus recommend against it. Nevertheless, self-examination is still a useful screening method for early diagnosis of breast cancer and raising the awareness of the society (24-26).

In the present study, we found a significant relationship between self-examination and level of education which is inconsistent with findings of Faghyehsafaii and Mojahed (15, 27). Patista et al did not find a significant relationship between self-examination and...
family history of the disease (22, 28), while some studies have found otherwise (19, 29-30). Studies conducted in Tabriz, Shiraz and Nigeria found no relationship between age and breast self-examination (12, 19, 31), while others found an inverse relationship (19, 30). In a study by Karimi and Sam, no significant relationship was found between self-examination in women and their employment and residence (11), which is consistent with our findings. In the present study, only one question was assigned to self-examination; as one question might not be sufficient for evaluating the performance in terms of correct procedure and frequency of performance, it is possible that the relationship between breast self-examination and certain factors might have been missed. It appears that future studies need to focus on more details.

In the present study, only 34.5% of participants were aware of the breast cancer screening program with mammography. As our questionnaire did not inquire about mammography, it is possible that only a small fraction have actually undergone the procedure. Only 3.3% of women in Tabriz and 6.5% of those in Chalus were reported to have undergone mammography (11, 32).

Therefore, considering our findings and those of other studies, it is essential to plan for notification of women about the importance of mammograms.

**Conclusion**

The present study indicates an intermediate level of awareness of breast cancer symptoms, self-examination, and low levels of knowledge about breast cancer screening program with mammography. As early diagnosis of breast cancer plays a pivotal role in prognosis and women’s awareness raises their sensitivity towards regular and correct performance of self-examination and mammography, it is necessary to plan for educational programs via public media such as radio, television and the press to improve women’s awareness about diagnosis of breast cancer and correct performance of self-examination.

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**References:**


