

Breast Cancer Awareness among Saudi Females in Taif, Saudi Arabia

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Abstract: ***Objectives:** This study aimed to assess the levels of breast cancer awareness among Saudi females, and to compare between house wives and employees women regarding knowledge and practical of breast cancer. **Methods:** This cross sectional study was conducted among 300 women in Taif city. Data were collected using a self administrated questionnaire which included questions on socio-demographic data, knowledge of risk factors of breast cancer, breast self examination, clinical breast examination and awareness of mammogram. **Results:** Age of respondents was 16 to 45years, employee (51%), educated (90%) and married (71%). The majority had good knowledge about risk factors of breast cancer and breast self examination (93.3%, 87% respectively) and indicated TV, magazines and breast cancer campaigns as their source of information (33.7%, 29% respectively). No significant difference between employees, house wives and students, regarding breast cancer knowledge ($p \geq 0.05$). 73.3% of women were unaware of clinical breast exam and 80.3% of mammogram. **Conclusion:** Most women were aware of risk factors of breast cancer. However, the knowledge about clinical breast examination and awareness of mammogram were inadequate. It is recommended that the level of knowledge should be raised among women, especially breast cancer screen procedure CBE, and mammogram.*

Keywords: awareness - breast cancer (BC) - breast self examination (BSE) - clinical breast examination (CBE) – mammography

1. Introduction

Breast cancer is the most common malignancy of women worldwide. It is the leading cause of female cancer related disability and mortality^[1]. The global incidence of breast cancer is increasing. According to the World Health Organization (WHO) each year over 1.4 million women worldwide are diagnosed with breast cancer as it accounts for 23% of all newly diagnosed cancer^[2].

The current estimates in the United States indicate that 226, 870 women are diagnosed with breast cancer, with 39, 510 deaths of the disease in the year 2012^[3].

In Saudi Arabia, the percentage of death from breast cancer is 19.8 % in age of 45 years according to Mohammed D^[4]. Breast cancer usually develops after the age of 45 years^[5, 6, 7]. Risk factors for breast cancer are well documented for European and American populations, with age over 65 years being the prominent factor after being an adult female^[8, 9, 10].

Breast cancer is influenced by multiple risk factors, which can be classified into 4 groups: first, family history/genetic background, which accounts for approximately 15% of all breast cancer cases^[11]. The second and the most well-known risk factor for breast cancer, can be linked to the hazardous effects of hormonal exposures such as early age at menarche, late age at menopause, Eshre^[12] reported that fewer number of children and null parity, late age at first birth. Other factors include lack of exercise, poor diet, alcohol consumption, pollution, and use of contraceptives^[13].

In Saudi Arabia, previous studies conducted in different regions such as Buraidah, Riyadh, and Al Khobar, have

explored female knowledge and attitude towards, breast cancer^[14, 15, 16], discovered lack of knowledge about the common risk factors for breast cancer; and lack of understanding of the importance of breast self-examination, under-utilized mammography screening. In Saudi Arabia, studies reported unsatisfactory knowledge about breast cancer and its early detection measures which have a negative influence on the practice of BSE among female Saudi teachers of Buraidah^[16]. Habib et al^[17] assessed the knowledge and awareness about various aspects of breast cancer among female university students, Al Madina Al Munawara Region, study discovered that respondents showed deficient knowledge about key issues. Concerning breast cancer and its early detection measures. In other regions of Saudi Arabia; Al-Qassim it has been reported that the level of awareness of the females regarding breast cancer and BSE is not adequate and a health education program about breast cancer should be introduced in the region^[18]. Recent study about breast cancer awareness among Saudi females in Jeddah, Radi M.S^[19], reported that, participants had poor knowledge about warning signs, risk factors of breast cancer and inadequate knowledge about breast cancer screening program and BSE. Other recent study about awareness, knowledge and practice of breast self examination among groups of female nursing students, Riyadh, kingdom of Saudi Arabia, this study revealed to, the majority of the study sample had aware about important of BSE which helped early detection of breast cancer and had aware about different methods of screening for breast cancer^[20].

Breast cancer awareness includes knowledge of breast cancer risk factors, signs and symptom and screening methods. The three screening methods recommended for

early detection of breast cancer include breast-self examination (BSE), clinical breast examination (CBE) and mammography^[21]. It is important to adequately motivate women to regularly carry out BSE so as to curtail the increasing mortality rate from breast cancer^[22, 23].

The practice of BSE can help women to know the structure and composition of their normal breast thereby enhancing their sensitivity to detect any abnormality at the earliest time. BSE once a month contributes to a woman's heightened awareness of what is normal for her^[24]. In March 1997, the American Cancer Society (ACS) updated its recommended mammography screening interval for women ages 40-49 years from once every 1 to 2 years to once every year. At the same time, the National Cancer Institute (NCI), which had previously not recommended routine screening of women in their 40s, began recommending screening at 1 to 2-year intervals^[25].

There are differences in the performance and effectiveness of mammography in different age groups of women aged 40 and older, but these differences are not so great to question the value of screening in any one group. While some questions remain unresolved, the efficacy of mammography in women ages 40 to 49 should no longer be considered controversial^[26]. Few studies were conducted to address breast cancer awareness among Saudi females in Taif. Therefore the objective of this study was to investigate the level of breast cancer awareness among Saudi females living in Taif. Purposes of the study were: i) To assess the levels of breast cancer awareness among Saudi females. and ii) To compare between house wives and employees women regarding knowledge and practical of breast cancer .

2. Materials and Methods

Research design: A descriptive cross-sectional study was used during the period from Sep 2014 to Nov 2014.

- a) **Settings:** the study was conducted in different areas in Taif-city (Health College, Taif University, female secondary schools, residential areas, and shopping Mall (Kalb El Taif Mall)).
- b) **Subjects:** A sample comprised of 300 Saudi females ages 16 years and older living in Taif city was used. Inclusion criteria: i) Adults Saudi females, ages 20 and older. ii) Living in Taif city. Exclusion criteria: Females who are not willing to participate in the study. Sampling technique: Probability convenient sample
- c) **Tool of data collection:** A structured questionnaire was designed for data collection by the researchers based up on review of literature. It includes three parts, **first part**, the socio-demographic data, such as: age; residency, occupation, age at menarche, marital status; age of bearing the first baby and late age of married increases the probability of breast cancer.
- d) **Second parts:** knowledge of breast cancer risk factors included 12 questions that used a 3-point Likert scale. Scores assigned to each item are between 1 and 3 points as follows; (yes, no, and I do not know). According to rang of total scores lie between 12-36, considering good awareness as $\leq 50\%$ of the range of total score, women were classified as: good awareness if their total score

was 12-24, and were classified as poor awareness if their total score was 25-36.

- e) **Third part:** knowledge about BSE, CBE and mammogram, included ten questions: have you heard of BSE, Heard from, who should perform BSE, at which age should BSE begin, how often should perform BSE, how is BSE done, do you have clinical breast exam before (CBE), why do you do CBE, do you have mammogram before, and why do you do mammogram.
- f) **Methods:** Official permission to carry out this study was obtained from the previously mentioned settings. ii. A pilot study was carried out after the development of the tools on 10 % of the sample size, iii. Data was collected through structured questionnaire to fill information related to demographic data, awareness, knowledge and practice of BSE, CBE and mammogram. Once the participants who meet inclusion criteria are identified, the research assistants were explain the purpose of the study to all participants, and they were informed that their participation in the study is voluntary .Then the questionnaires were distributed to the women after informed consent obtaining from all participants. Women were taking 15-20 minutes to complete the questionnaire. After all questionnaires being filled by participants, all data had been entered into computer for data analysis by utilizing SPSS program.
- g) **Statistical analysis:** Data coded, entered, and analyzed using SPSS version 20. Descriptive statistical analysis was used to determine frequency distribution, and demographic variables. M(mean), SD (standard deviation) of females' breast cancer awareness total score. Cross tabulation test used to assess differences in breast cancer awareness groups by demographic variables (occupation)
- h) **Ethical considerations:** Saudi females were informed about the nature of the study. Oral consent obtained from Saudi females who agreed to participate in the study. All participants were informed that their participation in the study is voluntary.

3. Results

Table 1: Distribution of the study sample according to their socio- demographic characters (N=300)

Characteristics	(%)Frequency
Age :	
16-25y	84(28.0%)
26-35y	64(21.3%)
36-45y	89(29.7%)
46-55y	47(15.6)
More than 55 y	16(5.3%)
Residency :	
Rural Area	55(18.3%)
Urban Are	245(81.7%)
Occupation	
Women (Employee)	153(51%)
Students	57(19%)
House Wife	90(30%)
Educational level	
Educated	270(90%)
Uneducated	30(10%)
Age at menarche :	

Older than 10 years old	39(13%)
Between 12 and 14 years old	205(68.3)
Older than 14 years old	56(18.7)
Marital status:	
Yes	213(71%)
No	87(29%)
If married the age of bearing first baby:	
Before 30 Y	138(46%)
After 30 Y	61(20%)
No children	14(4.6%)
Mean & SD of age at having first child	16.5±11.2 years
Do you think that late age of married increases the probability of breast cancer:	
Yes	112(37.3)
No	76(25.3%)
Don't know	112(37.3)

Table 2: Awareness, knowledge of the sample about risk factors of breast cancer N=300

Knowledge	Frequency	Percent
Good knowledge	280	93.3%
Poor knowledge	20	6.7%
Total knowledge	M±SD=17.8±3.6	

Table 3: Comparison between female occupation and knowledge about risk factors of breast cancer N=300

Variable	Occupation				
	Employee N0. %	House wife N0. %	Student N0. %	X2	P. value
Good knowledge n=280	139 90.8%	86 95.6	55 96.5%	3.1	0.208 NS
Poor knowledge (n=20)	14 9.2%	4 4.4%	2 3.5%		
Total	153 100%	90 100%	57 100%		

Table 4: Distribution of participants according to knowledge and practical about breast self examination N=300

Variable	No%
Have you heard of breast self-examination (BSE)?	
Yes	224(74.7%)
No	76(25.3%)
How did you hear about it.....from?(n=224)	
Home	6(2.0%)
Breast cancer awareness campaigns	87(29.0%)
Peer group	18(6.0%)
Television/ Radio or Newspaper	101(33.7%)
Others *	12(4.0%)
Who should perform BSE? (n=224)	
Male only	4(1.7%)
Female only	156(69.6%)
Both Male and Female	64(28.7%)
At what age should BSE begin? (n=224)	
< 25 years	92(41%)
>25 years	132(59%)
How often should perform (BSE)? (n=224)	
	4(1.7%)
Daily	18(8.0%)
Weekly	150(67%)
Monthly	52(23.3%)

Yearly	
How is (BSE) done? (n=224)	
Palpate with two fingers	79(35.3%)
Palpate with four fingers	119(53 %)
All the hand\Anyhow	26(11.7%)

Table 5: Distribution of participant according to knowledge and practical about Clinical breast examination N=300

Variable	No%
Do you have clinical breast examination (CBE) before :	
Yes	80(26.7%)
No	220(73.3%)
If yes.....(CBE) done for you by ?(n=80)	
Doctor	63(78.6%)
Nurse	10(1.2%)
Surgeon	4(0.5%)
Other	3(3.7%)
If yes.....how many times?(n=80)	
One time	54(67.5%)
Three times	18(22.5%)
More than 3 times	8(10%)
Why do you do (CBE) ? (n=80)	
Lump\Pain	51(63.7%)
Requested	20(25%)
Follow up	9(11.3%)
If no.....Because?(n=220)	
Lack of knowledge about CBE	37(16.9%)
Traditions \Shame	26(11.9%)
No pain or swelling	150(68%)
No female doctor	7(3.1%)

Table 6: Distribution of participant according to knowledge about mammogram N=300

Variable	No%
Do you have Mammogram before :	
Yes	59(19.7%)
No	241(80.3%)
If yes.....how many times? (n=59)	
One time	50(84.7%)
Three times	9(15.3%)
More than 3 times	0
Why do you do (Mammography) ? (n=59)	
Fear from breast cancer	56(95%)
Diagnosis \ Requested	3(5%)
Follow up	0

Table 7: Comparison between employees, house wives, students regarding knowledge and attitude about BSE, and practice of CBE as well as mammogram

Variable	Occupation			X2	P. valu e
	Employee N=153 N (%)	House wife N=90	Student N=57 N%		
Have you heard of breast self-examination (BSE)?					
Yes	143(93.5%)	50(55.5%)	31(54.4%)	58.	0
No	10(6.5%)	40(44.5%)	26(45.6%)		S
Do you think BSE necessary?					
Yes	125(81.6%)	83(92.2%)	53(93%)	9.4	0.05
No	12(7.8%)	3(3.4%)	0(0%)		S
Don't know	16(10.4%)	4(4.4%)	4(7.0%)		

Do you have clinical breast examination (CBE) before?					
Yes					
No	59(38.5%)	9(10%)	12(21%)	24.	0
	94(61.5%)	81(90%)	45(79%)		S
Did you perform Mammogram?					
Yes	35(22.8%)	16(17.7%)	8(14%)	2.4	0.31
No	118(77.2%)	74(82.3%)	49(86%)		NS
Mammogram is necessary for early detection of breast					
Yes					
No	137(89.5%)	72(80%)	42(73.6%)	8.9	0.01
Don't know	16(10.5%)	18(20%)	15(26.4%)		S
	0	0	0		

4. Results

Table 1 showed that the majority of the sample was aged 36-45 years old (29.7%), living in urban area (81.75), Employee (51%), educated (90%) and married (71%), regard age at menarche between 12 and 14 years old (68.3%), majority of sample bearing their first baby before age 30 years, and 112(37.3%) agree that late age of married increases the probability of breast cancer. knowledge of risk factors of breast cancer are included in **Table 2**. Majority of participants had good knowledge about breast cancer risk factors with percentages of (93.3%).

Table 3 highlighted that there was no statistical significance difference between employee, house wife, and students regarding awareness of breast cancer risk factors: $P \geq 0.05$.

Participants' knowledge about breast Self-Examination is presented in **Table 4**. Most of respondent agreed that BSE important (87%), (74.7%) mentioned that they heard about BSE, Television /radio or news paper followed by breast cancer campaigns are main source of knowledge about BSE, (33.7%, 29%, respectively). Most of participants told that female only perform BSE, (52%), but less than one half (46.7%,) of participants reported both male and female .Most of the participants reported age at which BSE should begin is more than 25 years (69.3%), Seventy-five per cent of women reported that the frequency of performing BSE was monthly, Also 39.7% palpate with four fingers.

Table 5 demonstrates Participants' knowledge about Clinical breast examination (CBE). Most participants reported that they did not perform any breast exam before (73.3%), but 26.7% perform breast exam. Among previous group CBE was done by doctor, one time and done for follow up, complain from lump/pain (21%, 18% and 20.7%, 17%, respectively). But the group told no done half of this group reported that no pain or swelling (50%), but 12.3% reported lack of knowledge about CBE.

Participants' knowledge about mammogram is presented in **Table 6**: most of women were not perform mammogram (80.3%), however, 19.7% reported that they performed mammogram. Among first group (16.7%) of them performed mammogram for one time, due to fear from breast cancer, diagnosis/requested and follow up, (18.7%, 13.3% and 12%, respectively)

Table 7 shows statistical significance difference between employees, house wives, and students regarding hearing about breast self examination and importance of BSE ($P \leq 0.000$). In addition, there is a statistical significance between these three occupation categories regarding performing clinical breast examination and they believe that mammogram is necessary for early detection of breast cancer. $P \leq 0.01$. However, the difference was not significant regarding performing mammogram. $P \geq 0.31$.

5. Discussion

Incidence rates of breast cancer are rising and mortality rates are proportionally high in Arab countries compared to rates in developed countries. The common late diagnosis among Arab women has been related to the low participation rates of Arab women in breast cancer screening activities [27].

The present study aimed to assess the levels of breast cancer awareness among Saudi females and to compare between house wives and employees women regarding knowledge and practical of breast cancer. Majority of participants in this study were between age 16 to 45, came from urban area, educated, employee and house wife, married, and age of menarche was between 12 to 14 years. This study supported a study done by Al Diab et al. [28] who reported that, majority of their respondents were in age between 20 to 50 years, educated and married.

In our study majority of participants showed good knowledge regarding risk factors of breast cancer (93.3%), family history, contraceptive hormones, wearing tight bra, obesity, late menopause, and bearing the first child after age 30 years, , (75%, 71.7%, 63.7%, 55.3%, 43.7%, 41.3%, respectively).

Most participants agreed that family history is the most important risk factor of breast cancer (75%), followed by bearing the first children after age 30 years (41.3%). No statistical significance difference between employees, house wife and students regarding knowledge of risk factors of breast cancer ($P > 0.05$). This result may be due to the fact that in recent years, Ministry of Health, Taif – City has intensified its campaign to promote breast cancer awareness and screening among women to decrease the prevalence of breast cancer in the city. They are primarily focusing on the younger generation to fight against breast cancer and has recommended regular practice of BSE for early detection, reporting and treatment of this type of cancer. On the other hand, electronic media such as radio and TV was the most common source of information of BC. This study concurred with Aljunaibi et al [29] who reported that, the study participants were having better knowledge of common symptoms of breast cancer (71.97%-92.36%) than the risk factors (49.68% - 86.62%). Also this result is similar to the results of another study conducted in Malaysia [30]. The most broadly known risk factor among participants was family history (86.62%), which is consistent with a cross-sectional study of knowledge and belief regarding breast cancer conducted among British women, Grunfeld et al [31] but higher than the results of a study conducted in Yemen [32].

Dandash and Mohamed, ^[16] conducted a study in Saudi Arabia reported 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 hormone replacement therapy as other risk factors of breast cancer respectively. In addition, Radi ^[19] highlighted that, knowledge of other risk factors of breast cancer was limited as only few females knew that late menopause (18.5%), early menarche (17.0%) and lack of physical exercise (15.5%) are risk factors of breast cancer.

Regarding breast self examination awareness the majority of the study sample had awareness about importance of BSE which helped early detection of breast cancer. Most of participants heard about BSE from TV and breast cancer awareness campaigns (74.7%, 33.6% and 29%, respectively), 52% reported that female only should perform BSE, followed by 46.7%, reported both male and female, 69.3% should perform after 25 years and done monthly (75.3%).

Regarding the technique 39.7%, use four fingers to exam the breast. There was statistical significance difference between employees, house wife and students regarding knowledge of BSE and importance of BSE ($P < 0.05$). These findings are congruent with previous studies investigating awareness and knowledge of breast cancer and practices of breast self examination among women and university students in Saudi Arabia ^[15, 18, 17, 19].

Also this is consistent with the study done by Oluwole, Al-Dubai et al and Yakout et al. ^[20, 33, 34] who demonstrated that most of the respondents were aware about BSE. While, knowledge about the different methods of screening of breast cancer was generally poor. On the other hand, the study done among young Malaysian women revealed that electronic media such as radio and TV was the most common source of information of BSE.

The finding of the present study revealed that, most of participants were not perform clinical breast exam, because no pain or swelling followed by lack of knowledge about CBS (73.3%, 50%, 12.3%, respectively). but, 26.7% answered that they perform CBE by doctors, 21% one time, 18%, for follow up and present pain/lump, (20.7%, 17% respectively). Also, most of participants don't have mammogram (80.3%), 19.7%, have done mammogram, one time, for fear from breast cancer, diagnosis and follow-up (16.7%, 18.7%, 13.3% and 12%, respectively) and good awareness about importance of mammogram for detecting breast cancer. Statistical significance difference between employees, house wife, students regarding importance of mammogram for detect breast cancer, employee more aware than other groups. Also significance difference regarding clinical breast exam. Most of participant had not done CBE, no statistical difference regarding perform mammogram. Radi ^[19], highlighted that, lack of understanding of the importance of breast self-examination, may be due to underutilize mammogram screening. Also the knowledge of the use of mammogram as a screening tool for early detection of breast cancer was found to be poor among study participants, only 14.3% have heard about screening mammogram. Participants showed poor understanding of major breast cancer risk

factors, Alharbi et al. ^[35], and Baig et al ^[21], reported that, Early detection of breast cancer can be achieved by perform breast self examination (BSE), clinical breast examination (CBE) and mammogram. The utilization of other breast cancer screening services can serve as a veritable means of obtaining information concerning screening methods such as mammogram. The fact that women with poor access to physician care are less likely to undergo mammogram has been reported by Schueler et al. ^[36]. Clinicians need to be educated on the need to give information to women on the most current investigative or screening methods as these patients may never get such opportunities in other settings apart from hospitals. The possibility of improving mammogram screening among hospital inpatients has also been described ^[38].

Regarding mammogram awareness, this study found that half of the respondents had heard about mammogram. This figure is high in comparison to that reported in Saudi Arabia (30.0%) by Sait et al. ^[38] and Iran (9.0%) by Montazeri et al. ^[39] but is lower than that in Turkey (72.1%) ^[40]. Mammogram, breast self examination and clinical breast examination are considered as screening methods for early detection breast cancer Lam et al., ^[41] and screening behavior was found to be influenced by level of knowledge and perceived risk factor among women ^[42]. In addition, inadequate knowledge on breast cancer and screening methods might be one of the main reasons for the delay of breast cancer detection in Malaysia ^[43].

In conclusion, this study found good awareness and knowledge regarding risk factors and symptoms of breast cancer among women in Taif City. This study found a low awareness of mammogram and clinical breast examination. Since only few women in this study had done mammogram and breast clinical exam, there is a need to introduce breast cancer education on risk factors, early signs, and methods of diagnosis of breast cancer for secondary schools as well as universities. The earlier detection through screening, the increased awareness and improved treatment, are believed to have decreased the breast cancer mortality rate.

6. Recommendation

Further research studies should be undertaken on the Taif City for women dealing with an early detection of breast cancer.

Promote awareness of the women about screening procedure through breast companion and social media is the vital role for breast cancer detection and prevention.

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