Assessment of the Level of Knowledge about Breast Cancer andRelated Symptoms, Screening and Treatment among Saudi Female

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Abstract—

Objectives:Breast cancer is the most common cancer for a female in Saudi according tocountry present at an early age and late stage.AS the only way to prevent thediagnosed or had family history of breast cancer with those who had notexamination with the demographic variable .also we compared between theknowledge of the breast cancer treatment and its side effect for the womenlived in Riyadh we analyzed the knowledge about breast cancer and breast self-National Campaign for Breast Cancer Awareness the majority of patients in ourprogression of breast cancer is the early detection of breast cancer we conductedstudy to assess the knowledge about breast cancer and breast self-examination

Methods:It is cross-sectional study targeted Saudi female who lived in Riyadh and theirage range from (18-60) years old in order to assess the knowledge about breastcancer and breast self-examination and knowledge about breast cancer treatmentand 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 auniversity 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 %) respectivelyWhile 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.

Index Terms—Breast cancer , Awareness , breast self-examination , Riyadh , Saudi Arabia

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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 affect 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 King Abdul-Aziz hospital 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 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 student 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 toOutpatients 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

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2.7 Data management and Analysis:

Statistical analysis was performed using the Statistical Package for the SocialSciences (SPSS) version 21software.Descriptive statistics (frequency andpercentages) were measured. We used

Chi-square test and Fisher's exact test tocompare between Nominal variables with demographic characteristics. Weassumed 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

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 I. Demographic characteristics

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 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 par-

ticipants 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 fers 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).

Figure 1 showed percipients 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.

	Saudies' kn	Effectiveness of treatment
Excellent	8.30%	23.30%
Good	29.20%	42.30%
Average	42.90%	24.20%
Acceptaple	13.10%	7.90%
Poor	6.30%	2.30%

To resize chart data range, drag lower right cor

Table II Participants knowledge about breast cancer and its symptoms and breast self-examination (BSE) (N= 480)

Questions	Count (%)
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 results in the treatment	450 (93.8%)

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

Demographic variables	Knowledge of symptoms		total	p-value	Knowledge of BSE		P-value	Practice of BSE		-value
	poor	good			YES	TOTAL		YES	TOTAL	
level of education: Illite-rate (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 (N) (%)	27 21.4%	55 15.7%	82 17.2%	0.007	36 13.1%	82 17.1%	0.004	25 12.5%	82 17.1%	0.112
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%	0.434	106 38.5%	172 35.8%	0.112	69 34.5%	172 35.8%	0.635
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%		67 24.4%	110 22.9%		49 24.5%	110 22.9%	
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%	0.652	231 84.0%	394 82.1%	0.205	165 82.5%	394 82.1%	0.841
yes	21 16.7%	65 18.5%	86 18.0%		44 16.0%	86 17.9%		35 17.5%	86 17.9%	

Table IV: 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			
Change of body image	64 (62.7 %)	210 (55.6 %)	0.193
Post-surgical pain	11 (10.8 %)	33 (8.7 %)	0.523
Hematoma	6 (5.9 %)	56 (14.8 %)	0.017
Wound infections	11 (10.8 %)	34 (9 %)	0.582
All of the above	10 (9.8 %)	45 (11.9 %)	0.554
Chemotherapy			
Exposure to infection	14 (13.7 %)	60 (15.9 %)	0.594
Hair Loss	54 (52.9 %)	181 (47.9 %)	0.365
Nausea	5 (4.9 %)	23 (6.1 %)	0.651
Fatigue	7 (6.9 %)	48 (12.7 %)	0.101
All of the above	22 (21.6 %)	66 (17.5 %)	0.341
Radiation therapy			
Skin ulcers	43 (42.2 %)	139 (36.8 %)	0.320
Fatigue	15 (14.7 %)	64 (16.9 %)	0.591
Breast swelling	7 (6.9 %)	65 (17.2 %)	0.009
Breast pain	24 (23.5 %)	80 (21.2 %)	0.607
All of the above	13 (12.7 %)	30 (7.9 %)	0.131
Hormonal therapy			
Cervical cancer	65 (63.7 %)	262 (69.3 %)	0.283
Blood clot	21 (20.6 %)	64 (16.9 %)	0.391
Fatty liver	12 (11.8 %)	36 (9.5 %)	0.503
All of the above	3 (2.9 %)	13 (3.4 %)	0.547

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 Madi

na Al Munawara, Saudi Arabia study, which reported that "swelling in the breast or axilla" as the most commonas 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 studyshowed

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 abouthow 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 ofbreast cancer will lead to better results in the treatment and improvethe 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 collegelevel 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 hor-

monal therapy maybe due to the fact that the treatment of one cancer can get you another cancer.

CONCLUSION / RECOMMENDATIONS:

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.

LIMITATION:

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

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.

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