BREAST CANCER SCREENING KNOWLEDGE AND PRACTICE AMONG WOMEN IN SOUTHEAST OF IRAN

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Abstract- Breast cancer is the most common cancer in women. The mortality rate of breast cancer can be reduced by regular breast cancer screening program. This study was carried out to identify the knowledge and practice of women about breast cancer screening in Zahedan, southeast of Iran. In this cross-sectional study, 384 women were selected as an improbability sample of women referring to Qouds Maternity Hospital. Knowledge and practice of them about breast cancer screening were investigated through face-to-face interview based on a purposed questionnaire, and data were analyzed using descriptive and analytical statistics. Only 8.3% of women were aware of breast cancer screening methods. About breast self-examination 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 ($P < 0.001$). There was statistically significant and inverse relationship between knowledge of how to examine the breasts and knowledge about mammography with age ($P < 0.001$). Practices of women in Zahedan about breast cancer screening were very low. Only 4.5% of women performed breast self examination, on a regular basis, 4.1% had ever had a clinical breast examination, and %1.3 had a mammography throughout their life. Our findings suggest that knowledge and practice about breast cancer screening was relatively poor and it needs to be improved.

Acta Medica Iranica 2008; 46(4): 321-328.

Key words: Breast cancer, mammography, screening

INTRODUCTION

Breast cancer is the most common cancer in women and the second leading cause of death from cancer among them (1-4). Although the incidence of breast cancer in developing countries is relatively low (5), about 50% of all cases of breast cancer are diagnosed in these countries (6, 7). Based on a study during 1975–1990, Asia and Africa have experienced a more rapid rise in the annual incidence rate of breast cancer than that of North America and Europe (8, 9).

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 (2). Karachi Cancer Registry, the only population based cancer registry in Pakistan, reports breast cancer as the most common cancer (34.6% of cancer cases) among females. The age-standardized incidence rate (to the world population) was 69.1 per 100,000

Received: 19 Jun. 2006, Revised: 13 Oct. 2006, Accepted: 5 Jan. 2007

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averaged over the years 1998–2002, the highest recorded rate of breast cancer in Asia (9).

Breast cancer presents most commonly as a painless breast lump and in a smaller proportion with other symptoms. Breast 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 (1).

To participate in population-based screening programs, women must have knowledge and positive attitude toward these practices. Thus it is important to educate the public about importance of early detection of breast cancer by screening (1, 2, 5, 7). Breast cancer screening comprises breast self-examination (BSE), clinical breast examination (CBE) and mammography (1, 2, 5, 9-14). Unlike CBE and mammography, which require hospital visit and specialized equipments and expertise, BSE is inexpensive and is carried out by women themselves. Several studies, based on breast cancer patient's retrospective self-report on their practices of the exam, have established that a positive relation exists between performance of the exam and early detection of breast cancer. There is also evidence that most of the early breast tumors are self-discovered and that the majority of early self-discoveries are by BSE performers (1).

At the present time, routine mammography can not be recommended in developing countries due to financial issues and the lack of accurate data on the burden of breast cancer in these countries (2, 9). In Iran there is not a population-based mammography screening program and thus it seems that BSE may be considered a realistic approach to detection of breast cancer (6).

For women with symptomatic breast cancer, prolonged delay, defined arbitrarily as an interval greater than 3 months from first detection to time of diagnosis and treatment has been shown to be associated with increased tumor size and more advanced stage of disease and with poor long-term survival (1). The first population-based breast cancer screening program in the Islamic Republic of Iran was conducted in Shiraz during 1996-97. The attendance rate in the first stage was 76.7% but there was a significant difference among the different parts of the city ranging from 51.2% to 95.2%. Highest rates of attendance were seen among younger women (35-44 years) and middle socio-economic groups. Lowest rates were among those aged over 65 years and low socio-economic groups. The rate of detection by self-examination was similar to that by health personnel examination. At all stages of screening, positive findings were most common among the high socio-economic class. Attendance decreased steadily from first to last stages of serial screening (10).

Few studies have examined the knowledge, attitude and practice of women towards breast cancer in Iran (6, 10-14). These studies are often of small sample size and targeted women in special professions. There is currently no local study done on breast cancer screening knowledge and practices among women in Zahedan. This study aimed to examine both knowledge and practices among women referring to Qouds Maternity Hospital in Zahedan, southeast of Iran.

MATERIALS AND METHODS

A cross-sectional descriptive analytical study was conducted to determine knowledge and practices of women referred to Qouds Maternity Hospital in Zahedan, southeast Iran, during summer 2003. The study was approved by Ethics Committee of Zahedan University of Medical Sciences. Written informed consent was obtained from all subjects.

A total of 384 married women were selected as an improbability sample. Their mean age was 28.8 years (SD=8.4; range 15-60 years). Knowledge and practices of them about breast cancer screening were investigated through face-to-face interview based on a purposed questionnaire. The questionnaire contained items on the demographic characteristics of participants (age, educational level, ethnicity, socioeconomic status, personal and family history of breast cancer or disease, health insurance coverage), knowledge of breast cancer screening methods, BSE, CBE, mammography, and resource of their knowledge and practices of these screening methods.

Data were analyzed using descriptive statistics and analytical (chi-squared test) to examine the relationship between demographic data and knowledge and practices of these women about breast cancer screening. Differences of $P < 0.05$ were considered significant.

RESULTS

A total of 384 married women were selected as an improbability sample. Descriptive profile of women referring to Qouds Maternity Hospital is shown in Table 1.

Concerning breast cancer screening methods, 15.9% of women had average information, 75.8% had insufficient knowledge and 8.3% had good knowledge. About breast self-examination, 55.7% had insufficient knowledge, 22.7% had average knowledge and 21.6% had good knowledge. About mammography, 72.7% had insufficient knowledge, 24% had average knowledge and 3.4% had good knowledge.

Overall knowledge of breast cancer screening was insufficient in 67.4%, average in 22.9%, and good in 9.6% of these women. There was statistically significant relationship between overall knowledge of breast cancer screening and level of education ($P < 0.001$) (Table 2), and history of individual breast disease ($P < 0.001$) and history of cancer in their families ($P < 0.001$). There was statistically significant and inverse relationship between knowledge of how to examine the breasts and knowledge about mammography with age ($P < 0.001$) (Table 3).

Practices of women in Zahedan about breast cancer screening were in very low level. Only 4.5% of women performed BSE on a regular basis (monthly), 18.7% performed it occasionally, and 76.8% never performed BSE. Only 4.1% had ever had a clinical breast examination and only 1.3% had a mammography. The most common reason for this poor level of practices was that they thought it was not necessary.

There was a significant relationship between knowledge about breast cancer screening and practice of these women ($P < 0.001$).

Table 1. Descriptive profile of a sample of women referring to Qouds Maternity Hospital at Zahedan (n=384)

Demographic profile	Number	Percent
Ethnic group		
Sistani	132	34.3%
Balouch	151	39.3%
Others	101	26.3%
Educational level		
Illiterate	117	30.5%
Primary	91	23.7%
Diploma	86	22.4%
> Diploma	90	23.4%
Dwelling place		
Urban	341	88.8%
Rural	43	11.2%
Medical history		
Breast disease	12	0.03%
Family history	102	26.6%
Health insurance coverage	182	47.4%

Table 2. Knowledge of beast cancer screening among Zahedani women according to their educational level*

Educational level	Overall knowledge†			Knowing methods‡			BSE Knowledge§			Mammography knowledge¶		
	Poor	Average	Good	Poor	Average	Good	Poor	Average	Good	Poor	Average	Good
Illiterate	90.6	8.5	0.9	91.5	6.8	1.7	81.2	14.5	4.3	93.2	6	0.9
Primary	83.5	15.5	1	88	10	2	69.2	24.2	6.6	84.6	15.4	0
Diploma	62.5	30.2	7	76.7	19.8	3.5	46.5	27.2	25.6	64	29.1	7
> Diploma	25.5	41.1	33.3	41.1	28.9	27	17.8	26.7	55.3	42.2	51.1	6.7

Abbreviation: BSE, breast self-examination.
*Data are given as percent.
† X^2= 134.89, df= 6, P< 0.001.
‡ X^2= 104.84, df= 6, P< 0.001.
§ X^2= 120.72, df= 6, P< 0.001.
¶ X^2= 79.57, df= 6, P< 0.001.

Table 3. Knowledge of beast cancer screening among Zahedani women according to their age*

Age (years)	BSE knowledge†			Mammography knowledge‡		
	Poor	Average	Good	Poor	Average	Good
15-24	46.6	29.4	23.9	66.9	29.4	3.7
25-39	59.1	17	23.9	72.7	23.9	3.4
40-49	72.2	22.2	5.6	94.4	2.8	2.8
≥ 50	88.9	11.1	0	88.9	11.1	0

Abbreviation: BSE, breast self-examination.
*Data are given as percent.
† X^2= 19.66, df= 6, P=0.003.
‡ X^2= 13.23, df= 6, P= 0.04.

DISCUSSION

In this study, we found that knowledge and practice about breast cancer screening in women referred to Qouds Maternity Hospital in Zahedan was poor. About breast cancer screening methods, only 8.3%, about breast self-examination 21.6%, and about mammography 3.4% had good knowledge. Overall knowledge of breast cancer screening was insufficient in 67.4% of these women. There was statistically significant relationship between overall knowledge of breast cancer screening and level of education, history of individual breast disease and history of cancer in their families, and age.

A study in Nigeria indicated that education and employment in professional jobs significantly influenced knowledge of breast cancer. Women with education greater than high school and those employed in professional jobs such as nursing, teaching and sales had significantly higher knowledge scores compared with those employed in small businesses (1).

Similar to our findings, other investigators have reported that demographic characteristics such as higher levels of education and income, marital status, younger age, social support, knowledge and preventive attitudes, a history of breast diseases, a family history of breast cancer, having a regular physician, ethnic background and residence area are significant determinants of adherence to BSE practice (1, 2, 6, 10-14).

In our study practices of women were extremely low. Only 4.5% of women performed BSE on a regular basis, 4.1% had ever had a CBE, and 1.3% had a mammography throughout their life.

In Iran there is no national protocol for breast cancer screening programs, and both mammography and CBE are not carried out except on medical request. Therefore low rate of these practices among Zahedani women in our study would be expected. It seems that low level of education, low income, and insufficient health insurance coverage could be other reasons of poor knowledge and practices of women in our study.

The first population-based breast cancer screening program in the Islamic Republic of Iran was conducted in Shiraz during 1996-97. Highest rates of attendance were seen among

younger women (35-44 years) and middle socio-economic groups. Lowest rates were among those aged over 65 years and low socio-economic groups (10).

Among a cross-section of British women, Grunfeld *et al*. found that older women demonstrated poorer knowledge of risk factors for breast cancer (15); they noted that this poorer knowledge was also apparent among women of lower social economic status (SES). Investigations in the USA, and Australia have demonstrated that older women have poorer knowledge of key risk factors for various cancers. It has been suggested that older women may attribute non-lump breast symptoms to the aging process, and therefore ignore these warning signs of breast cancer (1). Furthermore, it has been argued that older adults, who may have a number of symptoms of other illnesses, should not be expected to seek help for symptoms that are not causing them any pain or that have little effect on their function (1, 16).

The results of a study in Nigeria suggest that community-dwelling women in Nigeria have rather poor knowledge of breast cancer. This may partly explain the late presentation seen in over 70% of women with the disease. A mean knowledge score of 42.3% with only 22.9% scoring 50.0% and above portray the abysmal level of ignorance about risk factors and common symptoms of breast cancer in Nigerian women (1).

In Saudi Arabia, where there is no obligatory screening program too, 12% of women attended the general clinic had practiced BSE before (16, 17); in our study 23.2% of women performed BSE before that is higher than that of Saudi women.

Haji-Mahmoodi *et al.* reported that 63% of female heath care workers claimed that they know benefits and correct method to examine their breasts, but despite their knowledge only 6% performed it monthly and 50% performed it occasionally (6). In our study there was a very little knowledge about this matter that could affect practice. Choudhry *et al.* showed that South Asian women with minimal knowledge of breast cancer did not engage in breast cancer detection practices (18).

Low level of BSE practice in our study was very similar to the practice of other Asian women living in different parts of the world (5, 6). A study of Asian women in Toronto and Chinese women in Hong Kong showed that only 12% and 16% of the women claimed to practice on a monthly basis (18, 19). Comparing the study findings of women in Africa, Nigeria (6, 20) clearly suggests that there is a significant similarity between performing BSE in these developing countries.

A study in Chamorro women in Southern California showed that 37% of respondents ever performed BSE, 93% ever had a CBE, and 77% had a mammogram. There was a significant correlation between CBE and higher educational attainment, married status, higher income, and health insurance coverage (21).

It has been proposed that cultural similarities or differences may contribute to such variations between developed and developing countries (6). Furthermore, an exploratory study of the knowledge and practice of BSE among 39 Middle Eastern Asian Islamic immigrant women residing in a major metropolitan U.S. city found that none of them had examined their breasts monthly during the past year prior to the study (22). Although the study did not explore the role of religion, it seems that a study of Islamic Women's breast cancer behavior would be an interesting area for further research. Montazeri *et al.* in a research in Iranian women reported that 90% of the women said that breast self-examination was not against their beliefs; 58% of the women preferred to be examined clinically by a female physician, but 47% said that clinical breast examination by a male physician is not against their Islamic beliefs; 46% of the women believed that they would not be able to detect abnormalities on breast self-examination, however only 6% performed breast self-examination regularly (monthly), and 44% stated they never examine themselves (23). They stated that there is a need for more education about breast cancer amongst Muslim women, especially in Muslim countries. There is a necessity for breast self-examination in developing countries such as Iran, as mammography may not be as widely accessible. Breast self-examination and clinical examination should be regarded as one of the most important public health strategies in the early detection of breast cancer (23).

Studies performed in other sites of Iran including: Tehran (6), Shiraz (10), Kashan (11), Yazd (12), Sannandaj (13, 14), Sari, Khorramabad, Shahrekord (24) and Lar (25), showed insufficient knowledge and practices of respondents. These studies showed that there was a significant relationship between Knowledge on BSE and marital status, level of education, history of breast disease and history of cancer in their families. These relatively are similar to our results.

In the developed countries, which have regular programs for cancer screening, practices of Asian women could be improved (5-8). Shirazi *et al.* examined the predictors of age-specific breast cancer screening participation among immigrant Iranian women aged 30 years and older. Their study showed that screening rates for clinical breast examinations (CBE) and mammography among the participants in the study were higher than levels set in the year 2010 Health Objectives and those reported for women nationally. These findings are inconsistent with previous studies on immigrant women living in the United States. However, the low rate of BSE is consistent with previous findings of other immigrant women breast cancer screening studies (8).

A baseline survey of practices of Korean-American women showed that 30.9% had BSE within the past month, 48.8% of aged 40 and older reported a CBE, and 21.9% having had a mammogram in past 12 month (7). In Filipino American women with average age of 65 years, 66% had never had a screening mammogram, 42% had had one in the past 12 months. These rates were about 20% lower than African-American women. The only demographic variables positively related to ever having had a mammogram were having health insurance and longer duration of United States residency (26). Relationship between breast cancer screening knowledge and practices with education and age were shown in many studies (27-32).

There is an important difference in rates of screening among women in communities with a family physician physically present, even on a part-time basis, and those without one (32). Thus, lack of family physician program in Iran can generally affect breast health.

In conclusion, the study findings suggest that women referred to Qouds Maternity Hospital in Zahedan had very little knowledge and practice about breast cancer screening and this needs to be improved. Therefore, qualitative researches to recognize the factors effective in the improvement of knowledge and practices of beast cancer screening methods among these women are necessary. Planning health education interventions such as comprehensive community education, culturally sensitive health promotion efforts, and improved access to low-cost screening sites for this group are essential.

Acknowledgments

We are grateful to the research council of School of Medicine of Zahedan University of Medical Sciences, who supported this work. We are also acknowledged and thank Dr. M. Yaghmaee and Dr. R. Ameri for their help and advices, and Mr. M. Mohammadi for statistical analysis of data.

Conflict of interests

The authors declare that they have no competing interests.

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