

Original Article

Knowledge and Factors Affecting Breast Self-Examination among Kuwaiti Women

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ABSTRACT

Objectives: To determine the frequency of practicing breast self-examination (BSE) among Kuwaiti females and factors that may influence it

Design: Questionnaire based cross-sectional survey

Setting: Multi-Ministries Compound, Kuwait

Subjects: Data was collected from 966 educated Kuwaiti female volunteers through a self-administered questionnaire.

Main Outcome Measures: Data regarding the practice of BSE and factors influencing it

Results: Among the study sample 357 (37.0%) were practicing BSE. Their mean age was 31.6 ± 8.8 years. The main reasons for not practicing BSE were fear of cancer discovery (13.5%), forgetfulness and failure to realize its importance (15.3%). Moreover, 28.9% did not know the method of examination and 27.8% wished to learn. Only

21.6% reported that they did BSE practice on monthly basis.

Women aged 20-29 years, married with middle income were insignificantly less likely to practice BSE than other categories. Students were more likely to practice BSE than working ladies (OR = 0.3, 95% CI 0.1-0.7). There was a lower possibility of practicing BSE among women receiving their knowledge from TV / radio, newspapers / magazines and friends / relatives than those receiving from doctors. Moreover, the possibility of not practicing BSE decreased if the main source of knowledge were friends/relatives, nurse, media/newspapers respectively compared to those with no source of information.

Conclusion: The frequency of BSE is low. It appears that a health education and training program will improve the rate of correct BSE performance.

KEY WORDS: breast cancer, breast self examination, knowledge, practicing

INTRODUCTION

Breast cancer is a devastating disease that is rapidly growing in overall incidence in all populations. With one million new cases in the world each year, breast cancer is the commonest malignancy in women and comprises 18% of all female cancers^[1].

In the United Kingdom, where the age standardized incidence and mortality is the highest in the world, there are more than 14,000 deaths each year, and the incidence is increasing particularly among women aged 50-64 years^[2]. In the United States, breast cancer, the second most common cancer among women, accounts for one out of every three cancer diagnoses and 17% of all female cancer deaths^[3-4]. Breast cancer is the most common cancer among females in Kuwait. It presented as 36.3% of all cancers in Kuwaiti females. The age standardized incidence rate was 44.7 per 100,000 among Kuwaiti

females^[5]. The large difference in the incidence of disease between Westernized and non-Westernized countries is remarkable^[6].

Early detection represents the key approach for reducing mortality from this disease^[7]. Recommended prevention techniques to reduce breast cancer mortality and morbidity include mammography and clinical breast examination (CBE) for women 40 years of age and older^[3,8], and monthly breast self-examination (BSE) for women 20 years of age and older^[3].

BSE, a cost-free health practice under women's control, can be practiced by both young and old women^[9]. Often, breast cancer is detected by women themselves through BSE^[10-11] or by their partners^[12]. Women who regularly practice BSE are more likely to detect breast cancer at an early stage^[12]. Results from the Canadian National Breast Screening Study suggest that the performance of specific BSE

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components may reduce the risk of death from breast cancer^[13].

No precise statistics on the incidence and prevalence of breast cancer among Middle Eastern Asian Islamic women are available^[14]. Hence, it is important to stress the practice of BSE as a complementary tool in efforts to detect breast cancer early. This article specifically focuses on breast cancer screening among Kuwaiti women because little is known about the knowledge level, awareness of breast cancer and BSE in Kuwait and the Arab World. Thus, the aim of this study was to determine the frequency of BSE among Kuwaiti females and to study factors that may influence it.

SUBJECTS AND METHODS

This was a cross-sectional study of self-reported knowledge and frequency of BSE practice among Kuwaiti women. The target population was all Kuwaiti females attending the multi-ministries compound within a four week period. Subjects who met the following selection criteria were included in the study: (a) 19 years of age or older; (b) Kuwaiti nationality; (c) able to understand, read, and write; (d) no personal history of breast cancer.

The study design can be differentiated into two components. The first was a descriptive one to identify the frequency of BSE practice among Kuwaiti females attending the Multi Ministries Compound in Kuwait city during 2004. The second was a comparative study to detect factors that may affect non-practice of BSE. For this purpose, females who participated in the study were classified into two groups (practicing versus non-practicing BSE).

Because Kuwaiti women were the focus of the study, the Multi Ministries Compound in Kuwait city was chosen as the main location for contact with potential subjects. This compound was chosen because it is the largest governmental building that provides many services to different social classes of the Kuwaiti population.

Announcements were made, and women were asked to attend a meeting at which the study was explained by the primary researcher. Women were informed that their responses would be kept confidential, and code numbers rather than names were assigned to the data. Women also were told that they could withdraw from the study at any time. Involved women received general information about the study and their permission to participate was obtained.

Data were collected from eligible females by a self-administered questionnaire. The surveys were limited to a brief series of questions to encourage participation in the study. Questionnaires were then distributed to the women, and completed questionnaires were collected the same day, or at

a later time that was mutually convenient for both participant and the researcher. Data collection was conducted over a four-week period. The total number of women approached was 1297. Out of them 966 women participated in the study, with a response rate of 74.4%.

The questionnaire started by socio-demographic data (age, marital status, education, occupation, income and number of living children). To assess the knowledge of females about breast cancer and its methods of detection, the questionnaire included ten questions. Five of them were related to knowledge about signs and symptoms of breast cancer (*i.e.*, pain, fissures and laceration of nipples, swelling, discharge, weight loss) and the others were related to best methods of breast cancer detection (*i.e.*, BSE, clinical examination, radiological examination, ultrasonography and biopsy). The knowledge index for these items was calculated for each female by summing the right answers to these ten questions. According to this, the index was divided into three knowledge categories ($\leq 50\%$ = low, $> 50\% \& \leq 75\%$ = intermediate and above 75% = high level). Also, the questionnaire included data about BSE (frequency of BSE, source and quality of information about BSE, best age of practicing BSE)

The questions were administered in Arabic and completed in 30 to 50 minutes. Because only women, who could read and write, were included in the study, participants did not experience a barrier in completion of the questionnaires. Only few women asked for minimal clarification of segments of the questionnaire from the primary investigator.

Analyses were initially carried out to compare between females who did and did not practice BSE using a series of univariate comparisons. For the possible confounding effect of the variables, multiple logistic regression was used for the final analysis to predict factors which may be associated with BSE practice. Univariate differences between both groups were detected by independent t-test for normally distributed continuous variables and Chi square test for qualitative variables. Mann-Whitney test was used to detect difference in the total score between the studied groups.

In multivariate analysis, associations between the study variables and practicing status were expressed in terms of odds ratios (OR) together with 95% confidence intervals (95% CI). All explanatory variables included in the logistic model were categorized into two or more levels (^(R) = reference category): Age (years): $< 20^{(R)}$, 20-29, 30-39, ≥ 40 ; Marital status: Single^(R), married, widow / divorced; Having children: no^(R), yes; Level of education: intermediate level and less^(R), secondary, university or higher; Income level/ month: < 500 KD^(R), 500-1000 KD, > 1000 KD; Occupation: working^(R), house

Table 1: Comparison of socio-demographic factors between practitioners and non-practitioners of BSE

Variables	Total sample N = 966		Practice BSE N = 357		Not practice BSE N = 609		p-value
	n	%	n	%	n	%	
Age groups							
< 20 Y	58	6.0	11	3.1	47	7.7	p < 0.001
20 - 29	389	40.3	119	33.3	270	44.3	
30-39	345	35.7	144	40.3	201	33.0	
40 & above	174	18.0	83	23.2	91	14.9	
Mean ± SD	31.6 ± 8.8		33.4 ± 8.9		30.5 ± 8.5		p < 0.001
Marital status							
Single	278	28.8	84	23.5	194	31.9	p < 0.017
Married	634	65.6	249	69.7	385	63.2	
Others (divorced & widow)	54	5.6	24	6.8	30	4.9	
Having living children							
No	362	37.5	108	30.3	254	41.7	p < 0.001
Yes	604	62.5	249	69.7	355	58.3	
Educational level							
Intermediate level & below	71	7.4	29	8.1	42	6.9	p > 0.05
Secondary	374	38.7	132	37.0	242	39.7	
University or higher	521	53.9	196	54.9	325	53.4	
Income level/ per month							
< 500 KD#	141	14.6	50	14.0	91	14.9	p < 0.013
500-1000 KD	385	39.9	123	34.5	262	43.0	
> 1000 KD	440	45.5	184	51.5	256	42.0	
Occupation							
Working	770	79.7	295	82.7	475	78.0	p < 0.001
House wife	61	6.3	23	6.3	38	6.2	
Retired	39	4.0	24	6.7	15	2.5	
Student	96	9.9	15	4.2	81	13.3	

#KD = 2.93 \$ (National Bank of Kuwait)

wife, retired, student; Main source of information about cancer breast: doctor^(R), pamphlets, TV / Radio, newspapers / magazines, friends / relatives; Main source of information about BSE: do not know^(R), doctor; nurse, media / pamphlets, relatives / friends; Ideal frequency of BSE in their opinion: every month^(R), every few months, yearly; Best age to start BSE: ≥ 20^(R), ≥ 30, ≥ 40; Knowledge score level about breast cancer signs, symptoms and methods of detection: low^(R), intermediate, high. Analysis was performed using "SPSS for Windows (9)" statistical package.

RESULTS

A total number of 966 Kuwaiti females free from breast cancer were eligible and included in the study. Among them, 357 (37%) were performing BSE. The mean age of the study population was 31.6 ± 8.8 years. Income varies in our sample, about 14.6% of the women earned below 500 KD, 39.9% of them earned between 500 -1000 KD, and 45.5% had an income above 1000 KD. The majority of our

sample was working females (79.7%).

Table 1 shows the socio-demographic characteristics of the study population. More than three quarters (76.0%) of our sample was between the age group of 20 - 40 years. Only 6.0% were below the age 20 years and 18.0% were 40 years and above. Most of our sample had secondary and higher education or university and higher education (38.7% and 53.9% respectively).

The main reasons for not performing BSE were, fear of cancer discovery (13.4%), forgetfulness (14.6%), failure to realize the importance of BSE (15.3%) and lack of knowledge about the technique of BSE (28.9%). 27.8% wished to learn the method of BSE (Fig. 1). 21.6% volunteers reported that they performed BSE on a monthly basis, 51.3% did every few months and 27.8% did it rarely or yearly (Fig. 2).

To determine the potential factors that may be associated with BSE practice among Kuwaiti females, a total of 357 ladies performing BSE were compared with 609 not performing BSE. The mean

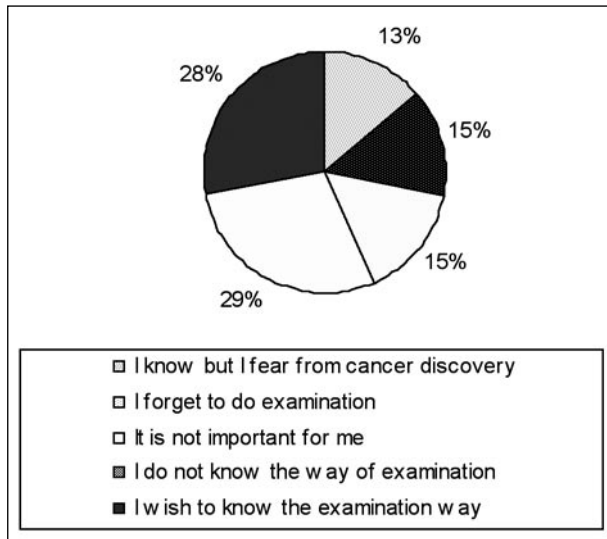


Fig. 1: Reasons for not performing BSE

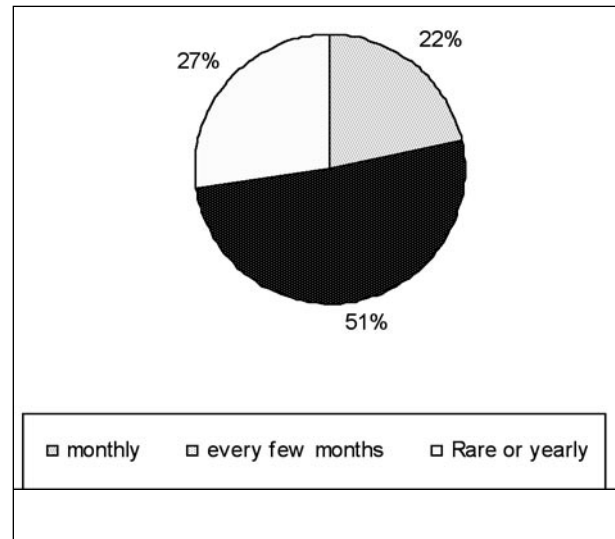


Fig. 2: Rate of BSE practice

Table 2: Comparison of factors influencing BSE between practitioners and non-practitioners

Variables	Total sample N = 966		Practice BSE N = 357		Not practice BSE N = 609		p-value
	n	%	n	%	n	%	
Source of information about cancer breast							
Doctor	24	2.5	14	3.9	10	1.6	p < 0.001
Health pamphlets	92	9.5	38	10.6	54	8.9	
TV & Radio	126	13.0	33	9.2	93	15.3	
Newspapers & magazines	211	21.8	65	18.2	146	24.0	
Friends	513	53.1	207	58.0	306	50.2	
Knowledge about BSE							
Do not know	107	11.1	23	6.4	84	13.8	p < 0.001
Yes I know	859	88.9	334	93.6	525	86.2	
Source of information about method of BSE							
Do not know	107	11.1	23	6.4	84	13.8	p < 0.001
Doctor	198	20.5	98	27.5	100	16.4	
Nurse	26	2.7	11	3.1	15	2.5	
Media & Health pamphlets	261	27.0	83	23.2	178	29.2	
Friends and relatives	374	38.7	142	39.8	232	38.1	
Opinion regarding frequency of practice							
Every month	358	37.1	178	49.9	180	29.6	p < 0.001
Every few months	445	46.1	140	39.2	305	50.1	
Yearly	163	16.9	39	10.9	124	20.4	
Opinion regarding best age for starting BSE							
20 year & above	299	31.0	121	33.9	178	29.2	p < 0.002
30 years & above	438	45.3	174	48.7	264	43.3	
40 years & above	229	23.7	62	17.4	167	27.4	
Knowledge score level							
Low score	267	27.6	63	17.6	204	33.5	p < 0.001
Intermediate score	484	50.1	178	49.9	306	50.2	
higher scores	215	22.3	116	32.5	99	16.3	
Median (IQR)*	6.8 (2.0)		7.2 (2)		6.5 (2.2)		P<0.001**

* (IQR) = Interquartile range; **Mann-Whitney test; BSE = Breast Self Examination

Table 3: Factors predicting BSE practicing: results of multivariate logistic regression analysis

Variable	*OR (95% **CI)
Occupation	
Working®	1
House wife	0.8 (0.4-1.4)
Retired	2.0 (0.9-5.0)
Student	0.3 (0.1-0.7)
Main source of Knowledge about breast cancer	
Doctor®	1
Pamphlets	0.5 (0.2-1.4)
TV & Radio	0.2 (0.1-0.6)
Newspapers & magazines	0.4 (0.1-0.9)
Friends and relatives	0.5 (0.2-0.9)
Main source of Knowledge about BSE	
Do not know®	1
Doctor	1.1 (0.4-2.5)
Nurse	0.5 (0.3-0.8)
Media & Health pamphlets	0.6 (0.4-0.9)
Friends and relatives	0.3(0.2-0.6)
Opinion regarding frequency of BSE	
Every month®	1
Every few months	0.5 (0.4-0.7)
Yearly	0.3 (0.2-0.5)
Opinion regarding best age to start BSE	
20 year & above®	1
30 years & above	0.9 (0.7-1.3)
40 years & above	0.5 (0.3-0.8)
Knowledge score level about BC	
Low knowledge score®	1
Intermediate score	0.3 (0.2-0.5)
High score	0.5 (0.4-0.7)

Variable(s) entered on model, age groups, marital status, having living children, female education, income, occupation, source of information about cancer breast, source of information about BSE, opinion regarding frequency of BSE and best age to start BSE, and knowledge score about breast cancer

® Reference category

*OR = odds ratio

**CI = confidence interval

age of those practicing BSE was 33.4 ± 8.9 years whereas it was 30.5 ± 8.5 years for non-practitioners. The difference was statistically significant ($p < 0.001$).

The personal and social characteristics together with the results of the univariate analyses are reported in Tables 1 and 2. Women practicing BSE were significantly different from those not practicing as regards age, marital status, having children, income level and occupation. There was no significant difference between both groups regarding education. Moreover, there were statistically significant differences between both groups regarding, main source of information about

breast cancer, knowledge about BSE, main source of information about method of BSE, frequency of BSE practice as well as opinion regarding the best age to start BSE and knowledge score (Table 2).

The results of the final analyses using multiple logistic regressions are summarized in Table 3. Age, marital status, having living children and education were insignificant predictors of non-practicing BSE. Female students were more likely to practice BSE than working females (OR = 0.3, 95% CI: 0.1-0.7).

Concerning the main source of information about breast cancer, multivariate analysis revealed that a higher proportion of non-practitioners of BSE received their knowledge from TV / Radio (OR = 0.2, CI 0.1-0.6), newspapers / magazines (OR = 0.4, CI 0.1-0.9) and friends / relatives (OR = 0.5, CI 0.2-0.9) as compared to those receiving their knowledge from doctors (Table 3). Moreover, the possibility of non practice decreased if the main source of knowledge about BSE was friends / relatives (OR = 0.3, CI 0.2-0.6), nurses (OR = 0.5, CI 0.3-0.8), media / health pamphlets (OR = 0.6, CI 0.4-0.9) compared to those with no source of information

According to subject beliefs, analysis revealed that non-practice of BSE was more among those who thought that the ideal frequency of practicing BSE is once every year (OR = 0.3, CI 0.2-0.5), every few months (OR = 0.5, CI 0.4-0.7) as compared with those who believed in monthly BSE.

Ladies who thought that the best age to start BSE was 40 years and above were less liable to practice BSE than the 20 years and above age group (OR = 0.5, CI 0.3-0.8). As expected, ladies with intermediate or high knowledge scores were more likely to practice BSE than those with lower scores as shown from odds ratios and 95% CI in Table 3.

DISCUSSION

Unnecessary morbidity and mortality results from breast cancer that could have been prevented and successfully treated if detected earlier^[15]. By practicing BSE, possible cancer can be detected at an early stage so that health loss for women can be minimized^[16].

There is little information available on preventive health practices such as BSE among women in Kuwait. The results of the present study indicate that the majority of Kuwaiti females in the study were knowledgeable about the importance and practice of BSE as a means of early detection of breast cancer. These findings are inconsistent with other studies that indicated lack of awareness regarding breast cancer screening among Asian women^[9,17,18]. This can be explained by the general characteristics of the selected women. Most of them were of intermediate and high income level and had passed at least the intermediate education or were

students. Thus they may have had access to health care and many sources of knowledge.

Contrary to expectations, this study showed a contradiction between the high proportions of women who know about BSE and believe it to be effective in identifying early breast changes (88.9%), and the relatively low proportion of women who actually perform BSE routinely (37%). Even among those who performed BSE we did not know whether the technique was correct or not. However, 21.6% of them performed it at least once a month. This indicates that there is still a considerable task for health education with respect to spreading awareness about BSE and teaching the correct method. Most women are doing something with respect to BSE, but many seem to be unaware that their BSE is not being carried out correctly.

Coleman reported that, while 96% of the American women had heard about BSE, only 19 - 40% performed BSE on a monthly basis^[12]. Also, Rosvold *et al* reported that, out of 284 Norwegian women doctors, only 31% performed BSE on a monthly basis and 19% performed BSE less than once every year or not at all^[19].

The enormous difference between those knowing about BSE and those performing it indicates that for the majority of women, simply increasing their awareness of BSE is not enough to change their intention and, subsequently, behaviour. This finding goes with other research on early detection of cancer and BSE^[20] showing that knowledge is an important prerequisite for positive intention and behavior, but in itself often is not ground enough for a positive intention toward early detection behavior.

Our study revealed different reasons for not performing BSE. Women declared that they knew about BSE but were afraid of cancer discovery, were forgetful, did not know the correct method or simply did not realize the importance. This indicates that, next to accurate knowledge, health education should target the psychosocial determinants of performing BSE. Health education should therefore focus on providing women with convincing information that emphasizes the possible positive consequences of BSE and helps them to deal with the possible negative consequences of BSE. Walker *et al* and Rosswurm *et al* reported that if women had cancer they either did not want to know it or were neutral about such knowledge. These women showed less health motivation, did not perceive benefits in doing BSE, and reported barriers to doing BSE^[21,22].

Hence direct social support and pressure for performing BSE are very important. Women who feel encouraged by their family, friends, or physician to perform BSE may be more likely to actually do so^[23,24]. Besides direct support, knowing that other women perform BSE might also encourage women

to do so^[25].

In agreement with the findings of Sebahat, and Ilknur in Turkey^[26], regression analysis in our study showed that age, marital status, having children, educational and income level were irrelevant predictors of practicing BSE. Actually, demographic characteristics of women have been found to be associated with performing BSE, but the direction and strength of associations have yielded inconsistent findings. Age has been shown to have a positive relationship^[27], a negative relationship^[28,29] or no relationship^[30-33]. Educational level also has shown to have a positive relationship^[27,34-35] and no relationship^[31,32,36]. Therefore, health education is required for all social classes regardless of level of education.

On the other hand, job, main sources of knowledge about breast cancer, BSE, women's opinion about starting age, their opinion about frequency of BSE and knowledge score level were relevant predictors of practicing BSE. Similar results were found in previous studies^[27,28].

Our results revealed that the majority of sample thought that the best age to start BSE is 30 years and above. For women under 50, mammography is not considered to be a valid method for detection of breast cancer^[37]. This means that BSE is the only possible regular early detection method for women younger than 50. Morbidity data show that around 40% of all breast cancers occur before the age of 50^[38]. This would suggest that BSE, if performed correctly, is a potentially very relevant and useful method.

It was clear that women in this study had access to information about breast cancer and BSE from a variety of sources, and that the majority of those who knew about BSE learned it from sources other than medical professionals, particularly friends. It is possible that having friends performing BSE heightens one's awareness of the importance of early detection. This result supports finding of other studies in which social networks were found to be positive factors influencing different cancer screening behaviours^[39-41]. In our study, since most of the volunteers worked outside home, were students and were reasonably well educated, they were more likely to be part of social networks that have access to medical information pertaining to BSE.

In the present study, physicians were not the main source of information. This may be explained by the presence of barriers in patient-physician communication that might have hindered the dissemination of information by health care professionals to women^[14,42-43]. In Kuwait, practitioners are from different nationalities and hence, they may be reticent about asking questions and providing information to women because

of limited knowledge about their cultural and religious practices^[14]. Physicians are less likely to share information with individuals they perceive to be different from themselves in terms of gender, social class, ethnicity and age^[44].

In addition, this study found that only 2.7% of females received their information about BSE from nurses. This result goes with findings of other studies in which nurses do not routinely teach BSE to their female clients^[35,45-46]. As expected women who were categorized with higher knowledge score were more liable to practice BSE which again enhances the importance of supplying knowledge.

Limitations:

This study had several limitations. The use of self-reports have intrinsic limitations. People may not understand an item, misinterpret it, or answer the way they believe they should. The selection of educated females limits the generalization of the findings and a more representative sample of Kuwaiti women might be done in the future. The knowledge scale may not be sensitive to women's advanced knowledge of breast cancer and screening. Therefore, additional work needs to be done to develop a more appropriate and reliable knowledge test. Finally, reports of doing BSE do not give information on whether the proper procedure is used.

CONCLUSION

In conclusion, it may be said from the current study that the rate of BSE performance is low, the main factors affecting BSE are occupation, friends and relatives as a source of knowledge about breast cancer or BSE, their opinions regarding best age to start examination and level of their knowledge about breast cancer.

We recommend that a health education and training program will increase the likelihood of regular BSE performance with a correct technique. Furthermore, education should provide useful suggestions that help women to start performing correct BSE despite possible difficulties. In order to achieve this, it probably would be best to start educating women on performing regular BSE in early adulthood so that this becomes their habitual behavior.

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