Awareness of breast cancer screening and risk factors among Saudi females at family medicine department in security forces hospital, Riyadh

Bushra Fahad Binhussien[1], Medhat Ghoraba[1]

[1]*Family Medicine Center, Security Forces Hospital, Riyadh, Saudi Arabia*

Abstract

Objectives: To describe the level of knowledge about breast cancer screening and breast cancer risk factors according to sociodemographic characteristics and to know the most common source of their knowledge among the females participating in this study. **Patients and Methods:** A cross-sectional descriptive study conducted through distributing validated pretested Arabic questionnaire. The sample are Saudi adult females age 18–55 years attending the Family Medicine Department at Security Forces Hospital for healthcare services or accompanying patients. **Results:** Of 384 participants, 57% were aware that lump or thickening in the breast could be a sign of breast cancer and 68% knew bleeding or discharge from nipple as a warning sign of breast cancer. Fortunately, 291 women (75.8%) have a good knowledge about breast cancer risk factors, and only 93 women (24.4%) have poor knowledge. Regarding knowledge about the screening of breast cancer, 60.9% knew breast self-examination and clinical breast examination (CBE) are the methods of early detection of breast cancer. About 53.1% of women have heard about CBE. **Conclusion:** All the participants showed sufficient knowledge about the risk factors and symptoms of breast cancer but insufficient knowledge about screening methods. These findings are encouraging for public awareness about how to screen themselves and guidance to health authorities for developing effective breast healthcare programs in the entire Kingdom for the all-female population.

Keywords: Breast cancer, early detection of cancer, screening method, risk factors, warning signs

Introduction

Global statistics found that that breast cancer is the most frequently diagnosed and a leading cause of death in women worldwide.[1,2] According to the World Health Organization, each year more than 1.4 million women worldwide are diagnosed with breast cancer as it accounts for 23% of all newly diagnosed cancer.[3]

High breast cancer mortality has been attributed to a lack of public awareness of the disease.[4] Breast cancer is detected more often in younger females and at a more advanced stage when compared with females of other life stages.[5] In the Kingdom of Saudi Arabia, breast cancer usually presents at advanced stages and more frequently in young pre-menopausal women in comparison to the Western countries.[6]

Early detection of breast cancer can be achieved through breast self-examination (BSE), clinical breast examination (CBE) and mammography.[7] Delayed breast cancer diagnosis in the developing countries is related to poor breast cancer awareness and barriers to healthcare services access.[8] Early detection is more likely to have a better prognosis and more successful treatment.[9]

The etiology of breast cancer is complicated, and multiple factors are associated with an increased risk of breast cancer

Address for correspondence: Dr. Bushra Fahad Binhussien, Family Medicine Center, Security Forces Hospital, Riyadh - 11481, Saudi Arabia. E-mail: bushrafahad@windowslive.com

How to cite this article: Binhussien BF, Ghoraba M. Awareness of breast cancer screening and risk factors among Saudi females at family medicine department in security forces hospital, Riyadh. J Family Med Prim Care 2018;7:1283-7.

development, including age, gender, ethnicity, history of breast cancer, reproductive and hormonal factors, family history, genetic factors, exposure to ionizing radiation, environmental, and lifestyle factors.[10] The most common causal beliefs identified by studies of women with breast cancer are stress, toxic environmental exposure, genetics, hormones, and poor health behaviors.[11]

There is marked geographical variation in incidence rates, being highest in the developed world and lowest in the developing countries in Asia, Middle East, and Africa.[12] In Africa, a total of 133,900 new breast cancer cases in women were estimated in 2012 representing 27.6% of all the cancer cases.[13]

The prevalence of breast cancer among Saudi females is accounted for more than 25% of all newly diagnosed cancer.[14] Many medical litterateurs in diffident regions of the Kingdom found out lack of knowledge of breast cancer risk factors, inadequate utilization of screening method, and the need for more community-based health awareness.[15] A study was conducted in Al-Ahsa in the eastern region of the Saudi. It was found that the overall level of knowledge regarding risk factors and appropriate screening was low.[16]

Earlier studies conducted in Buraidah in the Al-Qassim region in Saudi Arabia explored knowledge, attitudes, and practices surrounding breast cancer and screening in Saudi female teachers. The study reported insufficient knowledge of female teachers about breast cancer, and it is early dedication measure which has a negative influence on the practice of BSE. Moreover, the printed media was the most common source of knowledge among them.[17]

At the level of the Gulf area, a study points to insufficient knowledge of female teachers about breast cancer and identified the negative influence of low knowledge on the practice of BSE.[18]

Patients and Methods

This is a cross-sectional descriptive study conducted through distributing validated pretested Arabic questionnaire to investigate participants' knowledge about risk factors associated with breast cancer, and this is a screening method.

Saudi adult females age 18–55 years attending the Family Medicine Department in Security Forces Hospital (SFH) for routine services or accompanying patients were included in the study by a nonprobability convenience sampling. Non-Saudi females and women age less than 18 years or more than 55 years were excluded.

Statistical analysis

Numbers and percentages were used to summarize categorical/qualitative, where numeric/quantitative data were summarized by means and standard deviations for normal data and medians and interquartile ranges for non-normal data. Comparison between groups for categorical variables was done using Chi-square test. We used t-test or Mann–Whitney U-test for comparison between groups for quantitative variables for two groups and analysis of variance (ANOVA). To identify the risk factor or to estimate the adjusted association, we used logistic regression models. All statistical analyses were performed using SPSS version 25.

Ethical considerations

Ethical approval was taken from the ethical committee; before interviewing, the researchers explained the purpose to all respondents, and oral consent was obtained from all the participants. The participants had the right not to participate in the study or to withdraw from the study before completion. Confidentiality and privacy were guaranteed for all participants.

Results

Demographics

The mean age of 384 participants in our study was 31.9 ± 8.6 years. Table 1 shows the demographics of participants in percentages.

Knowledge of breast cancer warning sign

Table 2 shows the answers of the questions about their knowledge of breast cancer warning sign; the questions asked women whether they think any of the following signs mentioned below in the table are considered as a warning sign of breast cancer.

Knowledge about breast cancer risk factor

On calculating total scores about participants knowledge of risk factors for breast cancer , we considered whose total score answer more than 50% out of the total estimated score has a good knowledge. A total of 291 women (75.8%) had

Table 1: Demographics analysis among Saudi females at primary care clinic in Security Forces Hospital, Riyadh	
	Percentage
Marital status	
Divorced/widow	1.6
Married	68.7
Single	29.7
Level of education*	
Illiterate	3.1
College	50
High school	28.9
Postgraduate study	10.55
Primary school	7.45
Employment status	
Employed	29.7
Housewife	53.2
Retired	2.3
Student	14.8
Family history**	
Yes	14
No	86

*Mean 15 subject with missing data, **Mean 3 subject with missing data

Table 2: Knowledge about warning sign of breast cancer among Saudi females at primary care clinic in Security Forces Hospital, Riyadh		
	No	Percentage
Lump or thickening in breast*		
Yes	219	57
No	87	22.7
Don't know	75	19.5
Lump or thickening in the armpit		
Yes	189	49.2
No	102	24.2
Don't know	93	26.6
Bleeding or discharge from the nipple		
Yes	261	68
No	30	7.8
Don't know	93	24.2
Pulling in of nipple		
Yes	171	44.5
No	81	21.1
Don't know	132	34.4
Change in the position of the nipple		
Yes	138	35.9
No	78	20.3
Don't know	168	43.8
Rash on or around nipple*		
Yes	159	41.1
No	84	21.9
Don't know	138	35.9
Redness of breast skin		
Yes	123	32
No	135	35.2
Don't know	126	32.8
Change in the size of breast or nipple*		
Yes	165	43
No	96	25
Don't know	123	32
Change in the shape of breast or nipple		
Yes	207	53.9
No	57	14.9
Don't know	120	31.3
Pain in one of breasts or armpit		
Yes	168	43.8
No	123	32
Don't know	93	24.2
Dimpling of the breast skin		
Yes	165	43
No	75	19.6
Don't know	144	37.5

*Means 3 subjects with missing data

a good knowledge, and only 93 women (24.4%) had a poor knowledge [Figure 1].

Table 3 ANOVA test was used to assess the difference in breast cancer knowledge by demographic variables (age, marital status, level of education, employment status, and family history). A significant relationship was seen between the increase in the knowledge of breast cancer risk factors between age ($F = 4.3$, $P = 0.03$) and marital status ($F = 5.2$, $P = 0.001$).
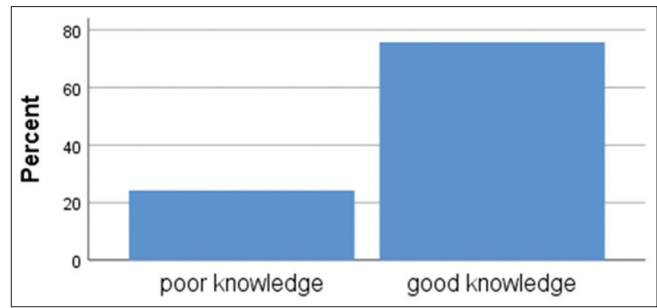

Figure 1: Total knowledge about risk factors for breast cancer

Knowledge about breast cancer screening method

We described participants' knowledge using breast cancer screening method, assuming that participants who answered correctly to the questions had a good knowledge. BSE and CBE are the methods of early detection of breast cancer answered by 60.9% of women. BSE should start at the age of 20 years and should be done monthly. Most women have heard about CBE (53.1%). However, only 26.6% know that CBE should be done yearly. About 43% of women have heard of mammography, but only a minority of them (25%) knew that 45 years is the recommended age for mammography.

While calculating total scores for participants who answered correctly to the questions estimating the degree of their knowledge about breast cancer screening method, 33 women (8.6%) had a good knowledge, and 351 women (91.4%) had an imperfect knowledge [Figure 2].

Pearson's product method correlation coefficients were used to assess the relationships between females' breast cancer knowledge regarding risk factors and screening methods and demographic variables (age, marital status, level of education, employment status, and family history) [Table 4].

A significant correlation was found between the increase in the knowledge of breast cancer risk factors between age ($r = 0.1$, $P = 0.03$) and marital status ($r = -0.2$, $P = 0.05$), and a significant correlation was also seen between an increase in the knowledge of breast cancer screening method and employment status ($r = -0.7$, $P = 0.01$)

Source of information about breast cancer

Although books, printed material, and Internet (10.9%) are common in most of the participants' answers, social media represented the highest percentage of source of information about breast cancer (20.3%). Television, radio, and Internet are the second source of information (16.4%). Physician is the third source of information about breast cancer (15.6%).

Discussion

The aim of this study is to assess the level of knowledge about breast cancer risk factor and screening among Saudi females at a primary care clinic in SFH, Riyadh. With regard to awareness
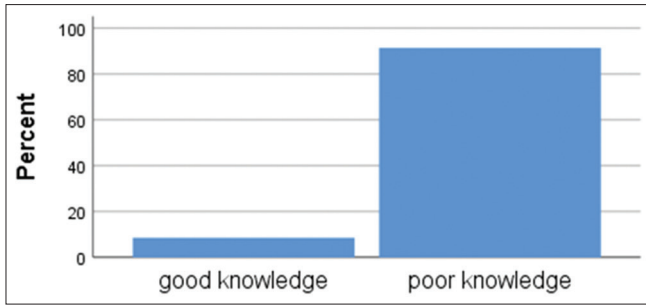
Figure 2: Total knowledge about screening method of breast cancer

of knowledge about breast cancer risk factors, most participants assured that history of breast cancer (57.7%), using hormone replacement therapy (HRT) (12.5%), and family history of breast cancer (54.7%) greatly influence their knowledge as leading causes of breast cancer. These answers were "agree and strongly agree" depending on the level of their certainty. Although the overall knowledge was good (75.8%). However, knowledge of other factors was limited to high percentages of participants' answers of "not sure" regarding being overweight, first pregnancy after 30 years, having menopause after the age of 50 years, and doing less physical activity.

This finding is in agreement with what was reported by two studies conducted in Saudi Arabia. The first one conducted in Jeddah concluded that the majority of participants (57.5%) knew about family history and having a close relative with breast cancer as established risk factors for the disease; also, 41.0% and 35.5% of participants were aware of alcohol drink and HRT as other risk factors of breast cancer, respectively.[14] The second one conducted in Riyadh reported heredity and HRT as common breast cancer risk factors as perceived by women in Riyadh.[19]

Our study revealed that BSE and CBE are the methods of early detection of breast cancer, which was answered by 60.9% of women. This result was in accordance with a study which had 824 students, with an average age of 17.0 years. There was more than 50% agreement that early detection of BC enhances the chances of recovery that BC is treatable, and that CBE and breastfeeding provide protection from BC.[16] Most women have heard about CBE (53.1%). About 43% of women heard of mammography. A study conducted in Al Madinah; the mean age of the studied 465 women was 34.9 ± 12.2 years. Of these women, 27.7% and 38.5% received mammography and performed BSE, respectively. A high level of poor knowledge about breast cancer was detected in the overall studied women and those who never received mammography, particularly knowledge related to the risk factors of breast cancer.[20] Awareness of information regarding BSE was 81.6% in general. Many were aware of the opinion that proper and assisted knowledge about BSE can help in early detection of breast cancer. The patients were also aware that BSE is the most widely used method of screening for breast cancer in clinics and hospitals.[21]

Table 3: Differences in knowledge about breast cancer risk factor by demographics among Saudi females at primary care clinic in Security Forces Hospital, Riyadh

	Mean squares	ANOVA	
		F	*P*
Age			
Between groups	317.3	4.3	0.03
Within groups	66.7		
Marital status			
Between groups	0.7	5.2	0.001
Within groups	0.13		
Level of education			
Between groups	1.3	1.8	0.1
Within groups	0.7		
Employment status			
Between groups	0.8	1.2	0.2
Within groups	0.6		
Family history			
Between groups	0.0	0.0	0.9
Within groups	0.1		

ANOVA: Analysis of variance

Table 4: Relationships among breast cancer awareness and demographic variables among Saudi females at primary care clinic in Security Forces Hospital, Riyadh

	r	*P*
Knowledge of breast cancer risk factor		
Age	0.1	**0.03**
Marital status	−0.2	**0.05**
Level of education	0.07	0.1
Employment status	0.05	0.2
Family history	−0.001	0.9
Knowledge of breast cancer screening method		
Age	0.17	0.7
Marital status	0.06	0.2
Level of education	0.08	0.9
Employment status	−0.7	**0.01**
Family history	−0.04	0.3

A systematic review conducted in Iran assured that the number of people with sufficient knowledge about BSE in various studies was between 5% and 79.8%.[20] Our study result on knowledge about screening method falls between the range (8.6%) which is considered as a poor knowledge.

Social media represented the highest percentage of source of information about breast cancer (20.3%). A study conducted by Kratzke concluded that television, radio, and Internet are the second source of information (16.4%). The most common information sources were Internet (75%), magazines (69%), provider (76%), and friends (61%). The least common sources were radio (44%), newspapers (34%), and mothers (36%).[22]

Physician is the third source of information about breast cancer (15.6%). In other studies, the most important source of information was the healthcare team.[23]

Conclusion

Findings indicate that knowledge of breast cancer warning sign and screening method were very limited although knowledge of breast cancer risk factors is slightly adequate which is significantly different by age and marital status. The results of poor knowledge about cancer breast observed in this study reflect the need for greater efforts to increase breast awareness education.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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