

RESEARCH ARTICLE

Role Playing for Improving Women's Knowledge of Breast Cancer Screening and Performance of Breast Self-Examination

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Abstract

Background: To enhance knowledge and performance of screening as a strategy to control breast cancer, use of effective teaching methods is necessary. The objective of this study was to determine the effect of role-playing on knowledge of breast cancer screening and performance of breast self-examination (BSE). **Methods:** A quasi experimental design was used. Women enrolled in community cultural centers (n=314) were randomly divided into two educational groups: role playing (intervention) and lecture (control). Data were collected using a structured questionnaire before and after intervention. Reliability of the questionnaire was determined as 0.80 by Cronbach's alpha. The women were followed up regarding performance of BSE one month later. **Results:** Of the 314 women, 113 (36%) and 132 (42%) had low and medium levels of knowledge, respectively. More than a third (38.2%) reported that TV and radio were the most important information sources for breast cancer and screening. There were significant differences between mean scores of knowledge before and after the intervention in both groups, but change was greater with role playing (31.3±1.9 as compared to 23.5±1.3) (P=0.001). After a month of educational intervention, 75.7% and 69.8% of those in role playing and control groups had undergone BSE. **Conclusion:** It appears that application of a role playing method by providers improves women's knowledge and behavior with respect to breast cancer screening.

Keywords: Breast cancer screening- breast self-examination- knowledge- perform- role playing

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Introduction

Breast cancer is a worldwide health worry. (Coughlin and Ekwueme, 2009). Its cases will increase from 1.4 million in 2008 to 2.1 million cases in 2030 (Story et al., 2012)

In recent years, Breast cancer has become the most commonly diagnosed cancer among Iranian women (Arab and Noghabaei, 2014) and it is predicted to increase to 63.0 per 100,000 in 2020 (Zahmatkesh et al., 2016).

Early diagnosis plays a key role in reducing mortality of breast cancer (Hoerger et al., 2011) as early diagnosis enhances the survival rate (Tavafian et al., 2009). Despite supporting evidence on effectiveness of breast cancer screening (Lamyian et al., 2007), a number of studies have indicated that Iranian women's participation in breast cancer screening was low. (Nafissi et al., 2012)

Furthermore, information considering breast cancer signs and screening methods have been inadequate (Montazeri et al., 2008). Women who have never used screening were less aware of possible symptoms (Talley et al., 2016) resulting in some tumors detected in advanced stages (Noreen et al., 2015). It is therefore necessary that

women have access to adequate information considering breast screening.

In fact, World Health Organization (WHO) recommended awareness of signs and symptoms, and screening as a strategy to control breast cancer in low and middle income countries. Moreover education is essential for the arrangement of an awareness program (Luyeye et al., 2014). Although diverse educational methods were investigated in order to achieve this strategy, the use of effective teaching methods for public education, confirmed better results.

Role playing is one of the effective active learning strategies which are widely used in medical education (Liu et al., 2015). According to Koo (2012) role playing may increase women's understanding of breast health, as it could give women a chance to share the breast health message method. Bhattacharjee (2013) stated that the use of role-playing could influence the process of critical thinking, stimulate emotions and moral values and inform almost real data. Xu (2016) used role playing as an educational method in genetic counseling of students and Schwartz (2015) studied role playing in comparative with other teaching strategies in a nutrition course.

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Although role playing is considered as an effective teaching approach, relatively little is published on effectiveness role playing in enhancement women's knowledge of breast cancer screening and perform self-breast exam. It is the purpose of this study to present results from the use of role play to promote knowledge on breast cancer screening among health professionals.

Materials and Methods

A quasi experimental design was used in this research. This study was designed to assess and compare two methods of education (role playing and lecture) on knowledge of breast cancer screening and perform self-breast exam in women.

At first, all women living in Baharestan district were informed about classes by installing a number of banners and distributing flyers in the area as well as sending free text Messages. Messages were consisted of places where classes were held as well as phrases such as "let your information about breast cancer increase" in order to enhance women's attention. We invited women to enroll in classes which were located in the district's four community cultural centers.

Community cultural centers have been established by municipality in various places of the district. In these centers, some classes are being held in different fields for women and children; Such as arts, exercises and healthcare. Likewise, these places have been suitable environments for educational intervention in women who had lived in the area. The population of the study included all the women who enrolled in the district's community cultural centers.

Sampling was conducted from 15 April to 10 August, 2016. Inclusion criteria were: being able to read and write, aged 20 to 69 years, possessing no history of breast cancer or specific diseases, and not having participated in any kind of educational intervention. Participation in this study was also based on informed consent.

Although all women living in Baharestan district were invited to participation in the study, 320 women accepted invitation and enrolled for classes. Finally, 314 of them participated in classes.

Women who met inclusion criteria randomly allocated into two groups: role playing and lecture. Both role playing and lecture group consisted of one session. The length of session was typically two hours. The data was collected using a self-administered structured questionnaire before and after the educational intervention. The questionnaire included 26 items: socio-demographic characteristics (n=4) and knowledge about risk factors, protective factors, symptoms of breast cancer and methods of breast screening (n=22). The knowledge questionnaire was based on literature and existing questionnaires. Yes/no/ don't know questions were designed to check knowledge. Scoring of the knowledge questionnaire was defined by giving score of one to yes answer and zero to no and don't know answers, with an overall score between zero and twenty two. In order to better understand mean scores were reported in ranges from 0 to 100.

The reliability of the knowledge questionnaire was

determined by Cronbach's alpha. It was reported 0.80. Therefore the questionnaire had adequate internal consistency. Bloom's cut point was used to measure knowledge of women. We considered 59% or below, 60% to 80% and more than 80% as low, medium and high level respectively (Abeje et al., 2016).

Lecture notes and role playing scenarios were provided based on Iranian Ministry of Health and Medical Education protocols before educational interventions were performed.

All items of the questionnaire, lecture notes and role playing scenarios were verified by a number of faculty members who were specialized in the field.

In order to conduct intervention role playing, firstly a scenario was written. Afterwards some participants voluntarily were chosen to play the scenario. A written narrative of each role was given to all participants who were chosen as players. The roles were included a client, a mother or sister of client and a midwife. Researcher played as midwife.

Training and coordination between players carried out. Then role playing was performed on a day which had been determined. At the same time rest of group observed the role playing. Subsequently they discussed and commented on the subject. Consequently all members of every group had an opportunity to share their experience and problems with each other.

The role playing includes following steps: warming up the group, selecting participants, setting the stage, preparing observers, enacting, discussion and evaluation, reenacting, discussion and evaluation, sharing experiences and generalization (Joyce et al., 2009).

In this study role playing was began with warming up the group and sharing experiences then finished with generalization according to stages which were recommended.

All women in the two groups were followed up to perform Breast Self-exam one month later.

The data were analyzed using SPSS version 18 for 314 samples. The socio-demographic characteristics and level of knowledge information sources were described by using descriptive statistical analysis (Mean, mean change, standard division and Frequency distribution). Also Chi-square, Paired t-test and Independent t-test were used to determine and compare the distribution of information resources, breast self-exam scores and mean scores of knowledge.

Ethical consideration

This study was approved by Ethics Committee of the Medical Research of Isfahan University of Medical Sciences with the number of IR.MUI.REC.1394.3.256.

Results

Totally 314 women participated in classes. The average age and number of samples' children were 45.53 ± 10.99 and 2.79 ± 1.74 respectively. Approximately majority of them were married (90%) and housekeeper (81.1%). Moreover, 43.9% of the women had obtained high school diploma (Table 1).

Table 1. Frequency Distribution of Women's Socio-Demographic Characteristics

Socio-demographic characteristics	Number (percent)
Age	
20-29	25 (8%)
30-39	74 (23.6%)
40-49	90 (28.8%)
50-59	94 (29.7%)
60-69	31 (9.9%)
Education:	
Primary	132 (42%)
High school	138 (43.9%)
University	44 (14.1%)
Job	
Housekeeper	255 (81.2%)
Employer	59 (18.8%)
Marriage status	
Marriage	283 (90.1%)
Divorced	4 (1.3%)
Widow	18 (5.7%)
Unmarried	9 (2.9%)
Number of child	
0	23 (7.3%)
1	42 (13.4%)
2	96 (30.6%)
3	58 (18.5%)
4	44 (14%)
≥5	51 (16.2%)

The age and number of children, education level, and job and marriage status of women did not differ significantly between both groups.

Of the 314 women, 113 (36%) and 132 (42%) had low and medium level of knowledge respectively, while only 69 (22%) had high level of knowledge.

More than a third of women (38.2%) reported that TV and radio were the most important information sources about breast cancer and screening (Table2).

Results of Chi-square test showed that distribution of information resources were not significantly different between the two groups ($P=0.15$). There was no significant difference in mean scores of knowledge before the intervention between role playing and lecture groups.

On the other hand there was significant difference between mean scores of knowledge before and after the intervention in both educational groups by Paired t test ($p<0.001$). Results of Independent t-test demonstrated that mean change scores of knowledge in role playing was

Table 2. Frequency Distribution of the Most Important Information Sources Used by Women

Information sources	Number	Percent
Health care providers at public health centers	96	30.6
Doctor or midwife at private health centers	57	18.1
TV and radio	120	38.2
Newspapers and books	11	3.5
Friends and relatives	20	6.4
Social Networks	5	1.6
Internet	5	1.6

higher than lecture and were statistically significant after intervention (31.3 ± 1.9 and 23.5 ± 1.3) ($P=0.001$) (Table 3).

After a month of educational interventions, 75.7% and 69.8% in groups of role playing and lecture respectively performed breast self-exam. Although breast self-exam scores were higher in role playing group than the lecture, the results of Chi-Square test did not show significant differences.

Then again, the mean score of knowledge after intervention in the first month was higher in women who had undergone breast self-exam than of the people who had not. Furthermore, Independent t-test results showed that the difference between mean score of knowledge after the educational intervention in both groups who did and did not do breast self-exam was statistically significant.

Discussion

The results of this study indicated that the majority of women had medium level of knowledge of breast cancer and screening, however, significant percentage of women had low and unsatisfactory level of knowledge.

This study revealed that the television was the most important information source for women. Accordingly, the television played a substantial role in informing women about the importance, symptoms and risk factors of breast cancer and screening methods.

On the other hand health care providers at public health centers, doctors and midwives at private health centers were important information sources about screening after television and radio.

In this study women mentioned other resources as information source such as newspapers, books, friends, relatives and social networks; however, low percentages were reported.

These results are consistent with a study in Saudi Arabia about female teachers which presented that print media with 68.2% and television with 83.2% were the

Table 3. Mean, Mean Change, Standard Division (SD) of Knowledge Scores in Role Playing and Lecture Groups at Different Times

Groups	Before the intervention		After the intervention		P-value	Changes of knowledge scores		
	Mean	SD	Mean	SD		Mean	SD	P-value
Role playing group	63.1	21.1	94.5	7.7	0.001>	31.3	1.9	0.001
Lecture group	65.3	18.6	88.8	9.8	0.001>	23.5	1.3	

most important sources to obtain information considering cancer. 14.1% of these women stated that their sources of information were health care professionals. Research findings in Iran also revealed that the most important information source considering breast cancer was mass media (48%) which was similar to findings of this study (Montazeri et al., 2008).

Gigerenzer (2009) reported general media, experts, family and/or friends and specially television as the most important sources by investigating information sources considering healthcare in European countries. In this report the general practitioner was the most significant source in France, Germany, Italy, Austria and Spain, though family and/or friends reported as the most popular source in Poland and Russia.

Therefore, despite emphasis on informing women about screening and motivating them to report any unusual changes by educated individuals and experts, trainings through these sources are not sufficient so far in some countries (Uddin et al., 2012) and not every person provided equally with this information source yet (Armin et al., 2014).

Findings of this study showed that role playing method as an active educational method alike educational lecture method will end result in increasing women's knowledge considering breast cancer and screening. Moreover, results showed that using of two educational methods (role playing and lecture) in community centers correlation with an increase in BSE.

Our study results considering role playing method are consistent with Koo's findings (2012) that mentioned using the educational role playing method increased understanding of breast health in Chinese-Australian women.

Livingston (2009) also considered this method as an educational tool. He indicated that not only this method was effective in increasing African-American women's knowledge considering breast cancer, but also amplified health related behaviors.

In this regard, findings of Gutnik's study (2016) demonstrated that using role playing method improved knowledge and skills in individuals. These results were similar to ours.

In this study, lecture method was used as a control technique by increasing women's knowledge and performance in breast cancer screening. These findings were in accordance with Farma's study (2014) that mentioned lecture method affected preventive behaviors of breast cancer. He indicated that knowledge and practice were increased remarkably after educational intervention. Plymale (2000) also demonstrated that education through lecture was accompanied by students developed understanding of breast cancer.

Although in the current study women's knowledge and BSE were increased after educational intervention at both groups of role playing and lecture, the increase in knowledge level was higher in role playing group than control group statistically. Therefore, role playing method was more effective in increasing women's knowledge. These effects may be related to the elements of thoughts, feelings, insight and performance that are involved in

role playing method. So that these factors altogether ground role playing method's effectiveness (Nestel and Tierney, 2007).

In this method individuals communicate emotionally and rationally by playing roles and performance. They feel themselves on the scene and are immersed in learning process. As a result they achieve a better and more effective learning (Clapper, 2010).

Results of this study indicated that all women who obtained higher scores in knowledge after educational interventions performed self-breast exam more than women with less knowledge scores in general.

This study accords with study conducted in the Turkey which revealed that increased practice of self-breast exam was accompanied by women's increased knowledge (Erdem and Toktas, 2016).

The results of this study indicated that using role playing in cultural centers was effective on women's knowledge considering signs and symptoms of breast cancer and various methods of screening.

In consequence, according to these results, the role playing method as an effective learning method can be useful in order to inform women. Likewise this method can be used for all age groups which is reckoned as practical benefits of this educational method (Joyce et al., 2009).

Despite the benefits listed above, it should be considered that this method has some drawbacks. Role playing method is time demanding and needs design, appropriate implementation procedures, coordination and participation of the members and providing conditions for all participants. Therefore, in the absence of the necessary conditions for the use of role playing method, using lecture method can be posed as a common and effective method considering breast cancer screening.

In general the results of this study confirmed that using effective educational methods in cultural centers not only increased women's knowledge, but also improved their behavior considering breast screening. Therefore, according to these results performing effective educational interventions at cultural centers by skilled individuals such as health care providers can help enhance women's knowledge and breast screening behaviors.

In this regard, study findings of Luyeye (2014) demonstrated that health care personnel increased seeking to diagnosis of breast cancer in women based on information and education. Also Park (2011) mentioned that Community-based intervention improved breast cancer knowledge and screening in Korea. These findings were similar to ours.

It seems that providing appropriate information regarding breast cancer screening through cultural centers along with resources such as health centers - private and public is useful in order to inform women in society. However, in this study all women living in the district were invited for education to cultural centers with different calls, the samples may not be realistic estimation of women. Therefore, this case must be considered as a limitation of this study.

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Conflict of interest

No conflict of interest has been declared by the authors

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