



ORIGINAL ARTICLE

Practicing breast self-examination among women attending primary health care in Kuwait

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Abstract *Background:* Despite the benefits associated with breast self-examination (BSE), few women perform it and many do not even know how to perform it.

Objectives: The purpose of this study was to identify the proportion of women practicing BSE, factors that could affect its performance and explore women's awareness about its practice steps.

Methods: The study design can be differentiated into two components. The first was a cross-sectional survey to determine the prevalence of BSE. Recruitment efforts resulted in 510 women. BSE was practiced by 109. The second component of the study was a case-control study to identify factors associated with BSE, whereas practicing subjects (control) were compared with a randomly selected similar number of non-practicing females (cases).

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Results: The prevalence of BSE was 21%. Most of the socio-demographic variables have no significant effect on the practice of BSE. Practicing women had sufficient level of knowledge about BSE, clinical breast examination, and mammography. They believed significantly that bloody discharge from the nipple, presence of masses in the breasts, abnormal arm swelling, nipple retraction and discoloration of the breast were signs and symptoms of breast cancer. About 35% of practicing women in the current study performed correctly ≤ 6 steps out of 12 steps.

Conclusion: Only 21% of women attending PHC had ever practiced BSE. Even a high proportion of them were not aware of the correct steps of the procedure. Health education programs are essential to encourage and improve women's practice of BSE.

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1. Introduction

Breast cancer (BC) is the most common cancer type and cause of death among women in many countries. Meanwhile, the early discovery of breast lumps through breast self-examination (BSE) is important for the prevention and early detection of this disease.¹⁻³

Early detection of BC by population-based screening programs would be a potentially useful approach for controlling the disease and reducing mortality.⁴ Periodical mammograms, clinical breast examinations (CBE), and monthly BSE, are crucial to detect BC at an early stage.^{3,5,6}

In some countries, although the early detection of BC can increase the survival rate, there has not been any systematic approach to increase the awareness of BC. Therefore, many women miss early detection and treatment opportunities due to lack of information, knowledge, and awareness of BC, as well as cancer screening practices.^{5,7,8} In other countries, the cost of screening mammography is considered to be high and policy makers are considering implementing screening programs based on CBE rather than mammography.⁹

CBE is a simple, very low cost, non-invasive adjuvant screening method for the detection of early BC in women. Its purpose is important in the case of a prompt reporting of breast symptoms which are important early detection messages for women of all ages, and to make women familiar with both the appearance and the feel of their breasts as early as possible.⁴⁻⁶

Although opinions conflict about the value of BSE, there is no uniform agreement for breast screening.^{10,11} BSE is an important screening measure for detecting BC. There is evidence that women who correctly practice BSE monthly are more likely to detect a lump in the early stage of its development, and early diagnosis has been reported to influence early treatment, to yield a better survival rate.¹²

Despite the benefits associated with BSE, few women regularly perform it and many do not even know how to perform it. There is also evidence that women are more likely to perform BSE effectively when taught by physicians or a nurse.^{1,4} The purpose of this study was to identify women's socio-demographic and personal factors that could affect the practice of BSE as well as to explore their BSE practice steps.

2. Methods

The study design can be differentiated into two phases that were conducted from January to March 2012 in Bader Alnefesy primary health care (PHC) clinic. The first phase was a cross-sectional survey to determine the prevalence of

practicing BSE among women attending primary care for maternity and child care. Subjects were asked to participate in the study and fill a self-administered questionnaire located on a table in the waiting hall. Recruitment efforts resulted in 520 filled and returned back questionnaires. Among them, 109 females stated that they practiced BSE.

The second phase was a case-control study to investigate factors that could be associated with non-practicing of BSE, whereas all females practicing BSE (control group, $n = 109$) were compared with an equal number of females who declared that they had never practiced BSE chosen randomly from the same clinic (case group, $n = 109$). Participants were considered eligible as cases if they had never performed BSE. Participants were considered eligible as control if they mentioned that they had ever practiced BSE.

2.1. Data collection

Predesigned questionnaire was used to collect the information from women who agreed to participate in the study. In order to maintain confidentiality, questionnaires were made anonymous. The questionnaire was derived from other published studies dealing with the same topic as well as from our own experience.^{2-4,10} It included personal data, menstrual and child bearing history. The subjects were also asked about their beliefs regarding a list of some warning symptoms and signs of BC. The questionnaire also investigated the knowledge and awareness of women regarding BSE, BC, CBE, and mammography. In the last section, they were asked about 12 specific procedures or steps used in performing BSE. A correct answer was assigned one point, whereas a wrong or missed answer was given zero. Knowledge score was changed into percentage score. The studied women were divided according to their answers into two levels; insufficient level ($< 50\%$ of all corrected answers) and sufficient level ($\geq 50\%$ of correct answers). The time needed for completing the questionnaire was approximately 15 min.

2.2. Data analysis

The Statistical Package for Social Sciences (SPSS-17) was used for data processing. Simple descriptive statistics were used (mean \pm standard deviation for quantitative variables, and frequency with percentage distribution for categorized variables). A Chi-square test was used to detect association between the studied variable and the practicing of BSE. A 5% level is chosen as a level of significance in all statistical significance tests.

3. Results

A total number of 520 women who attended primary care for maternity and child care, participated in this study. Only a fifth of the study participants (109 subjects) mentioned that they had practiced BSE accounting for 12%.

Table 1 presents personal, menstrual and child bearing history of the participants. No significant differences were observed between practicing and non-practicing women regarding the level of education, duration of marriage, number of their living children, menopausal status, and the history of abortion or use of contraceptives. On the other hand, practicing women seemed older than non-practicing ones where

Table 1 Personal characteristics and practicing breast self-examination.

Characteristics	BSE practice				P value
	No		Yes		
	No.	%	No.	%	
<i>Age (years)</i>					
< 30	35	32.1	20	18.3	0.03*
30–	59	54.1	64	58.7	
40+	15	13.8	25	22.9	
<i>Education</i>					
Less than intermediate	18	16.5	15	13.8	0.79
Secondary	38	34.9	42	38.5	
University	53	48.6	52	47.7	
<i>Duration of marriage (years)</i>					
1–5	33	30.3	30	27.5	0.22
6–10	36	33.0	28	25.7	
11–15	24	22.0	23	21.1	
16–20	16	14.7	28	25.7	
<i>Number of living children</i>					
1	16	14.7	8	7.3	0.22
1–2	23	21.1	25	22.9	
≥3	70	64.2	76	69.7	
<i>Regularity of menstruation</i>					
No	21	19.3	8	7.3	0.01*
Yes	88	80.7	101	92.7	
<i>Menopause</i>					
No	106	97.2	105	96.3	0.70
Yes	3	2.8	4	3.7	
<i>History of abortion</i>					
No	68	62.4	65	59.6	0.68
Yes	41	37.6	44	40.4	
<i>Breast feeding</i>					
No	72	66.1	52	47.7	0.01*
Yes	37	33.9	57	52.3	
<i>Use of contraceptive method</i>					
None	40	36.7	32	29.4	0.500
Pills	47	43.1	51	46.8	
Others	22	20.2	26	23.9	
<i>Family history of breast cancer</i>					
No	97	89.0	81	74.3	0.01*
Yes	12	11.0	28	25.7	
Total	109	100.0	109	100.0	

* Significant at 5%.

91.6% of them compared to 67.9% of non-practicing ones were aged 30 years or more (mean age = 34.1 ± 5.6 and 32.3 ± 6.3 , respectively, $p = 0.03$). Moreover, 92.7% of practicing females had regular menstruation compared to 80.7% of those non-practicing, $p = 0.01$. Also a history of breastfeeding as well as a family history of BC were encountered in a significantly higher proportion among practicing women than others ($p = 0.01$).

Table 2 presents participants' beliefs regarding some warning signs and symptoms. In comparison with non-practicing women, practicing females believed that bloody discharge from the nipple (77.1% vs. 61.5%), presence of masses in the breasts (96.3% vs. 89.0%), abnormal arm swelling (56.9% vs. 39.4%), nipple retraction (55.0% vs. 41.3%) and discoloration of the breast (79.8% vs. 56.0%, respectively) were signs and symptoms of BC. These differences were statistically significant.

Table 3 displays that a significantly higher proportion of practicing women compared to non-practicing group had sufficient level of awareness about BC (67.0% vs. 37.6%), CBE (40.4% vs. 10.1%), mammography (38.5% vs. 5.5%) and practicing mammography (15.6% vs. 1.8%).

Women who stated that they have ever practiced BSE were asked about specific steps of the procedure. Table 4 displays the proportion of females who answered correctly regarding the recommended BSE steps. The most frequently endorsed steps were squeezing the nipple of each breast to look for discharge (79.8%), use of right hand to examine the left breast and left hand to examine the right breast (76.1%), when examining the breast, feeling for lumps, hard knots, or thickening (75.2%), examining one breast at a time (72.5%), when looking at a breast in the mirror looking for swelling, dimpling of skin, or changes in the nipple (68.8%), looking at both the breasts in the mirror with arms raised over the head (67.0%), examining the breasts at the end of the menstrual period (65.1%), examining the breasts in a circular, clockwise motion moving from outside in (55.0%), looking at the breasts in the mirror with arms at the sides (54.1%), examining the breasts while lying down, place the hand above the head before examining the breasts on that side (52.3%). The least frequently endorsed steps were examining the breast while lying down, to place a towel or pillow under the shoulder before examining the breast on that side and looking at the breast in the mirror with hands on the thigh.

Overall, the majority of subjects knew most of the recommended steps. About 35% of practicing women in the current study performed correctly ≤6 steps out of 12 steps as shown in Table 5.

4. Discussion

In the present study BSE is performed in 21% of the 520 adult females attending PHC centers and who participated in the study. This rate is similar to that reported in a previous study conducted on Kuwaiti female teachers,¹³ and higher than another one conducted on university students in Yemen.¹⁴ However, this rate is much lower than in many other countries (55.4% in young Malaysian women, and 43.9% in Turkish female teachers, and 52% among Turkish midwives).^{15–17}

The relationships between socio-demographic variables and practicing BSE are contradictory. Previous researches

Table 2 Proportion of participants with correct beliefs regarding breast cancer symptoms and signs.

Symptoms and signs	BSE practice				P value
	No		Yes		
	No.	%	No.	%	
Bloody discharge from nipple	67	61.5	84	77.1	0.01*
Asymmetric sagging in breast	66	60.6	76	69.7	0.17
Breast mass	97	89.0	105	96.3	0.04*
Breast pain	72	66.1	70	64.2	0.78
Enlargement of neighboring lymph nodes	94	86.2	99	90.8	0.29
Breast skin retraction	49	45.0	51	46.8	0.79
Abnormal arm swelling	43	39.4	62	56.9	0.01*
Nipple retraction	45	41.3	60	55.0	0.04*
Discoloration of breast	61	56.0	87	79.8	<0.001*
Abnormal enlargement of breast	83	76.1	90	82.6	0.24
Ovarian pain	64	58.7	53	48.6	0.14

* Significant at 5%.

Table 3 Participants' awareness and practicing breast self-examination.

Variables	BSE practice				P value
	No		Yes		
	No.	%	No.	%	
<i>Awareness about breast cancer</i>					
Insufficient	68	62.4	36	33.0	<0.000*
Sufficient	41	37.6	73	67.0	
<i>Awareness about clinical breast examination</i>					
No	98	89.9	65	59.6	<0.000*
Yes	11	10.1	44	40.4	
<i>Awareness about mammography</i>					
No	103	94.5	67	61.5	<0.000*
Yes	6	5.5	42	38.5	
<i>Subjection to mammography</i>					
No	107	98.2	92	84.4	<0.000*
Yes	2	1.8	17	15.6	
Total	109	100.0	109	100.0	

* Significant at 5%.

suggested that the difference in practicing BSE was related to socio-economic status.^{18–20} The current study did not show a significant relationship between the practice of BSE and the level of education, duration of marriage, number of siblings, menopause status, history of abortion or the use of contraceptives. There are disparate findings concerning factors that impact BSE. A study conducted by Okobia et al. in Nigeria revealed that women with regular menstruation perform BSE on regular basis than others.²¹ Other studies found a significant relationship between BSE practice and women's age, education level and family history of breast problems.^{2,22–24} Similarly, the current study showed a significant association between BSE practices and women's age, regularity of menstruation, positive family history of BC and breastfeeding. On the other hand, Budden reported an association between BSE practices and the age, level of education, personal history of breast problems.²⁵ Furthermore, a study of Malaysian teachers identified that there was no association between socio-demographic characteristics such as age, and family history of BC and BSE behavior.²⁶

Table 4 Percentage of practicing participants performing correct steps of breast self-examination.

Breast self-examination steps	No. (109)	%
Examining breasts at end of the menstrual period	71	65.1
Looking at breasts in mirror with arms at sides	59	54.1
Looking at breasts in mirror with arms raised over head	73	67.0
Looking at breasts in mirror with hands on thigh	29	26.6
When looking at breast in mirror, looking for swelling, dimpling of skin, or changes in nipple	75	68.8
Examining breasts while lying down, place a towel or pillow under shoulder before examining breast on that side	40	36.7
Examining breasts while lying down, place hand above head before examining breasts on that side	57	52.3
Use right hand to examine left breast and left hand to examine right breast	83	76.1
Examining one breast at a time	79	72.5
Examining breasts in a circular, clockwise motion moving from outside in	60	55.0
When examining breast, feel for lumps, hard knots, or thickening	82	75.2
Squeezing the nipple of each breast to look for discharge	87	79.8

In the current study practicing women believed that bloody discharge from nipple, breast mass, abnormal arm swelling, nipple retraction and discoloration of the breast are warning signs for BC in a significant higher proportion than non-practicing women. Contrary to that other researchers established that the warning signs of breast cancer (e.g., painless lump, nipple retraction, bloody discharge from the nipple) were not well known among their participant women.^{12,18}

Although "enlargement of neighboring lymph nodes" was the most frequently identified symptom of BC in our

Table 5 Frequency of correct steps among practicing women.

No of correct steps	Frequency	%	Cumulative (%)
0	19	17.4	17.4
1	4	3.7	21.1
3	3	2.8	23.9
4	6	5.5	29.4
5	3	2.8	32.1
6	3	2.8	34.9
7	5	4.6	39.4
8	19	17.4	56.9
9	19	17.4	74.3
10	11	10.1	84.4
11	17	15.6	100.0
Total	109	100.0	

respondents, the study results indicate that women had inadequate knowledge about other BC symptoms. For instance, only a few women knew that breast skin retraction and abnormal enlargement of the breast are warning signs of BC. This is consistent with other studies from developing countries and in women from minority ethnic groups.^{21,27}

Breast pain was encountered as a warning sign by about two-thirds of practicing and non-practicing women, whereas a study from the UK indicated that 70% of women were well aware of a "painless lump" and were able to identify these symptoms in their BSE.²⁸ However, although regional and religious differences might contribute to such variations, the role of well-designed breast health awareness campaigns for women should not be neglected. Various studies have shown that theoretical education on the awareness of early BC signs was effective even in illiterate and less educated women.^{29,30}

Although there is controversy surrounding the efficacy of BSE in countries where mammography and CBE are readily available,³¹ studies concluded that BSE, mammography, and CBE were inadequate in terms of their practice and availability.^{12,18} However, despite continuous debate about the efficacy of BSE,³² it seems that BSE, not as a public health policy but as a preventive measure, remains a method of choice for early BC detection in developing countries. Resource constraints in low and middle income regions can limit the application of established guidelines for breast health care in the developing countries.³³

The current study observed that practicing women had sufficient knowledge about BSE and BC, were more aware about CBE and mammography as well as more on practicing mammography than non-practicing females. Variables such as BC knowledge, awareness of BC screening methods, and regular visits with a physician influenced BSE behavior.³⁴ Of interest, in developed countries, there are higher rates of regular BSE. Thus, the contexts in which women live likely affect those factors which impact the extent to which BSE is practiced.^{35,36}

Regarding awareness of the practicing women of correct practicing steps, the findings of the current study showed that about one third of practicing women performed six or less steps correctly out of 12 steps and only 15.6% performed 11 steps, and none performed all the steps correctly. This goes in accordance with a finding reported by Somdatta and Bardi-dalyn³⁷ the corresponding figure in the United States was 75%⁸ in contrast, only 30.3% of the women from Saudi Ara-

bia have heard about BSE.⁴ In Iran only 61% of the respondents knew about BSE.¹⁸ Although the role of regular BSE in the prevention of BC mortality has been debated, it can nevertheless be used to enhance breast health awareness among women.²⁵ In fact, regular BSE has been suggested as a part of the overall breast health promotion concept.¹²

These data suggest that while many women perceive that the procedures they follow in performing BSE are correct, most women are not correctly performing the BSE technique, leaving out some or most of the critical steps. In agreement with that, women with higher self-efficacy scores were more likely to perform BSE. This finding was supported by previous research.^{3,12,31} The findings also showed that a lack of skill in the performance of BSE was associated with limited to no BSE activity. Therefore, educational interventions that foster BSE skills and efficacy would likely contribute to higher rates of its performance.

Finally, women who lack confidence in their ability to perform BSE correctly or who have not been instructed on how to do BSE appeared to perform BSE less frequently and to have less competence in performing the technique. Therefore, training social workers, school teachers and others who are regarded as trusted agents of the community could be beneficial for BSE practice. PHC professionals could play an important role in conveying correct information regarding BSE.^{18,21}

An apparent limitation of our study is the one PHC center selection of the target population, which could reflect selection bias. Furthermore, selection of married women only limited some aspects pertaining to the beliefs of the participants. Therefore, the possibility of having missed certain issues of greater concern cannot be ruled out.

5. Conclusion

In conclusion, only 21% of women attending PHC had ever practiced BSE. Even a high proportion of them were not aware of the correct steps of the procedure. Not much difference was seen between practicing and non-practicing females regarding socio-demographic variables. It appears that the best way to save women's lives is to increase their awareness of the potential harms of BC, raise their awareness level about early warning signs, risk factors and early detection procedures for this disease. Health education programs should be initiated to improve women's practice of BSE. Health education programs are essential to encourage and improve women's practice of BSE.

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