International Journal of Medical and Health Research
ISSN: 2454-9142
www.medicalsciencejournal.com
Volume 4; Issue 2; February 2018; Page No. 82-87

Assessment of the level of knowledge about breast cancer and related symptoms, screening and treatment among Saudi Female

[1] Dr. Eyad Alsaeed, [2] Raghad Almusfir, [3] Salma jaberty, [4] Maram AlQahtani, [5] Mona Almofarej, [6] Haifa Aldabjan

[1] Assistant Professor and Consultant, Department of Radiation Oncology, College of Medicine, King Saud University, King Khalid University Hospital Riyadh, Saudi Arabia

[2, 3,4,5,6] Department of Medicine, College of Medicine, King Saud University, King Khalid University Hospital Riyadh, Saudi Arabia

Abstract
Breast cancer is the most common cancer for a female in Saudi according to National Campaign for Breast Cancer Awareness the majority of patients in our country present at an early age and late stage. As the only way to prevent the progression of breast cancer is the early detection of breast cancer we conducted study to assess the knowledge about breast cancer and breast self-examination and knowledge about breast cancer treatment and its side effect among female lived in Riyadh we analyzed the knowledge about breast cancer and breast self-examination with the demographic variable.also we compared between the knowledge of the breast cancer treatment and its side effect for the women diagnosed or had family history of breast cancer with those who had not. Method: It is cross-sectional study targeted Saudi female who lived in Riyadh and their age range from (18-60) years old in order to assess the knowledge about breast cancer and breast self-examination and knowledge about breast cancer treatment and its side effect by the distribution of self-administered questionnaire.Results: out of 500 participants, there is 395 were 18-40 years old, 57.9%(278) had a university degree and 42.7% of participants had monthly income from 5000-10000 SR. 17.9%(86) had a family history of breast cancer while only 5.6%(27) diagnosed with breast cancer. Regarding the knowledge about breast cancer symptoms, 84.8 %(407) of our participant recognize that breast lump is one of breast cancer symptoms. For the knowledge of breast self-examination (BSE), 57.3% (275) knew how to perform BSE, while 41.7%(200) performed it monthly. The knowledge of breast cancer symptoms and BSE was significantly associated with the level of education and monthly income of participant while the practice of BSE was only related with the level of education. Regarding the knowledge about side effects of different methods used in breast cancer treatment between groups who have been diagnosed with breast cancer or had a family history with it and another group who hadn't. About mastectomy, both groups agreed that change in body image is the most undesirable side effect by (62.7% and 55.6 %) respectively While in chemotherapy, hair loss was the most undesirable side effect in both groups (52.9 % and 47.9 %). Moreover, 42.2% and 36.8% believed that skin ulcers were the most unwanted side effect of radiation therapy. It was also observed that 63.7% and 69.3% of respondents from both groups agreed that cervical cancer was the most undesirable side effect of hormonal. Conclusion This study demonstrates a high level of knowledge about breast cancer symptoms and BSE among Saudis women lived in Riyadh, particularly in women with high education levels and high income. On the other hand, there is a need to encourage women to practice BSE and increase knowledge about the benefit of early detection of breast cancer.

Keywords: breast cancer, awareness, breast self-examination, Riyadh, Saudi Arabia

1. Introduction
Breast cancer is the one of the most common cancer for females worldwide. According to GLOBOCAN estimates, the incidence of breast cancer in 2012 was approximately 1.7 million worldwide [1]. While the Breast cancer-specific death, which reported by WHO was over 508,000 women worldwide in 2011 [2]. In Saudi Arabia, there were 1473 female diagnosed with Breast cancer in 2010 [3]. IN the United States, most of the cases discovered at old age and early stage while in Saudi Arabia the opposite is occurring [4]. There is Saudi study, which had been designed to assess future cancer burden and the impact on health resources in the kingdom of Saudi Arabia predicted that the incidence of breast cancer in 2025 and 2050 will increase by 350% and 1600% respectively comparing with 2002 [5]. While the mortality rate of Breast cancer in 2025 and 2050 will increase by 160% and 450% respectively [5]. Another Saudi study, which aimed to review breast biopsies, reported that the malignant cases accounted by 34.2% of 1035 breast biopsies [6]. All these factors with poor awareness about the symptoms of breast cancer and screening by Breast Self-Examination and mammogram indicate that we will face major health issue in the coming decades comparing with current situation to cope the burden of breast cancer in the future we should appreciate the effect of education about early detection and screening as secondary prevention of breast cancer therefore in our study we will assess the Breast cancer knowledge among out-patients and their female relatives in King Khalid University Hospital and female students at King Saud University by administration of a questionnaire to ask about socio-demographic data, symptoms, screening and

treatment of Breast cancer in order to know the site of deficit in their knowledge.

2. Materials and Methods

2.1 Study Design

Quantitative observational analytic study (cross sectional study). The study is designed to quantify the level of knowledge regarding breast cancer symptoms, screening and treatment among Saudi females in King Khalid University Hospital and King Saud University.

2.2 Study Setting

A study was conducted among Saudi female patients and their female relatives in primary care clinic at King Khalid University Hospital and female students at King Saud University

2.3 Sampling Method

The participants were selected by the simple random technique by choosing two different days in different times per week from December to February 2014-2015.

Inclusion Criteria

Saudi females, age range from (18-60) years, Riyadh city residents and various educational levels.

Exclusion criteria

Non-Saudis, male participants, non-Riyadh city residents

2.4 Sample size

The proportion was assumed according to general knowledge which reported by a study conducted in Hail city [7]

$N = Z\alpha^2 P (1-P) / d^2$

$= 1{,}962 \times 0, 61 \times 0.39 / 0.052$

$= 365.5$

$N = 366$

Sample size = 366

Which we consider it as our minimum so, we collected 500 Questionnaire.

2.5 Data collection methods

The self-administered questionnaire was developed to match our objectives. The questionnaire comprises of 28 questions in the form of close-ended and open-ended questions included in five domains. The first domain designed to ask about socio-demographic data such as (age, nationality, phone number, education level, monthly income and residency). The second section developed to evaluate the general awareness about breast cancer. The third section designed to assess the knowledge about symptoms of breast cancer. The fourth part developed to find out women's knowledge of breast cancer screening and whether they examine themselves by BSE. The fifth domain designed to assess the knowledge about prognosis of breast cancer, different treatment methods and their side effects.

The questionnaire was prepared in Arabic and English language and was administrated to Outpatients Saudi women and their female relatives in King Khalid University Hospital and King Saud University female students.

2.6 Pilot Study

Pilot study was performed to test the reliability, validity and the understanding of our questionnaire. The survey was distributed to 10 participants among Saudi women (20-50 years). We found out that our questionnaire is valid, reliable and the participants were able to understand our survey. The time spent to fill the survey was 7 minutes.

2.7 Data management and Analysis:

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 21software.Descriptive statistics (frequency and percentages) were measured. We used Chi-square test and Fisher's exact test to compare between Nominal variables with demographic characteristics. We assumed there was a statistically significant difference when P-value less than 0.05.

2.8 Ethical Consideration

Family and community ethics review committee approval.

All participants have received consent form which was clear and understandable to participants.

Confidentiality was considered by keeping participants' data secured and private.

Participants have the right to withdraw at anytime.

No reward was given to participants.

3. Results

The study sample consist of 500 female participants, which four hundred and Eighty (98%) were Saudis. The majority of participants were between age18-40 395(82.2%). 57.9% (278) had university degree followed by secondary school degree 21 %(102). 42.7% of our participants had monthly income from 5000-10000 SR. Out of the whole participants only 17.9% (86) had a family history of breast cancer while only 5.6% (27) diagnosed with breast cancer details are shown in Table1.

Table II shows that most of our sample, 81% (389) believed that breast cancer is a common disease in Saudi Arabia. Half of the participants, 50% (240) thought that the breast cancer disease is inherited. Regarding the knowledge about breast cancer symptoms, the most known symptom among the participants was breast lump 84.8 % (407). Followed by nipple discharge or bloody discharge and armpit lump. (76.3% and 74%, respectively). Also, it was observed that 71% (341) were aware that nipple change is a symptom of breast cancer. 70.4% (338) and 69.4% (333) respectively were able to recognize that breast skin change and breast or armpit pain as symptoms of breast cancer. Regarding the knowledge about breast self examination (BSE), 57.3% (275) mentioned that they knew how to perform BSE, while 41.7% (200) performed it monthly. It also found that 57.5% (276) of respondents had the ability to notice any changes in their breast. Only 19.4% (93) visited a doctor for changes in their breast. The majority of participants 93.8% (450) believed that early diagnosis of breast cancer would lead to a good prognosis. Table III presents the correlation between the breast cancer symptoms and the breast- self examination with the demographic variables. We found that the relation between the age and the family history of the breast cancer of the participants and the breast cancer symptoms was significantly negative due to their P-values respectively (p=0.434) (p=0.652), but there was a

high significance regarding the level of education and the monthly income of the respondents. As shown in table III the participants with a bachelor degree were the most aware group of the breast cancer symptoms (p=0.013). On the other hand, the knowledge of the breast cancer symptoms differs according to the monthly income, whereas the participants with 5000-10000SR monthly income had a high knowledge of the breast cancer symptoms comparing with others (p=0.007). The analysis showed that there was a high significant association between the level of education of the participants and the knowledge and practice of BSE due to their p-values respectively (P=0.000) (p=0.030).We found out that women with a bachelor degree had a high knowledge and practice of BSE. The knowledge of BSE related to the monthly income of the respondents was statistically significant (p=0.004), while the practice of BSE wasn't positively associated with the monthly income of the respondents (p=0.112). Women with 5000-10000SR monthly income had a greater knowledge and practice of BSE. The knowledge and the practice of BSE according to the age and the family history of the breast cancer of the participants was significantly negative.Figure 1 showed participants opinion about breast cancer treatment. Table IV shows the knowledge about side effects of different methods used in breast cancer treatment between groups who have been diagnosed with breast cancer or had a family history with it and another group who hadn't. About mastectomy, both groups agreed that a change in body image is the most undesirable side effect by (62.7% and 55.6 %) respectively. While in chemotherapy, hair loss was the most undesirable side effect in both groups (52.9 % and 47.9 %). Moreover, 42.2% and 36.8% believed that skin ulcers were the most unwanted side effect of radiation therapy. It was also observed that 63.7% and 69.3% of respondents from both groups agreed that cervical cancer was the most undesirable side effect of hormonal.

4. Discussion

Awareness levels of breast cancer among women worldwide are well documented in the literature. Therefore, we aimed in this study to measure the awareness and knowledge levels of Saudi women living in Riyadh on breast cancer symptoms , BSE and treatment. The most of our participants were knowledgeable about breast cancer symptoms. The "breast lump" was the most frequently identified symptom of breast cancer. These results were in line with other studies, such as Al Madina Al Munawara, Saudi Arabia study, which reported that "swelling in the breast or axilla" as the most common symptom according to their participants [8] also, another study in Eastern China has a similar result [9]. Theses similarity may be related to the wide spread of the concept that most of cancers present as a lump.

The present study showed that 57.3% of the participants have Knowledge about how to perform the BSE while 41.7% Perform It monthly. On the other hand, Abha study showed that few participants knew about BSE, and very few women performed BSE [10], whereas the Nigerian study found that almost half of the participants had knowledge about how to perform BSE and less than quarter already perform it [11] Regular BSE has been suggested as a part of the overall breast health promotion concept and women should know the way of performance BSE and the benefits of it.Teaching BSE can help women to learn about the structure and composition of their normal breasts, thereby enhancing their sensitivity to abnormalities.

The Most of our participants (93.8 %) believed that early diagnosis of breast cancer will lead to better results in the treatment and improve the survival rate. While just 19.4 % of participants will visit the doctor when they notice any change in breast. This demonstrates that there are serious barriers to seek a medical help due to their fear of finding any abnormality, while in Nigeria study, they report that the most of their participants visit the doctors if they were concerned or worried [11].

Regarding the relationship between the knowledge of breast cancer symptoms and the demographic variables, the level of education and the monthly income of the participants were significantly correlated to their knowledge about breast cancer symptoms. Moreover, we came to light that women with a bachelor degree had a greater knowledge of breast cancer warning signs than others, it could be due to the effect of breast cancer awareness campaigns which usually established in universities. Also, participants with (5000-10000SR) monthly income had a superior knowledge about breast cancer symptoms comparing with others (P=0.007). Similar results were found in Jeddah , Saudi Arabia by Radi , (2013) , which reported that a female with a college level of education had significantly greater knowledge about breast cancer warning signs than the women of other levels of education [12].

On the other hand, we found in our study a negative association between breast cancer symptoms and the participants' age and their family history of breast cancer, it may refer to a few participants with family history in our study.Unlike what Liu *et al*.(2014) reported in their study that the Chinese women 25-35 group of age who tend to be better educated had a better awareness and understanding of breast cancer [9].

In the current study, the results of correlation knowledge and practice of BSE with a demographic characteristic show that women with bachelor degree had a great knowledge and practice of BSE it may contribute to their perception of the possibility of preventing the sequences of breast cancer. Similar finding was reported by Alam etal (2006) regard the level of education, but they found that women with a family history of breast cancer had great knowledge and practice of BSE which was not found in our study it may attribute to a small number of participants with a family history in our study. Also, we observed that the age of participants was not affected factor in their knowledge and practice of BSE which explained by the easy accessibility of knowledge through media and its impact in all age groups. In contrast to that Buriadah study result indicate that the knowledge and practice of BSE of their participant were significantly high in those age 40 years old and above [13]. Regarding association between the monthly income of participants and their knowledge and practice of BSE, the findings indicate that respondents with middle income were the most aware group of BSE, while the practice of BSE was not statistically significant with their monthly income. This study provided important data about the knowledge of breast cancer treatment side effect between two groups. The first group is those who had been diagnosed with

breast cancer or had a family history of breast cancer and the other group includes those who had neither of them and we found that there was no difference in their choices regarding the most undesirable side effect of breast cancer treatment options. Change of body image was the most undesirable side effect of mastectomy while hair loss was the most unwanted side effect regarding chemotherapy and that could be due to the fact that women worry about their beauty. The most unfavorable side effect of radiation therapy was skin ulcer, may be because it's painful and associated with a lot of infections. Cervical cancer was the most undesirable side effect of hormonal therapy maybe due to the fact that the treatment of one cancer can get you another cancer.

5. Conclusions

In conclusion, we found that the knowledge level of breast cancer has been increased compared to previous studies among Saudis women. This improvement may be because of the success of Breast cancer Awareness Campaigns. Also, we recognized that women with high education levels and high income had a high level of knowledge about breast cancer symptoms and BSE. In contrast with women who had a family history of breast cancer. Finally, there is a need to encourage women to practice BSE and increase knowledge about benefit of early detection of breast cancer.

6. Limitation

Most of the participants were having a high educational level so it can not be generalized to the whole population.

7. Recommendations

Do more research to find out the barriers towards BSE practice. Developing workshops targeting women, especially women with low education and low income, such as doing it in the primary clinic in Riyadh's neighborhoods all over especially poor neighborhoods Do workshops about breast cancer in all schools and invite the mothers to attend.

Routine checkups should be encouraged for people who had a family history. There is need for mandatory breast cancer screening program for women over 40 years old.

Characteristics		Count (%)
Nationality	Saudis	480(96)
	Non-Saudis	20(4)
Age	18-25	172(35.8)
	26-30	113(23.5)
	31-40	110(22.9)
	41-50	46(9.6)
	Above 50	39(8.1)
Educational level	Illiterate	9(1.9)
	Primary	23(4.8)
	Intermediate	32(6.7)
	Secondary	102(21.3)
	University	278(57.9)
	Post-graduate	36(7.5)
Monthly income	Less than 5000 SR	82(17.1)
	From 5000 to 10000	205(42.7)
	From 10000 to 20000	107(22.3)
	More than 20000	85(17.7)
Family history	Yes	86(17.9)
	No	394(82.1)
Personal history	Yes	27(5.6)
	No	453(94.4)

Table 1: Demographic characteristics

Table 2: breast self-examination (BSE) (N= 480)

QUESTIONS	COUNTS%
Breast cancer is a common disease in Saudi Arabia	389 (81%)
Breast cancer is a genetic disease	240 (50%)
Knowledge about breast cancer symptoms	
Breast lump	407(84.8%)
Nipple discharge or bloody discharge	366 (76.3%)
Armpit lump	355 (74.0%)
Change in nipple	341 (71.0%)
Breast skin change	338 (70.4%)
Feeling pain in breast or armpit	333 (69.4%)
Knowledge about BSE	
Knowledge about performance of BSE	275 (57.3%)
Performance of BSE monthly	200 (41.7%)
Ability to notice any change in the breast	276 (57.5%)
Previous visit to doctor because of change in the breast	93 (19.4%)
Early diagnosis of breast cancer leads to better result in the treatment	450 (93.8%)

Table 3: The correlation between the breast cancer symptoms and the breast- self examination (BSE) with the demographic variables

Demographic variables	Knowledge of symptoms		Total	p-pvalue	Knowledge of BSE		P-value	Practice of BSE		p-value
	Poor	Good			Yes	Total		Yes	Total	
level of education: Illiterate (N) (%)	1 0.8%	8 2.3%	9 1.9%	0.013	2 0.7%	9 1.9%	0.000	1 0.5%	9 1.9%	0.030
Primary	9 7.1%	14 4.0%	23 4.8%		7 2.5%	23 4.8%		7 3.5%	23 4.8%	
Intermediate	14 11.1%	18 5.1%	32 6.7%		9 3.3%	32 6.7%		8 4.0%	32 6.7%	
Secondary school	32 25.4%	70 19.9%	102 21.3%		47 17.1%	102 21.3%		38 19.0%	102 21.3%	
University	66 52.4%	210 59.7%	276 57.7%		184 66.9%	278 57.9%		128 64.0%	278 57.9%	
Graduate	4 3.2%	32 9.1%	36 7.5%		26 9.5%	36 7.5%		18 9.0%	36 7.5%	
Monthly income: Less than 5000	27	55	82	0.007	36	82	0.004	25	82	0.112

(N) (%)	21.4%	15.7%	17.2%		13.1%	17.1%		12.5%	17.1%	
5000-10000	63 50.0%	141 40.2%	204 42.8%		113 41.1%	205 42.8%		87 43.5%	205 42.8%	
10000-20000	25 19.8%	81 23.1%	106 22.2%		66 24.0%	107 22.3%		47 23.5%	107 22.3%	
More than 20000	11 8.7%	74 21.1%	85 17.8%		60 21.8%	85 17.7%		41 20.5%	85 17.7%	
Age: 18-25 (N) (%)	37 29.4%	135 38.4%	172 36.0%		106 38.5%	172 35.8%		69 34.5%	172 35.8%	
26-30	31 24.6%	81 23.0%	112 23.4%		64 23.3%	113 23.5%		49 24.5%	113 23.5%	
31-40	31 24.6%	78 22.2%	109 22.8%	0.434	67 24.4%	110 22.9%	0.112	49 24.5%	110 22.9%	0.635
41-50	14 11.1%	32 9.1%	46 9.6%		20 7.3%	46 9.6%		15 7.5%	46 9.6%	
More than 50	13 10.3%	26 7.4%	39 8.2%		18 6.5%	39 8.1%		18 9.0%	39 8.1%	
Family History: No (N) (%)	105 83.3%	287 81.5%	392 82.0%		231 84.0%	394 82.1%		165 82.5%	394 82.1%	
Yes	21 16.7%	65 18.5%	86 18.0%	0.652	44 16.0%	86 17.9%	0.205	35 17.5%	86 17.9%	0.841

Table 4: comparing between participant opinion about the undesirable side effects of the treatment methods (n = 480)

Variable	Family history or diagnostic	No family history or non-diagnostic	p-value
Mastectomy	64 (62.7 %)	210 (55.6 %)	0.193
Change of body image	11 (10.8 %)	33 (8.7 %)	0.523
Post-surgical pain	6 (5.9 %)	56 (14.8 %)	0.017
Hematoma	11 (10.8 %)	34 (9 %)	0.582
Wound infections All of the above	10 (9.8 %)	45 (11.9 %)	0.554
Chemotherapy	14 (13.7 %)	60 (15.9 %)	0.594
Exposure to infection	4 (52.9 %)	181 (47.9 %)	0.365
Hair Loss	5 (4.9 %)	23 (6.1 %)	0.651
Nausea	7 (6.9 %)	48 (12.7 %)	0.101
Fatigue All of the above	22 (21.6 %)	66 (17.5 %)	0.341
Radiation therapy	43 (42.2 %)	139 (36.8 %)	0.320
Skin ulcers	15 (14.7 %)	64 (16.9 %)	0.591
Fatigue	7 (6.9 %)	65 (17.2 %)	0.009
Breast swelling	24 (23.5 %)	80 (21.2 %)	0.607
Breast pain All of the above	13 (12.7 %)	30 (7.9 %)	0.131
Hormonal therapy	65 (63.7 %)	262 (69.3 %)	0.283
Cervical cancer	21 (20.6 %)	64 (16.9 %)	0.391
Blood clot	12 (11.8 %)	36 (9.5 %)	0.503
Fatty liver All of the above	3 (2.9 %)	13 (3.4 %)	0.547

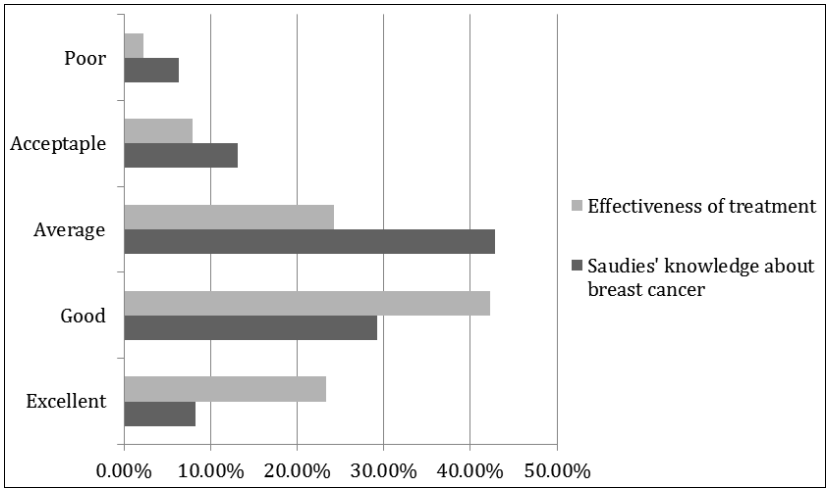

Fig 1: Participants opinion about breast cancer treatment

8. References

1. http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx
2. http://www.who.int/cancer/detection/breastcancer/en/index1.html
3. http://www.scr.org.sa/?module=reports&page=list&year=2010.
4. http://www.moh.gov.sa/en/HealthAwareness/Campaigns/Breastcancer/Pages/stat.aspx
5. Ibrahim E, Zeeneldin A, Sadiq B, Ezzat A. The present and the future of breast cancer burden in the Kingdom of Saudi Arabia. Med Oncol. 2008; 25(4):387-393.
6. Al-Rikabi A, Husain S. Increasing prevalence of breast cancer among Saudi patients attending a tertiary referral hospital: a retrospective epidemiologic study. Croat Med J. 2012; 53(3):239–43.
7. Hussein DM, Alorf SH, Al-Sogaih YS, Alorf SH, Alaskar RS, Al-Mahana AM, *et al*. Breast cancer awareness and breast self-examination in Northern Saudi Arabia. A preliminary survey. Saudi Med J. 2013; 34(7):681-8.
8. Habib F, Salman S, Safwat M, Shalaby S. Awareness and Knowledge of Breast Cancer Among University Students in Al Madina Al Munawara Region. Middle East J Cancer. 2010; 1(4):159-66.
9. Liu L-Y, Wang F, Yu L-X, Ma Z-B, Zhang Q, Gao D-Z, *et al*. Breast cancer awareness among women in Eastern China: a cross-sectional study. BMC Public Health. 2014;14:1004
10. Mahfouz AA, Hassanein MHA, Nahar S, Farheen A, Gaballah II, Mohamed A, *et al*. Breast cancer knowledge and related behaviors among women in Abha City, southwestern Saudi Arabia. J Cancer Educ off J Am Assoc Cancer Educ. 2013; 28(3):516–20.
11. Odusanya O, Fmcph. Breast Cancer: Knowledge, Attitudes, and Practices of Female Schoolteachers in Lagos, Nigeria. The Breast Journal. 2001; 7(3):171-175.
12. Radi SM. Breast Cancer awareness among Saudi females in Jeddah. Asian Pac J Cancer Prev APJCP. 2013; 14(7):4307-12.
13. Dandash KF, Al-Mohaimeed A. Knowledge, Attitudes, and Practices Surrounding Breast Cancer and Screening in Female Teachers of Buraidah, Saudi Arabia. Int J Health Sci. 2007;1(1):61–71