

The Impact of Community-Based Awareness Campaigns on the Early Breast Examination among Women at King Faisal University

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Abstract

Background and Objective: Breast cancer (BC) is the most common cancer between females in Saudi Arabia, the eastern area ranked as the first in the incidence rate. As the breast cancer awareness movement has expanded, majority of the new cases are still diagnosed in a later stage. This study aimed to evaluate the impact of breast cancer awareness campaigns on the knowledge and practice of early breast examination (EBE) which consisted of breast-self examination (BSE), clinical breast examination (CBE) and mammography, among women at King Faisal University. **Methodology:** A cross-sectional study carried out at King Faisal University, Al-Hassa city on a sample of 300 adult females from different urban and rural areas. A pre-tested, self-administered questionnaire was distributed to the participants. The questionnaire contains questions about: socio-demographic factors, awareness campaigns, practice and knowledge of breast cancer and early screening methods. **Results:** The age of the participants ranged from 16 to 60 years; 53% of the participants have attended campaigns; and 47% have never attended. Regarding the practice of BSE, CBE and mammography, the results were 8.8%, 3.3%, and 4.3%, respectively. The results show a significant relation between attending campaigns and good level of practice and knowledge. **Conclusion and Recommendation:** The findings indicate a great impact of the community-based awareness campaigns on the practice of EBE. The study recommends a multilevel intervention for every age group, specially the age group that at risk.

Keywords

Breast, Cancer, Awareness, Campaigns, Examination, Mammography

1. Introduction

Breast cancer seems to be a huge global health problem. It is the most common cancer in women worldwide [1]

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[2]. Every year, about 1.5 million women around the world are diagnosed with breast cancer and about 502,000 die from it [2]. It is also the most common cancer in the Arabic gulf countries. There were about 11,000 breast cancer cases diagnosed between 1998 and 2007. It represents 11.8% from cancers cases and 23.5% from cancers in females in Gulf cooperation council (GCC) countries. The overall age standardized incidence rate (ASR) for all GCC countries women was 18.8 per 100,000 populations [3]. According to the Saudi Cancer Registry (SCR), breast cancer was the first malignancy between Saudi women; of all newly diagnosed female cancers in 2007, BC represented 26% of them [4]. The breast cancer in the Kingdom of Saudi Arabia (KSA) has a mortality rate of (10.4/100,000) and incidence rate of 22/100,000 [5]. Screening and early detection of breast cancer are important in reducing cancer morbidity and mortality [2] [6] [7]. National cancer organizations in the United States and Canada recommend mammograms annually [8] or every 1 to 2 years [9] [10]. However Tawfik Amin and colleagues [11] found that clinical breast examinations were done by less than 5% and mammography by only 3% of the participants. Another study in Riyadh [12] found that only 23.1% of the participants said that they practiced breast self-examination (BSE); 14.2% had clinical breast examination (CBE) and only 8.1% did mammography before. Many researches have been conducted in Saudi Arabia showed that the knowledge of women regarding breast cancer and its screening was very low; one of them was applied on Saudi teachers in Buraidah; the results show that more than half of the women had a limited knowledge level [13]. Another study conducted in Al-Hassa city, [11] also found that the general knowledge about breast cancer screening and risk factors was low and it depended on the educational level. In the Arabic women population, living in urban area, young age, higher level of education, and family history of BC were positively associated with Breast Cancer Screening [14]. Other studies result in that a doctor's recommendation is a strong reason to do mammography [15]-[17]. However, the psychosocial barriers of early breast examination for Arabic women included fear of the screening process, fear of the mammography results, [14] [18], and concern that breast examination might threaten cultural and religious values [19]. The Supreme Council of Health in Qatar [4] recognized that lack of knowledge and awareness were major barriers to BCS. The council recommended awareness campaigns that focused on early diagnosis to educate the population about the signs and symptoms of breast cancer [14]. In Saudi Arabia, despite the lack of an organized screening program, there exist several programs/activities such as: the public awareness of breast cancer, through lectures, in a major hospital [20], a well-designed public awareness program, and the first organized population-based screening mammography program which was held in the Al Qassim region [21]. As the breast cancer awareness movement has expanded, an increasing number of voluntary organizations, governmental and private associations have sponsored activities related to Breast Cancer Awareness Month. Since 2009, more than 65,000 women visited breast cancer awareness campaigns in Al-Hassa city. Because there are few studies have been done regarding the community-based awareness campaigns in Saudi Arabia, we've start this study to evaluate the impact of breast cancer awareness campaigns on the knowledge and practice of early breast examination which consist of breast-self examination, clinical breast examination and mammography, among women at King Faisal university.

2. Aim of the Study

This study aimed to evaluate the impact of breast cancer awareness campaigns on the knowledge and practice of early breast examination, which consist of breast-self examination, clinical breast examination and mammography, among women at King Faisal University.

3. Material and Method

3.1. Study Design

A cross-sectional study that assessed the effect of the awareness campaigns on the knowledge and practice of early breast examination such as breast self examination (BSE), clinical breast examination (CBE) and mammography.

3.2. Setting

The study carried out at King Faisal University (KFU) in Al-Hassa Governorate, located in the Eastern Province of Saudi Arabia, between October and December 2013, among adult females from different urban and rural areas who work at KFU.

3.3. Participants

This research was conducted on a sample of 300 women work at KFU, consisted of 150 students and 150 faculty members (75 administrators and 75 teachers) between the ages of 18 to 60 years, from different collages. The criteria of inclusion was: adult females who works at KFU and the criteria of exclusion was: females who are not willing to participate in the study. Since the estimated population size of the females who works at KFU during that selected period was about 20,000. We calculated a sample size of 300 based on the standard formula for simple random sampling, with a 95% confidence level, 5.62% confidence interval and response distribution of 50%.

3.4. Method of Data Collection

A pre-tested, self-administered questionnaire that designed to investigate the research problem was distributed to the participants. The questionnaire contains 29 close-ended questions as the following: 1) Socio-Demographic factors: area of residence, age, marital status, Job (Student, Officer, Teacher) and field of working (medical, other). 2) 3 questions with answers of (Yes, No) about a history of any case in the breast, the first one asking if she has a relative or a friend with a breast cancer, the second one asking if she had a previous surgery in the breast and the third one asking if she have any disease in the breast. 3) 4 questions about awareness campaigns: Whether if she attended or not, reasons of not attending, effectiveness of these campaigns, and if she thinks that she's aware of early breast examination as a result of attending these campaigns. 4) 6 questions about early breast examination, the first question asked if she thinks that BSE is an effective way in early detection of BC, second question asked if she believes in the treatment of BC, the next 3 questions are about practicing BSE, CBE and mammography with answers of (yes, no, sometimes, I don't know what's BSE/CBE/mammography) and last question asking about the reasons of not doing CBE or mammography. 5) The last part of the questionnaire examined the knowledge through 11 questions some of them are written in a correct way the others are not, the answers was (yes, no, I don't know) they asked about prevalence of BC, risk factors (first pregnancy before 35, breastfeeding, Obesity), symptoms (nipple discharge or changes appear in the skin) and last 4 questions was about the correct time for early breast examination (BSE/CBE/mammography) and the procedure of BSE.

3.5. Ethical Considerations

Before the participants fill the questionnaire, a full explanation about the study was provided to them, they have been told that their participation is completely voluntary, and the data that have been taken from them were kept and no one had an access to it except for the researcher to insure the security of the participants, no names or personal information was taken from the participant like the address or the phone number. Statistical tests: Data coded and analyzed using SPSS version 22. Descriptive statistical analysis used to determine frequency description, M and SD, chi-square test was used, categorical data were expressed using frequencies and percentage, $P < 0.05$ was applied as a level of significance.

4. Results

4.1. Socio-Demographic and Participants Characteristics

The age of the participants ranged from 16 to 60 years with mean of (2.22 ± 1.02) , majority of them were below the age of risk, which is, 40 years old. Which gives an indication of the age groups distributions that work in the Saudi universities. More than 50% of the participants who have either a relative or friend with breast cancer or any history of a breast disease or had a previous breast surgery, had attended awareness campaigns (**Table 1**).

4.2. Breast Cancer Awareness Campaigns

Regarding the attendance of BC awareness campaigns, 159 (53%) of the participants have attend campaigns at least once before and 141 (47%) have never attend any BC awareness campaigns. Regarding the question: "reason could prevent you from attending a BC awareness campaigns", Majority of those who never attend campaigns chose "No enough advertisement" as their first reason, then "fear of cancer related activities" was the second reason, 52.5% of the participants chose the other answers as a reasons that could prevent them from attending campaigns. About the effectiveness of the campaigns in the awareness of early breast examination

Table 1. Socio-demographic and participants characteristics.

Character	Attend		Never attend		Total	
	(n)	(%)	(n)	(%)	(n)	(%)
Respondent	159	53	141	47	300	100
Residence						
Urban	132	86.3	124	89.9	256	88
Rural	21	13.7	14	10.1	35	12
Age						
16 - 20	49	31	31	22	80	26.8
21 - 30	63	39.9	55	39	118	39.5
31 - 40	28	17.7	32	22.7	60	20.1
41 - 50	18	11.4	19	13.5	37	12.4
51 - 60	-	-	4	2.8	4	1.3
Marital status						
Married	65	41.1	72	52.2	137	46.3
Non-married	93	58.9	66	47.8	159	53.7
Work						
Student	84	52.8	66	46.8	150	50
Officer	39	24.5	36	25.5	75	25
Teacher	36	22.6	39	27.7	75	25
Field of working						
Medical	55	34.8	24	17.1	79	26.5
Other	103	65.2	116	82.9	219	73.5
Diseased relative or friend						
Yes	49	30.8	29	20.9	78	26.2
No	110	69.2	110	79.1	220	73.8
Previous breast surgery						
Yes	6	3.8	4	2.9	10	3.3
No	153	96.2	136	97.1	289	96.7
History of a breast disease						
Yes	19	11.9	5	3.5	24	8
No	140	88.1	136	96.5	276	92

n: number of participants who choose this answer. %: percentage of participants who choose this answer.

(EBE), 87 (62.6%) of the participants who had never attend campaigns chose “yes”, 107 (75.9%) of them chose “yes” as an answer for the question that said “do you think breast-self examination is an effective way could help in early detection of BC?” and 114 (80.9%) of them said “yes” as an answer for the last question in this part was asking about believing in the treatment of breast cancer. These results show the importance of solving the problems related to the reasons that prevent people from attending awareness campaigns as they seems the only barrier that affect attending (**Table 2**).

4.3. Practice of Early Breast Examination

Unfortunately results show that practicing the early breast examination methods is not affected by attending the awareness campaigns. Among the total sample, there was only 26 (8.8%) who chose “Yes” for practicing of

Table 2. Breast cancer awareness campaigns.

Character	Attend		Never attend		Total	
	(n)	(%)	(n)	(%)	(n)	(%)
Reason of not attending campaigns						
I don't care	12	9	27	19.4	39	14.3
BC is a normal case	1	0.8	5	3.6	6	2.2
Bad location	27	20.3	20	14.4	47	17.3
No enough advertisement	32	24.1	40	28.8	72	26.5
Not reliable	6	4.5	5	3.6	11	4
Fear	28	21.1	29	20.9	57	21
Other reasons	27	20.3	13	9.4	40	14.7
Effectiveness of these campaigns in the awareness of EBE						
Yes	142	91	87	62.6	229	77.6
No	6	3.8	7	5	13	4.4
I don't know	8	5.1	44	31.7	52	17.6
I don't know what's EBE			1	0.7	1	0.3
Aware of EBE as a result of attending these campaigns						
Yes	104	75.4				
No	31	22.5				
I don't know	3	2.2				
BES is an effective way in the early detection of BC						
Yes	137	86.2	107	75.9	244	81.3
No	14	8.8	13	9.2	27	9
I don't know what's BSE	8	5	21	14.9	29	9.7
Belief in the treatment of BC						
Yes	146	91.8	114	80.9	260	86.7
No	4	2.5	5	3.5	9	3
I don't know	9	5.7	22	15.6	31	10.3

EBE: early breast examination. BSE: breast self examination. CBE: clinical breast examination. BC: breast cancer.

BSE, 10 (3.3%) chose "Yes" for CBE and only 13 (4.3%) said that they do mammography annually. Regarding the reasons of not doing CBE or screening by mammogram, "my doctor didn't suggest" was the first reason as 65 (23%) chose it as the reason that make them not practicing or screening (**Table 3**).

4.4. Knowledge of Early Breast Examination

Table 4 shows the responses of the participants toward the knowledge items of EBE. Generally, the number of the participants who answered correctly from those who attend campaigns is more than the number of those who answered correctly from participants who never attend, which shows The effect of attending campaigns on the knowledge about EBE.

Table 5 shows the results of the analytical test that applied to see the relation between the variables, the results showed that the practice of BSE, CBE and mammography is influenced by attending campaigns. Regarding the knowledge items, the results also show that there is a positive relation between attending campaigns and choosing the correct answer except for the third statement the says "Breastfeeding can reduce the risk of BC" which has a P value > 0.05.

Table 3. Practice of early breast examinations.

Character	Attend		Never attend			Total	
	(n)	(%)	(n)	(%)	(n)	(%)	
Practice of BSE							
Yes	17	10.9	9	6.4	26	8.8	
Sometimes	73	46.8	37	26.2	110	37	
No	59	37.8	68	48.2	127	42.8	
I don't know what's BSE	7	4.5	27	19.1	34	11.4	
Gradually visiting doctor for CBE							
Yes	9	5.7	1	0.7	10	3.3	
Sometimes	15	9.4	14	9.9	29	9.7	
No	127	79.9	103	73	230	76.7	
I don't know what's CBE	8	5	23	16.3	31	10.3	
Annual screening by mammogram							
No	121	76.6	105	74.5	226	75.6	
Yes	11	7	2	1.4	13	4.3	
Once before	8	5.1	7	5	15	5	
I don't know what's mammogram	18	11.4	27	19.1	45	15.1	
Reason of not doing CBE or mammography							
No reason prevent me	11	7.4	7	5.2	18	6.4	
Fear of wrong diagnosis	21	14.1	25	18.7	46	16.3	
My doctor didn't suggest	31	20.8	34	25.4	65	23	
Too young to care about it	21	14.1	19	14.2	40	14.1	
I don't have time	24	16.1	29	21.6	53	18.7	
The cost	4	2.7	3	2.2	7	2.5	
BSE is enough	37	24.8	17	12.7	54	19.1	

Table 4. Knowledge of early breast examinations.

Informations	Attend			Never attend			Total		
	(✓)	(×)	(!)	(✓)	(×)	(!)	(✓)	(×)	(!)
BC is the most common cancer in females in KSA/true.	51.9	5.1	43	38.6	3.6	57.9	45.6	4.4	50
First pregnancy before the age of 35 can reduce the risk of BC/true.	35.8	5	59.1	24.5	2.2	73.4	30.5	3.7	65.8
Breastfeeding can reduce the risk of BC/true.	76.7	2.5	20.8	70.3	2.2	27.5	73.3	2.4	23.9
BSE must be done every 3 months/false.	27.2	23.4	49.4	23	10.8	66.2	23.2	19.5	57.2
Women above the age of 40 should do mammogram annually/true.	71.1	2.5	26.4	54	2.9	43.2	63.1	2.7	34.2
CBE most be done every month/false.	31.4	18.2	50.3	22.9	15.7	61.4	20.4	24.1	55.5
The best time for BSE is during the menstrual period/false.	42.8	22.6	34.6	23	15.1	61.9	22.8	29.9	47.3
BSE is done by looking into the breast without touching them/false.	75.5	8.2	16.4	10.8	45.3	43.9	9.4	61.4	29.2
Obesity is a risk factor that increases the incidence of BC/true.	39.9	7.6	52.5	25.9	12.2	61.9	33.3	9.8	56.9
Nipple discharge rather than milk could be a symptom of BC/true.	60.8	7	32.3	37.9	10	52.1	50	8.4	41.6
Changes in the skin could be a symptom of BC/true.	47.5	8.9	43.7	29.3	8.6	62.1	38.9	8.7	52.3

(✓): The percentage of participants who choose the right answer. (×): The percentage of participants who choose the wrong answer. (!) The percentage of participants who choose the answer "I don't know".

Table 5. Shows the results of the analytical test that applied to see the relation between the variables, the results showed that the practice of BSE, CBE and mammography is influenced by attending campaigns. Regarding the knowledge items, the results also show that there is a positive relation between attending campaigns and choosing the correct answer except for the third statement the says “breastfeeding can reduce the risk of BC” which has a P value > 0.05.

	Chi-square	(p)
Practice		
BSE	25.954	0.000
CBE	15.172	0.002
Mammography	8.290	0.040
Knowledge		
BC is the most common cancer in females in KSA/true	6.528	0.038
First pregnancy before the age of 35 can reduce the risk of BC/true	7.102	0.029
Breastfeeding can reduce the risk of BC/true	1.873	0.392
BSE must be done every 3 months/false	13.874	0.001
Women above the age of 40 should do mammogram annually/true	9.558	0.008
CBE most be done every month/false	10.087	0.006
The best time for BSE is during the menstrual period/false	30.667	0.000
BSE is done by looking into the breast without touching them/false	30.774	0.000
Obesity is a risk factor that increase the incidence of BC/true	7.092	0.029
Nipple discharge rather than milk could be a symptom of BC/true	15.642	0.000
Changes in the skin could be a symptom of BC/true	11.150	0.004

5. Discussion

As this study aimed to evaluate the impact of the awareness campaigns, a better knowledge and practice have been observed in the participants who attend awareness campaigns. The results showed that the attendance is not related to any socio-demographic characteristics. Other factors like a diseased relative or friend and a previous breast disease or surgery also seems that it has no relation with attending campaigns. The attendance of campaigns in our study was lower than the attendance in a Similar study in Ghana [22], which reported that From the 131 participants of the intervention community, 127 (97%) reported having attended the BC awareness program. The same study has a different results regarding the factors that affect the attendance, Participants from the intervention community reported more family history of breast cancer and previous history of breast disease than those from the referent community. Regarding the reason of not attending these campaigns, our study results showed that 26.5% of the study sample chose “No enough advertisement” as a reason could prevent them, which indicate the good willing of most the females to attend campaigns, “Fear from these activities” represent only 21% of the total sample which is agreed with a study applied on Arab women in Israel which says that personal, psychological, environmental factors influence participation in screening programs and other screening activities [23]. Our study results showed that 81.3% of the participants agreed that BSE is an effective way in early detection of BC which is similar to the results of Ghana’s study [22] that accept BSE as a useful way for finding the disease early. Regarding the practice of EBE and in the same previous study that applied on women from Ghana [22], the results showed percentage of practicing among women who attend the intervention equal to 86.3% which is higher than our result that equal 10.9% for those who practice gradually and 46.8% for those who chose “sometime”. According CBE and mammogram practicing among adult females included in our study, results showed a high numbers compared with a study applied in Al-Hassa city [11] that reported a practicing percentage equal to 5% according to CBE and 3% regarding mammography between the participants. As a reason of not doing CBE or mammography, 23% of the total sample chose “My doctor didn’t suggest that” which is lower than a similar study that applied in Riyadh [12], in which the majority of the participants with a percentage of 92.6% chose “physician recommendation” as a strong reason to apply screening, another study [24] found that Physician recommendation is a strong predictor to perform early detection methods. While “fear of

mammography” represent only 16.3% of the total sample, it was a strong barrier according that represent 54.9% of the adult female in Qatar [14]. There was a very clear difference regarding the knowledge of BC between participants who attend campaigns and those who didn't. In 7 questions out of 11, the “I don't know” choice took a percentage of 45% to 65% of the overall answers. 73.3% of the total sample chose the correct answer in the statement that says “Breastfeeding can reduce the risk of BC” which indicate the effect of the religious culture that recommends breastfeeding. The results of a similar study [11] shows a percentage of 77% of the participants chose the correct answer regarding the prevalence of BC which is more than the result of the present study that equal 45.6% of correct answers among the total sample. But at the same previous study an information about the annual screening by mammography has got a percent of 31.3% of the correct answers which is lower than the result of our study that shows a percent of 63.1% of the correct answers. Regarding the statement that says “Obesity is a risk factor” the result were similar in both the previous [11] and present study with percent of 35%, 33.3% respectively. The P-value's of the influence of attendance on the knowledge and practice of EBE, have strongly approved the hypothesis of the study that says there's an effect of attending campaigns on the knowledge about BC and practice of EBE, which is also reported by other studies in Ghana and Qatar [22] [25]. The results of this study are affected by some limitations; one of them is lack of available and reliable data about the number of the awareness campaigns that were held inside the university or outside it and number of the attending population of the campaigns. The reason of this limitation is the lack of statistical departments in the sponsored organizations or associations. But as this awareness movement is still growing, an estimated number of attending populations has been taking from a governmental organization as it is the only available data. Another limitation is that the majority of the participants are below that the age of risk of having breast cancer (40 years old), and this is mainly because of the age groups distribution that works in Saudi universities as most of them are below the age of 40 years old. Although this study has its own limitations, it is the first study in Saudi Arabia that assess the effect of the awareness campaigns on different aspects that related to early detection of breast cancer, which will help in improving the health educations and screening programs and designing an appropriate programs for different age groups in the country.

6. Conclusion

The findings indicate a great impact of the community-based awareness campaigns on the practice of early breast examination such as breast-self examination, clinical breast examination and mammography; also it affects the knowledge regarding these methods, symptoms of breast cancer, risk factors, procedure and the right time for screening. Although the attendances of the campaigns were almost half of the participants, the majority of the attendances were below the age of risk (40 years).

7. Recommendations

The study recommend a multilevel intervention for every age group in the population, and specially the age group that at risk to overcome the increasing number of the new cases which diagnosed in later stage, more research is needed to identify the barriers associated with different ages and to determine the special needs for different groups in the population which can help in a designing an appropriate types of intervention according to each group in the population fore example lectures, seminars, workshop and face-to-face interviews, such different type of awareness activity can rise the level of awareness and reduce the fear related to cancer activities or screening methods or even results of these early-detection methods which help in the early detection of the disease and better prognosis.

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