Original Article

The Effect of Breast Self Examination Educational Program on the Knowledge and Performance of Women in Yazd

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Abstract

Introduction: Breast cancer is the most common cancer and one of the major causes of cancer deaths in women. Early diagnosis leads to significant reduction of mortality from breast cancer, in other words it can increase the lifespan of people with this cancer. This study aimed to determine the effect of education on knowledge and performance of 20-60 year old women in Yazd city about Breast Self Examination (BSE).

Materials & Methods: In this study, 100 women aged from 20 to 60 years old who referred to Yazd health centers were selected. They were matched in terms of cultural, social, and economical aspects. In this quasi-experimental study, data was collected through administration of questionnaires before and after training in two stages. The collected information were then analyzed using the statistical software SPSS (version 18) by T-tests and ANOVA. The significance level was set at 0.05.

Results: The results of statistical analyses revealed a significant difference between participants' knowledge and performance scores before and after training ($0.05 > p$). In this study, age, marital status, education level, history of breastfeeding, and its duration had a significant relationship with participants' knowledge; also, positive family history of breast cancer had a significant relationship with their performance ($0.05 > p$). Between the subjects' performance was a significant difference in two groups with negative and positive family history of Brest cancer before and after two months of educational program. ($0.05 > p$).

Conclusion: According to the achieved results and the positive impact of education on the increase of knowledge and performance, educational programs in the field of breast cancer and its screening methods are recommended to be held for all age groups. In order to promote women's health from puberty to menopause more attention should be paid to the follow-up and training.

Keywords: Education, Breast self examination, Knowledge, Performance.

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Introduction

Breast cancer is the most common cancer and one of the major causes of cancer deaths in women. It covers about one-third of all women cancers and is the most common cause of cancer death after lung cancer in women. However, breast cancer has the highest incidence among all cancers. According to the World Health Organization in February 2009, the annual breast cancer death is 519,000 people around the world [1]. According to the American Statistics in 2008,a total number of 184450 (182460 women and 1990 men) new cases of breast cancer with death rates of about 40480 in women and 450 in men have emerged[2]. During the past 50 years the incidence of breast cancer in the US has increased significantly. Almost one out of every eight American women suffers from breast cancer. Fortunately, the mortality rate has decreased during1993 to1997which reflects the increased success in early diagnosis and treatment[3].

Breast cancer is the most common cause of cancer death around the world [4], the second common cancer in Iranian women [5], and a common disease in the developed and developing countries [6]. Breast cancer patients in Iran are about 40000 people and annually more than 7000 patients are added to this number [7]. According to the previous studies, by increasing public knowledge, early diagnosis, and effective treatment, more than 50 % of cancer patients can have long lives. Due to lack of training programs and facilities, more than 30 to 80 % of cancers are not detectable until advanced stages in the developing countries, while in the industrialized countries 50% of breast cancers are diagnosed in the early stages. In order to recognize breast cancer in asymptomatic patients, America Cancer Society has recommended the following screening methods: 1- Monthly breast self-examination from age 20 onwards. 2- Clinical breast examination every 3 years among women in the age range of 20-40 and older. 3- Every-year mammography screening starting at the age of 40-49[9].Among the diagnosis strategies, breast self-examination isan easy way, without complications, and free for all women [10].

 Low level of women's knowledge about breast cancer facts, lack of knowledge about Breast Self Examination (BSE) and its method or neglecting to do so, social poverty, late appearing bothersome symptoms in breast cancer such as skin ulceration and physician carelessness, are among the main reasons for late reference to physician when the cancer is in its advanced stages Performing BSE by women has an important effect on early detection of breast cancer and reducing cancer deaths [9]. BSE in premenopausal age should be performed 5-7 days after menstruation period monthly while it can be performed on a certain day each month after menopause. This method encourages patients to report any abnormalities to doctor instantly. Evidences showed that screening has a satisfactory effect on cancer mortality [11]. If the disease is in its early stages, 75 to 90 % of women will have a

healthy five-year life. If the detection is in the second stage of disease, in which the cancer has invaded to the lymph nodes, five-year survival rate decreases to 16% [12]. Among the methods of breast cancer screening, breast self-examination is one of the main pillars, so that America Cancer Society recommends breast self-examination monthly and regularly for women over 20 years as a healthy, inexpensive, and non-invasive method to predict breast cancer [13]. According to previous studies, women's knowledge about breast cancer symptoms and its screening methods, particularly BSE is low and the psychological and social factors such as cancer fear, lack of enough time, and forgetfulness are obstacles in this approach [12]. In order to have an optimal BSE in terms of quality and continuity, it is essential to use appropriate methods of health education and health promotion [14]. In this study the effect of educational program on women's knowledge and practice about breast self-examination is investigated.

Materials and Methods

This quasi-experimental study was conducted in the form of pretest –posttest on 90 women aged between 20-60 years old in 1394, Yazd, Iran. According to previous study [12], the samples were selected based on test power 85%, confidence rate 95% and likeliness of losing 100 women. Stratified sampling was conducted and four health centers similar in terms of social, economical, and cultural aspects were selected among all Yazd health centers. In the next stage, 25 women were selected randomly from each center using the Office Profile households covered by each health center. Selection criteria for inclusion were women aged between 20-60 years with no chronic diseases, neurological disorders, and impaired consciousness who have not participated in training programs related to BSE at least in the past 6 months. Exclusion criteria included lack of desire to participate in research or training, and an education degree below diploma. All participants completed the study and there were no cases of exclusion.

Data was then collected through a questionnaire consisted of three parts: the first part contained demographic in formation while the second and third parts targeted at examining participants' knowledge and performance about breast self-examination. Demographic information included individual characteristics such as age, marital status, job, education, family history of disease, as well as reproductive and breastfeeding history. The researcher made questionnaires consisting of 20 questions were administered to assess the participants' knowledge about breast self-examination.. In each question the correct answer got one point while the wrong answer and *I do not know* option received zero score. Total scores ranged between 0-20 and higher scores indicated better knowledge. In order to investigate questions' validity, 12 faculty members of Obstetrics, Midwifery, and Health Department studied the questionnaire and after revisions approved it. Further, reliability of the questionnaire was confirmed by applying test

– retest method. Then, questionnaires were completed by 10 women within a week and a Cronbach alpha coefficient of0.78 was confirmed.

BSE performance was studied through 18 questions dealing with women's breast self-examination. An answer to each question received a point while questions with no answers got zero scores. Total scores ranged between 0-18 and higher scores showed better performance. Validity of performance questions was also confirmed in the same way as that of knowledge questionnaire; test - retest method was conducted within a week on 10 people and the reliability of the questionnaire with the Cronbach's alpha coefficient of 0.81 was confirmed.

In the next stage, participants were informed about the purpose of study and written informed consent was obtained from them. Initially, demographic information questionnaire and then the knowledge and performance forms were completed by women (pre-test). Afterwards, a training program on the importance of breast cancer screening methods and an education course on breast self-examination were conducted by a surgeon in three 60-minute sessions for women. Next, two months after completion of the training sessions, questionnaires were completed again by the subjects. Data was then fed into the statistical package SPSS (version 20) and paired t-test, chi-square, and Pearson correlation coefficient analytical processes were conducted on them. A *p* value of less than 0.05 was considered as the significance level.

Results

A total of 100 subjects were selected;43% of them were aged between30-40 years old while 8% were between 50-60 years old. The mean score of age was $43 \pm 3/12$. Most participants, i.e., 79%, were married while only 16% of them were single and 5% were divorced or widowed. In terms of education, 47% of women had diplomas, 45% had bachelor and master's degree, and 8% had PhD degree. Most participants (81%)reported no history of breast cancer in their close relatives; however, 19% of patients had a positive family history of breast cancer in their first-degree relatives. Before conductance of the training course 18% of women had appropriate knowledge about BSE, 21% had moderate knowledge, and 61%had low knowledge. After the training course, 53% of subjects reached to the statistically significant different level of knowledge (P=0.032). The mean score of performance before the educational program was $7/24 \pm 4/18$while it reached to $12/06 \pm 2/11$ after the educational program, but there was no statistically significant difference between them (P =0.041). According to Tables 3 and 4 the results of the paired t-test showed that the mean scores of subjects' knowledge and performance on BSE was significantly different in those who had positive family history before and two months after the educational program (p<0.05). But no significant difference was observed in the

group of women with a negative family history before and two months after the educational program (p>0.05).The performance mean scores of women with negative family history had no significant difference in the pre and posttests' results (p >0.05). Results of the independent t-test showed that the mean scores of knowledge and performance of women in the pre-test had no significant difference in both groups (p>0.05). After the intervention, a significant difference was observed in the knowledge of both groups (p<0.005) but the score of performance was not significantly different in both groups (p>0.05). In addition, age, marital status, education level, history of breastfeeding and its duration had a significant difference with level of knowledge also, there was a significant difference between positive family history of breast cancer and participants' performance (0.05> p).

Table 1: Frequency of demographic variables

Variable		Frequency	Percentage
Educational status	Diploma	47	47
	Bs and Ms$_c$ degree	45	45
	PHD	8	8
Marital status	Single	16	16
	Married	79	79
	Widow or divorced	5	5
Family history of breast cancer	Negative	81	81
	Positive	19	19
Job	Housewife	57	57
	Working	43	43
Childbirth history	Having at least one Childbirth	67	79.76
	No Childbirth	17	20.24
History of breastfeeding	Yes	54	64.29
	No	30	35.71

Table 2: Mean and standard deviation of knowledge and performance on breast self-examination before and after the intervention

	Before training	After training	p-value
Mean core of knowledge	11.08±3.16	15.73±1.97	0.032
Mean score of performance	7.24±4.18	12.06±2.11	0.041

Table 3: Comparison of women's knowledge about BSE before and after the intervention in family history

Family history	Yes (n=19)	No (n=81)	p-value
	Mean±SD	Mean±SD	(Independent t-tests)
Knowledge			
Before training	10.36±2.62	8.95±2.88	0.674
Two months after training	15.08±3.97	9.32±2.69	0.0001[*]
p-value(Paired t-tests)	0.0001[*]	0.821	

[*]Significant level of 0.05

Table 4: Comparison of the women's performance on BSE before and after the intervention in family history

Family history	Yes (n=19)	No (n=81)	p-value
	Mean±SD	Mean±SD	(Independent t-tests)
Performance			
Before training	7.2±2.21	6.89±2.03	0.756
Two months after training	11.6±2.84	10.83±2.65	0.061
p-value (Paired t-tests)	0.0001*	0.043*	

[*]Significant level of 0.05

Discussion

In this study mean score of age was 43± 3.12 years showing that women in this age range can be a target group for cancer prevention programs. The average age of participants in Mahmoudi et al. study was 28.2± 7.2 [15]. Since among screening programs, breast self-examination is highly efficient method for young people [16] and also because Canadian National Breast Screening Study-2 (CNBSS2) reported that in countries such as Iran, breast cancer is a growing problem, learning how to perform BSE and knowing about breast cancer risk factors can be a preventive program for breast cancer [17]. The results showed that 19% of participants reported a positive family history of breast cancer which is a high rate [18]. According to the result of this study, after attending the training course knowledge and performance of women with positive family

history were higher than those of participants with negative family history that could indicate their concern about the risk of this disease. Results of the women study in Turkey showed that subjects with positive family history of cancer are almost 12 times more likely to have BSE than the others [19].In the current study, a significant relationship was found between level of education and knowledge about BSE, which is inconsistent with findings of the research conducted in 2009by Mahmoudi et al. as well as Simi et al.(2009),study performed in Shiraz. But these findings are in the same line with the research conducted by Avci (2007), in Turkey [19]. Anna M Miller et al. in their study concluded that with increasing levels of education to diploma level, women's resistance to perform breast cancer screening methods and BSE decreased,

but women with a college education are less likely to perform these examinations[20].In the present study, conduction of an educational course about breast self-examination could significantly increase knowledge and performance scores of participants. This finding is in consistence with the results achieved by firoozeh et al.(2011) [21].

Given the high incidence of breast cancer among women and the need for better diagnosis of the disease, these findings suggest that special attention should be paid to educational programs for early detection.. Low level of women's awareness about breast cancer facts, lack of knowledge about BSE and its performance, social poverty, late appearing breast cancer bothersome symptoms such as skin ulceration,   and physicians' carelessness are among the reasons of late diagnosis of breast cancer. Performing BSE by women could have important effects on early detection of breast cancer and mortality reduction [9, 22].

In this study, a significant relationship was found between participants' jobs on the one hand and the knowledge and performance on the other hand in the field of BSE. However, no significant relationship was found between marital status and the subjects' knowledge and performance; these results are consistent with findings of Shokranyan and Karimi [9, 22]. The significant increase in women's knowledge and performance represents a positive impact for education which is according to the results reported by Karimiet al. (2005),in which the awareness and knowledge increased 59.1% and 57.1%, respectively after education[9].In Akhtari-Zavare et al. study, majority of participants (97%) reported that they had heard about breast cancer but only 26% of them performed BSE [23] and also reported 97% of the participants knew about BSE, only 36.7% performed BSE and among those who performed BSE, they did it occasionally (50, 57.5%) [24]. Similarly, in another study conducted in Turkey it was reported than less than half of the contributors performed BSE while a few of them did it regularly [25]. All these studies showed that Asian women have low to moderate knowledge with poor to moderate BSE performance.

Conclusion

According to the results, we can plan Extensive training courses to detect problems timely and prevent disease development. Though, breast cancer is the second most common cancer in Iranian women, but there is no systematic plan for prevention of this disease in Iran. Awareness and screening behaviors among Iranian women is low, so conducting researches to study the role of educational plans and establishing intervention training centers to promote public awareness are suggested.

Acknowledgement

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