The Knowledge and Practice of Women Referred to the Health Centers Affiliated to Ahvaz' University of Medical Sciences on Breast Cancer and its Screening Methods

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A R T I C L E I N F O	**A B S T R A C T**
Article type: Original article	***Background & aim:*** Breast cancer is recognized as the most common type of cancer among Iranian women. Cancer screening and early diagnosis are among the most effective strategies to reduce the associated mortality and healthcare costs. Accordingly, the aim of this study was to investigate the level of knowledge and practice of breast cancer screening among women referred to hospitals affiliated to Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
	Methods: This cross-sectional, descriptive, analytical study was conducted on 70 women, referred to hospitals affiliated to Ahvaz University of Medical Sciences. The subjects were randomly selected via cluster sampling. For data collection, a questionnaire consisting of three parts, i.e., demographic, knowledge, and practice information, was used. For statistical analysis, Chi-square test was performed, using SPSS version 16.
	Results: The results showed that the majority of the patients were married and within the age range of 35-39 years. Most participants (42.9%) had poor knowledge of breast self-examination. Based on the findings, knowledge and practice of breast cancer screening were not significantly associated with age or educational level. Nevertheless, a significant relationship was found between the knowledge level and marital status of the subjects.
	Conclusion: Based on the findings, women's knowledge and practice of breast cancer screening were quite poor. Therefore, it is suggested to promote the current level of knowledge in order to prevent delayed diagnosis.

Introduction

Breast cancer is the most common type of cancer among women worldwide, accounting for 14% of total cancer deaths in females in 2008 (1, 2). Although the prevalence of breast cancer in developed countries is higher than developing countries, most cases of mortality related to breast cancer occur in developing countries (69%).

In Iran, similar to most other countries, breast cancer is one of the important causes of death among women. In 2014, the prevalence of this cancer in Iran was reported at 21.4 cases in 100,000 women regardless of age and 17 cases in 10,000 women by considering the factor of age (age-standardized rate) (1). Breast cancer is most prevalent among 35- to 44-year-old women (3, 4). According to statistics, Tehran, Isfahan, and Yazd were reported to have the highest incidence rates during 2004-2008 in Iran (2).

The high prevalence of breast cancer highlights the need for early detection. In fact, timely diagnosis can promote the available treatment options for affected women and thereby improve the survival rates (5). Survival in cases with tumors less than 5 cm in size has been reported to

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be above 98%; as a result, researchers have focused on the early detection of breast cancer (6). In other words, screening for breast cancer can help diagnose the invasive type in the primary stages (7).

Although mammography cannot prevent breast cancer, it can increase the survival rate through early detection (8). Knowledge of breast cancer and positive attitude are influential in women's decision to participate in screening programs (9). Given the absence of regular prevention and screening programs for cancer management in Iran and scarcity of knowledge about the risk factors, signs, and symptoms of breast cancer, advantages of screening programs and cancer clinics for patients, especially women with breast cancer, cannot be discarded (10).

According to several studies, improving the level of knowledge and social attitude towards breast cancer can have positive effects on women's screening behaviors (10-13). Breast cancer is the most common cancer in the world and the second leading cause of cancer-related death, following lung cancer. The typical features of breast cancer include early onset and diagnosis at advanced stages (10, 13, 14).

In Iran, despite limitations in cancer registry, breast cancer has been specified as the most common malignancy among Iranian women (15). In Iran, the patients' age at the onset of breast cancer is 10 years lower than developed countries; in fact, the most common age of cancer development is 45-54 years in developed countries (16). In general, global statistics have revealed an increase in the incidence of breast cancer, which is even more evident in developing countries (despite the lower prevalence of this disease) (17).

Considering the significance of early detection of breast cancer in physical and mental health of women and the importance of breast self-examination in the diagnosis of breast cancer, we aimed to investigate women's knowledge and attitude towards this disease and the screening methods in Ahvaz, Iran.

Materials and Methods

The present cross-sectional, descriptive, analytical study was conducted on 70 women above 25 years, referred to Golestan, Razi, Imam Khomeini, and Sina hospitals, affiliated to Ahvaz Jundishapur University of Medical Sciences in 2014. The participants were selected through random cluster sampling. For this purpose, four teaching hospitals in Ahvaz were selected, and then, a total of 70 women were chosen as the study sample. During the study (three months), all women, who referred to the healthcare centers and were considered eligible, were selected as the study population. Informed consent forms were obtained from all the participants.

A total of 70 subjects were selected among women aged above 25 years and were asked to complete the questionnaire. In order to complete the questionnaire, the study objectives were explained to the participants. Women who did not consent to participate in the study were excluded from the analysis. The data collection tool was a short, structured, self-made, standardized questionnaire, consisting of three major sections:

1) Personal traits (four questions): age, educational level, marital status, and history of breast diseases.

2) Knowledge of breast cancer and screening methods (nine questions): knowledge on the risk factors for breast cancer, information about the methods of breast cancer detection, knowledge of the time of breast self-examination, age of starting breast self-examination, time interval between breast self-exams, possible symptoms of breast cancer, age of starting mammography, time interval between mammograms, and sources of information.

3) Practice of breast cancer screening (four questions): breast self-examination, time interval between breast self-exams, performance of mammography, and time interval between mammograms.

After designing the first draft of the questionnaire, several faculty members were asked to assess its validity, and their expert opinions were applied accordingly. In addition, the reliability of the questionnaire was assessed, using Cronbach's alpha (knowledge: 88% and practice: 83%). After preparing, typing, refining, and piloting the questionnaire, they were distributed among the subjects.

The necessary guidelines were given to the participants for completing the questionnaire. Follow-up was performed in order to eliminate any shortcomings or related problems. Next, all the completed questionnaires were collected and

numbered. After scoring, all the information was entered into a computer in codes and the results were extracted.

For data analysis, Pearson's correlation coefficient and Chi-square tests were performed, using SPSS version 16. P-value less than 0.05 was considered statistically significant. This study was extracted from a research project, approved by the Research Council of Islamic Azad University of Ahvaz.

Results

The present results showed that the majority of the subjects (40%) were within the age range of 35-39 years. On the other hand, the minority of the participants (17.15%) were within the age range of 25-29 years. Overall, the study population consisted of middle-aged women (Table 1). As the results indicated, the majority of the subjects (78.6%) were married and most of them (85.8%) had a bachelor's degree. The findings indicated that 94.3% of the subjects had no history of breast diseases (Table 1).

Table1. The frequency distribution, percentage, and mean (±SD) of subjects' knowledge and practice of breast cancer screening with respect to age, educational level, marital status, and history of breast diseases

Knowledge and practice scores	Frequency N (%)	Practice score Mean±SD	Knowledge score Mean±SD
Age (years)			
25-29	12 (17.15)	1.6±3.3	6.7±4.9
30-34	15 (21.42)	5.6±2.6	6.3±4.7
35-39	28 (40)	4±4.6	5.8±4.4
≥ 40	15 (21.43)	2.4±4.6	6.1±4
Educational level			
Associate degree	5 (7.1)	4±4.7	5.7±6.9
Bachelor's degree	60 (85.8)	3.7±5	6.3±4.3
Master's degree	5 (7.1)	1±2	4±2.7
Marital status			
Single	13 (18.6)	3.9±5.5	6.5±4.7
Married	55 (78.6)	3.5±4.8	6.2±4.4
Divorced	1 (1.4)	0±0	0±0
Widow	1 (1.4)	0±0	3±0
History of breast diseases			
Yes	4 (5.7)	6.7±6.5	6.8±7.2
No	66 (94.3)	3.4±4.8	6±4.3

The findings revealed that only 25.7% of the subjects considered breast self-examination as an early detection method of breast cancer, and 24.3% were aware of the proper time for performing breast self-exams. The majority of the subjects (48.6%) were not familiar with the correct method of breast self-exam, and 17.2% believed that using the flat pads of the fingertips of the three middle fingers was the proper method for self-examination. The results also suggest that the majority of the subjects (42.8%) were familiar with the one-month interval for breast self-exams, while 32.9% had no information in this area. Generally, 42.9% of the studied subjects (the majority) had poor knowledge of breast self-examination.

Based on the findings, knowledge of breast cancer was not significantly related to age (P=0.24) or educational level (P=0.18). However, there was a significant association between the knowledge level and marital status (P<0.05). As the results revealed, knowledge of breast cancer screening in married subjects was significantly higher than single subjects (P=0.005). Moreover, according to the findings, practice of breast cancer screening had no significant relationship with age (P=0.77), educational level (P=0.15), or marital status (P=0.44) of the subjects.

Furthermore, 24.3% of the subjects were unaware of the early detection methods of breast cancer, 32.8% were familiar with mammography, 17.2% knew about clinical breast examination, and 25.7% recognized breast self-examination as a screening method of breast cancer.

Table 2. Frequency distribution and percentage of subjects' knowledge about the risk factors for breast cancer and early detection methods

Parameters	Good	Moderate	Weak
	N (%)	N (%)	N (%)
Knowledge of risk factors for breast cancer	1 (1.4)	15 (21.4)	54 (77.2)
Knowledge of breast cancer early detection methods	2 (2.8)	7(10)	61 (87.2)

Table 3. Frequency distribution and percentage of subjects' knowledge in terms of age, educational level, marital status, and history of breast diseases

Frequency and percentage of knowledge level	Good	Moderate	Weak	Test results Chi-square
	N (%)	N (%)	N (%)	
Age (years)				
25-29	5 (35.8)	3 (21.4)	6 (42.8)	df=69
30-34	4 (25)	3 (18.8)	9 (56.2)	P=0.24
35-39	5 (18.5)	8 (29.7)	14 (51.8)	r=0.1
≥ 40	3 (23.1)	4 (30.8)	6 (46.1)	
Educational level				
Associate degree	1 (25)	1 (25)	2 (50)	df=69
Bachelor's degree	15 (24.2)	22 (35.5)	25 (40.3)	P=0.18
Graduate degree	0 (0)	1 (25)	3 (75)	r=0.189
Marital status				
Single	7 (63.6)	2 (18.2)	2 (18.2)	df=69
Married	13 (23.2)	23 (41.1)	20 (35.7)	P=0.005
Divorced	0 (0)	1 (50)	1 (50)	r=0.125
Widow	0 (0)	0 (0)	1 (100)	
History of breast diseases				
Yes	3 (75)	1 (25)	0 (0)	df=69
No	13 (19.7)	22 (33.3)	31 (47)	P<0.001
				r=0.326

Table 4. Frequency distribution and percentage of subjects' practice of breast cancer screening in terms of age, educational level, marital status, and history of breast diseases

Frequency and percentage of subjects' practice level	Good	Moderate	Weak	Test results Chi-square
	N (%)	N (%)	N (%)	
Age (years)				
25-29	1 (7.7)	3 (23.1)	9 (69.2)	df=69
30-34	2 (11.8)	5 (29.4)	10 (58.8)	P<0.77
35-39	1 (4)	10 40)	14 (56)	r=0.023
≥ 40	2 (13.3)	3 (20)	10 (66.7)	
Educational level				
Associate degree	1 (20)	2 (40)	2 (40)	df=69
Bachelor's degree	0 (0)	17 (28.8)	42 (71.2)	P<0.15
Graduate degree	1 (16.7)	1 (16.7)	4 (66.6)	r=0.13
Marital status				
Single	0 (0)	4 (33.3)	8 (66.7)	df=69
Married	5 (9.1)	16 (29.1)	34 (61.8)	P<0.44
Divorced	0 (0)	1 (50)	1 (50)	r=0.008
Widow	0 (0)	1 (100)	0 (0)	
History of breast diseases				df=69
Yes	3 (60)	1 (20)	1 (20)	P<0.001
No	3 (4.6)	18 (27.7)	44 (67.7)	r=0.17

Overall, 87.2% of the subjects had poor knowledge about the early detection methods of

breast cancer.

The obtained results showed that the majority of the subjects (36.6%) considered lack of breastfeeding as the most important risk factor for breast cancer, while the minority (4.3%) regarded early menstruation (under 12 years) as the most important risk factor. In addition, 20.7% of the participants were unfamiliar with the potential risk factors for breast cancer. The overall results suggest that 82.9% of the subjects had poor knowledge of risk factors for breast cancer.

With regard to sources of information about breast cancer, the results showed that radio and television were the most common information sources (42.9%), while 21.7% of the subjects introduced healthcare centers as their main source. Also, the minority (1.4%) mentioned their friends, acquaintances, and parents as their information sources.

The results related to the practice of breast cancer screening suggest that 61.4% of the subjects did not perform breast self-examinations at all. In this study, only 26% of the subjects had attempted to perform self-exams within one-month intervals, while 55.5% had occasionally adhered to it. Tables 3 and 4 show the frequency distribution and percentage of subjects' knowledge and practice of breast cancer screening with respect to age, educational level, marital status, and history of breast diseases. Based on the correlation coefficient test results, there was a significant relationship between the knowledge and practice of breast cancer screening in thestudied subjects (P<0.01).

Discussion

In the present study, the majority of the subjects (42.9%) had poor knowledge about breast self-examination. The same results were reported in a study conducted by Behbahani et al. in which most women, referring to the healthcare centers of Sanandaj, Iran, had poor knowledge about breast cancer and screening methods (18).

According to the present results, knowledge level had no significant relationship with age or educational level. Also, in a study by Firoozeh et al., it was found that factors such as age and educational level do not affect subjects' knowledge of breast self-examination (19). Nevertheless, in this study, there was a

significant relationship between knowledge and marital status of the subjects. The results of a study conducted in Nigeria are consistent with the present findings (20).

According to the present results, subjects with a history of breast diseases showed better knowledge and practice of breast cancer screening, and there was a significant relationship between the knowledge level, practice, and history of breast diseases (P<0.001). In addition, the results of a study carried out by Ziayifard et al. revealed that family history of breast diseases is significantly associated with an increase in subjects' level of knowledge (21).

In the present study, 77.2% of the subjects had poor knowledge of the risk factors for breast cancer. Similarly, in a study by Radi, most subjects had poor knowledge of these factors (22). Also, in our study, 87.2% of the subjects had poor knowledge about the early detection methods of breast cancer, and only 25.7% were familiar with breast self-examination. In this regard, a study by Paolino and Arrossi in Argentina reported consistent findings (23).

In the present study, the majority of the subjects (42.9%) introduced radio and television as their main sources of information, while 27.1% mentioned healthcare centers as their major sources. In this regard, a study by Ghorbani et al. revealed similar findings (24). In addition, with respect to practice level, 61.4% of the subjects did not perform breast self-examination at all. The same results were obtained in a study by Ghazanfari et al., i.e., the majority of subjects did not have any breast self-exams (25).

In the present study, the subjects showed poor practice on breast cancer screening. Also, Abedzadeh et al. concluded that the overall practice of subjects in the field of breast self-exam was poor (26). In this study, only 26% of the participants attempted to perform self-exams within one-month intervals, while 55.5% had occasional exams. Also, the results of a study by Donnelly et al. indicated that less than one-third of women performed breast self-examinations (27). In the present study, there was a positive relationship between knowledge and practice. In this regard, Rastad

et al. carried out a study to assess the awareness and practice of women on breast self-examination in Fasa, Iran in 2011. The results showed a positive relationship between knowledge and practice (28).

The present study had several limitations. First, the psychological condition of the subjects might have affected their response. Second, the time and place of the study might have been unsuitable for the subjects while completing the questionnaires. Third, the research conditions might have been limited and the available scientific resources might have been inadequate. Finally, lack of cooperation between the researcher and the participants might have affected the findings, and response to questions might have been inaccurate.

Conclusion

The results of the present study showed that women referring to hospitals affiliated to Ahvaz University of Medical Sciences had poor knowledge and practice of breast cancer screening. In fact, other similar studies in Iran have reported almost consistent results. Overall, women constitute a large part of the society and are responsible for the education of their daughters as future mothers; also, maternal health plays an important role in the society's overall health. Therefore, according to the results, the need for education on diseases and prevention methods is strongly felt. As early diagnosis of breast cancer plays a pivotal role in disease prognosis and awareness can raise women's sensitivity towards regular and accurate performance of self-examination and mammography, it is necessary to plan educational programs through public media (such as radio, television, and the press) to improve their awareness about breast cancer diagnosis and self-examination. Therefore, it is suggested to increase the level of knowledge among women in order to prevent delayed diagnosis

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Conflicts of interest

The authors declare no conflicts of interest.

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