Original Article

Knowledge, Attitudes and Practices among Urban Women of Riyadh, Saudi Arabia, Regarding Breast Cancer

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ABSTRACT

Objectives: To determine the knowledge, attitudes and practices (KAP) of urban women in Riyadh regarding Breast Cancer (BC) and its available screening and treatment modalities
Design: Cross-sectional descriptive study
Setting: BC Awareness day campaigns conducted in Riyadh city from October 2010 to October 2013
Subjects: Six hundred females aged more than 18 years who responded to a well-structured questionnaire comprising of 37 questions.
Main Outcome Measures: The level of knowledge and awareness regarding the risk factors and prevention of BC, misconceptions, symptomatology including KAP, regarding self breast examination (SBE), mammography and treatment for BC
Results: Out of the 600 participants with a mean age of 31.9 years (± 10.49), 342 (57.0%) were married, and 215 (35.8%) were employed. The education level was considerably high; with 363 (60.5%) graduates. Late child bearing age (48.2%), positive family history (75%), increase in age (83.5%), and fatty diet (60.5%) were reported important risk factor for BC. A breast lump (70.8%), underarm lump (60.2%), breast pain (53.7%), change in nipple shape (58.7%) and nipple discharge (51.8%) were reported as the important symptoms for BC. About 348 (58.0%) had heard about SBE and 290 (48.3%) knew how to perform SBE. Nearly 433 (72.2%) believed that early detection for BC is possible with mammography and sound waves. Only 42 (7.0%) knew the treatment for BC. Majority of women 565 (94.2%) wanted more media awareness campaigns regarding the issue.
Conclusion: There is an immediate need for an aggressive campaign to increase awareness regarding BC in Saudi Arabia.

KEYWORDS: attitude, BC, knowledge, practices, Riyadh, Saudi Arabia

INTRODUCTION

Breast Cancer is the most frequent malignancy in women worldwide. It is the leading cause of female cancer related disability and mortality[1]. According to the World Health Organization (WHO), 1.4 million women are diagnosed with BC each year which accounts for 23% of all newly diagnosed malignancies[2].

According to the International Agency for Cancer Research and GLOBOCAN 2008, in the Gulf Cooperation Council (GCC) countries, BC in Saudi Arabia accounts for 26% of all newly diagnosed cancers in Saudi women, with an incidence of 21.6 per 100,000; however, it is not associated with a similar pattern of increased early detection and decreased mortality, as is the case in the developed world[3,4].

In Saudi Arabia, the BC is associated with significant mortality, as most cases present at young age and in an advanced stage, which may in part be attributed to lack of knowledge or awareness of the risk factors, early detection, screening and treatment for the BC[5]. Previously, similar community based studies from different regions in Saudi Arabia have reported the lack of knowledge about the common risk factors for BC, lack of understanding of the importance of breast self-examination (BSE) and mammography[6,7].

Our aim was to determine the level of knowledge or awareness regarding the risk factors and ways of prevention for BC, misconceptions, symptomatology including knowledge, attitudes and practices (KAP), regarding SBE, mammography and treatment for BC in women of urban Riyadh city.

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SUBJECTS AND METHODS

A cross-sectional descriptive study on females aged above 18 years was carried out in Riyadh (after approval from the institutional ethical review committee) with a well-structured questionnaire distributed among women during BC awareness day campaigns in 2010 to 2013.

Exclusion criteria

1. Women working in the health industry (doctors, nurses, pharmacists, medical students)
2. Known BC patients

The questionnaire was written in Arabic language and had 37 questions which were divided into the four components, namely, (a) Knowledge about BC risk factors and protective factors (15 items), (b) symptomatology and signs of BC (8 items), (c) BC prevention and screening tools (11 items) and (d) cure and treatment for BC (3 items). Each question was ranked separately and scored by knowledge, attitude and practice (KAP) component. Each correct answer was given a score of +1, while every incorrect answer resulted in a deduction of 0.5 from the cumulative score according to discrete probability function f(x) and probability density functions (Bayesian hierarchical approach)[8]. Answer identifying a lack of knowledge (don't know) was given no score. Hence,

Table. 1: Demographic characteristics of six hundred participants

Characteristics	Participants* n (%)
Age groups	
Below 30 years	120 (20.0)
31 - 40 years	210 (35.0)
41 - 50 years	161 (26.8)
Above 50 years	109 (18.2)
Education Status	
Uneducated	21 (3.5)
Primary	40 (6.7)
Matric /O level	40 (6.7)
Intermediate/ A level	91 (15.2)
Graduate	363(60.5)
Masters	40 (6.7)
Ph.D.	5 (0.83)
Occupation	
Students	182 (30.3)
Housewives	197 (32.8)
Employed	215 (35.8)
Retired	6 (1.0)
Marital status	
Single	223 (37.2)
Married	342 (57.0)
Widow	11 (1.83)
Divorced	24 (4.0)
Location	
Central Riyadh	598 (99.7)
Peripheral Riyadh	2 (0.33)

* Mean age: 31.9 years (Range 19 – 60 years); SD: 10.49
SD = standard deviation

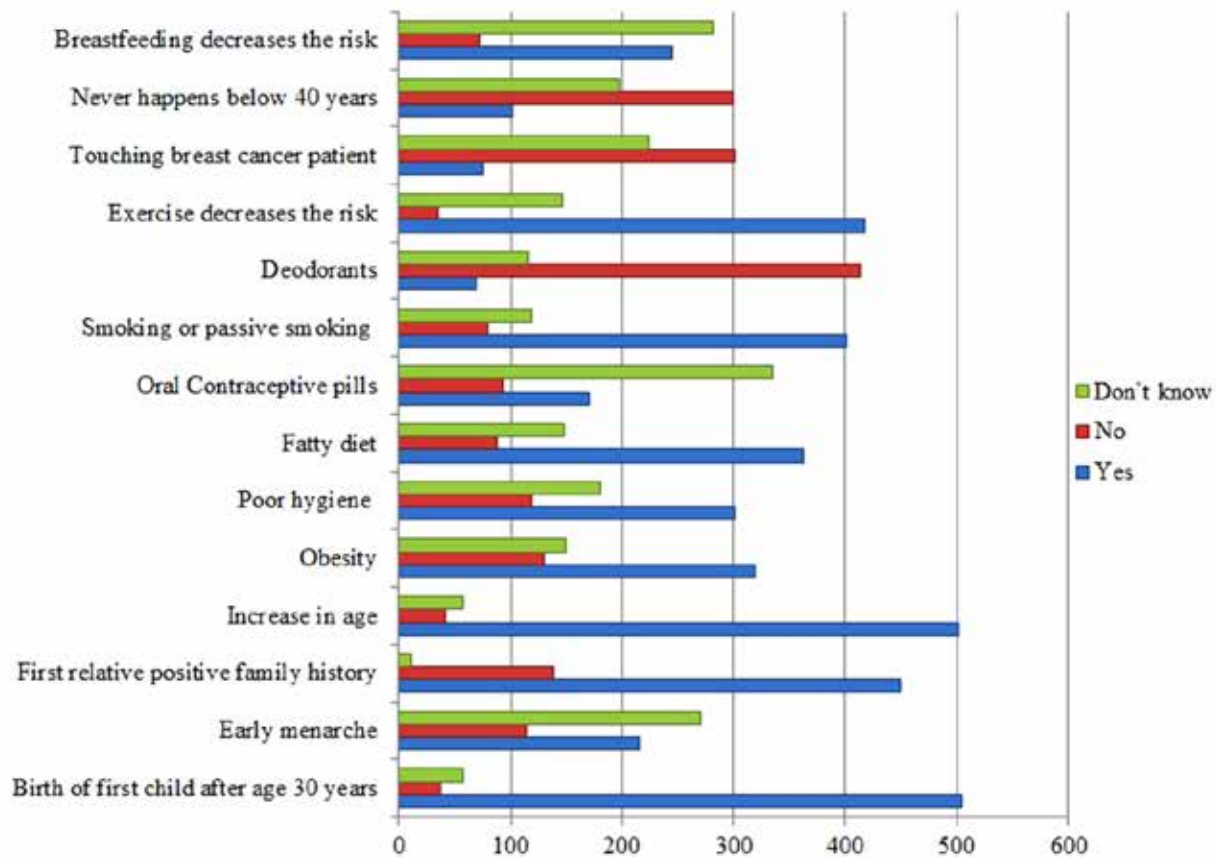

Fig. 1: Response to questions regarding knowledge about BC risk factors and protective factors

the scores ranged between -7.5 and +15 for knowledge regarding risk factors and protective factors, -4 and +8 for knowledge regarding symptomatology and signs, -5.5 and +11 for knowledge regarding the prevention and screening and -1.5 and +3 for treatment modalities.

The sample size was calculated using a confidence level of 95% and a 5% bound-on error and prevalence BC of 55.2%[9,10]. The required sample size came out to be 584. Assuming a refusal rate of 10%, 642 potential subjects were approached and the target achieved was 600 participants.

Statistical analysis

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 17.0. Descriptive statistics were used to calculate mean and standard deviations for demographic characteristics. Frequencies and percentages were computed for categorical variables. Mean and corresponding 95% confidence interval for continuous variables was calculated and analysis of variance (ANOVA) was used to confirm significance values. A p-value of less than 0.05 was taken to be statistically significant. Binary multivariable logistic regression was used in ascertaining the independent risk factors about BC, and adjusting the confounding factors between variables.

RESULTS

The mean age was 31.9 years (range: 19 – 60 years) with standard deviation (SD) of 10.49.The demographic characteristics are shown in Table 1.

Knowledge of participants about prevention of BC is shown in Fig. 1. Knowledge of participants about symptomatology of BC is shown in Fig. 2. Common misconceptions were; (a) active or passive smoking causes BC (66.8%), (b) BC never happens in women below 40 years (17.0%) and (c) BC can happens after touching any BC patient (12.5%).

Knowledge of participants about BC prevention and detection is shown in Table 2. The main reasons for lack of attention to BSE and mammography were

Table 2: Knowledge of participants about BC prevention and detection

Sr. No.	Questions	Response	Participants n (%)
1	Do you know what SBE is?	Yes	348 (58.0)
		No	168 (28.0)
		Don't know	161 (26.8)
2	Is SBE important?	Yes	300 (50.0)
		No	190 (31.7)
		Don't know	110 (18.3)
3	Do you know how to do SBE?	Yes	290 (48.3)
		No	180 (30.0)
		Don't know	130 (21.7)
4	Are you doing SBE periodically?	Yes	79 (13.2)
		No	270 (45.0)
		sometimes	186 (31.0)
5	Do you encourage your relatives and friends to do SBE?	Yes	384 (64.0)
		No	99 (16.5)
		sometimes	116 (19.3)
6	What is right time for doing SBE?	Any time	62 (10.3)
		Don't know	193 (32.2)
		After end of menstrual cycle	321 (53.5)
		Before starting menstrual cycle	24 (4.0)
7	What do you think of doing medical tests from time to time?	Important	541 (90.2)
		Not important	14 (2.3)
		Fear of detection	19 (3.2)
		High costs	3 (0.50)
		Lack of time	18 (3.0)
8	What do you think of screening measures to combat BC?	Good	368 (61.3)
		Medium	203 (33.8)
		Worse	25 (4.2)
		Don't know	4 (0.67)
9	Does early detection of BC helps in cure?	Yes	522 (87.0)
		No	39 (6.50)
		Don't know	39 (6.50)
10	Are you aware of mammography?	Yes	508 (84.7)
		No	28 (4.7)
		Don't know	64 (10.7)
11	Do sound waves and mammogram help in early detection of BC	Yes	433 (72.2)
		No	6 (1.0)
		Don't know	161 (26.8)

SBE = Self breast examination

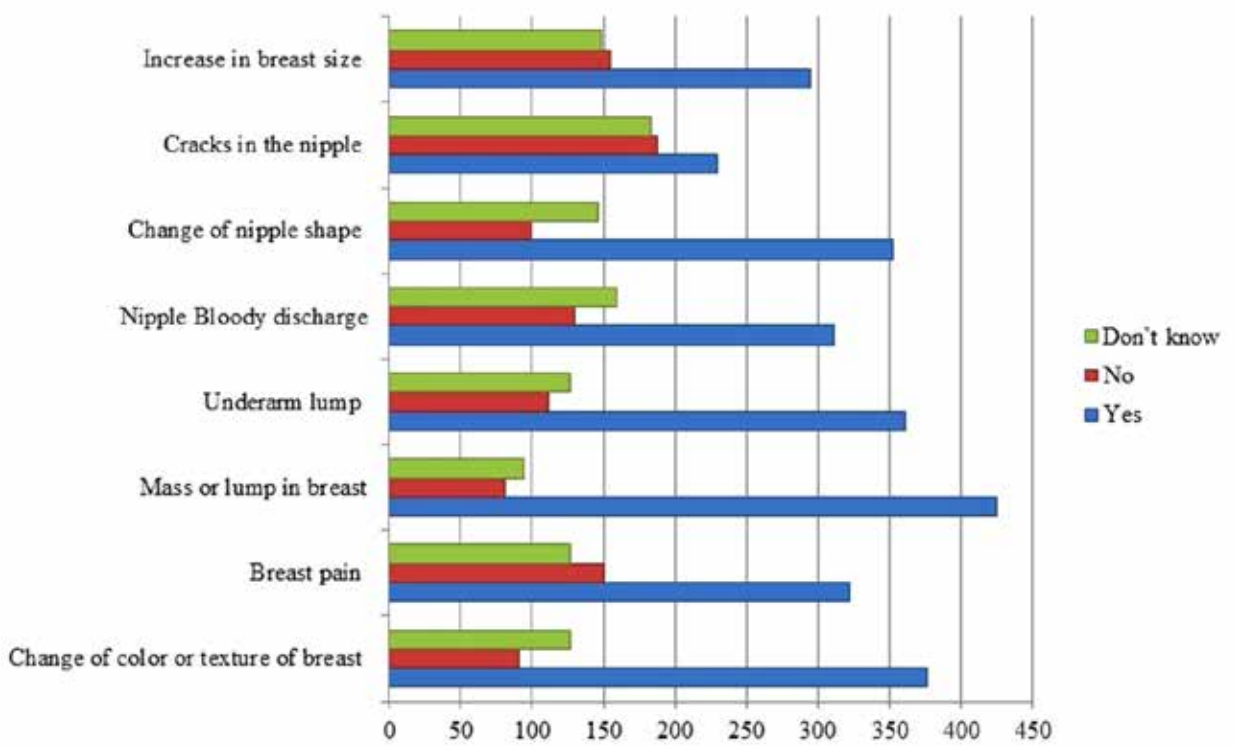

Fig. 2: Response to questions regarding signs and symptoms of BC

the hesitance among females' in discussing breast-related problems (21%) and the fear of finding a mass in their breasts (20%).

Among participants, responses to questions about cure, treatment modalities and need for more awareness are shown in Fig. 3.

Regarding the awareness of risk factors, the mean score for the overall knowledge of risk factors was 5.84 (SD: 3.52), mean scores for the overall knowledge of BC symptoms and signs, screening and treatment modalities were 4.02 (SD: 3.13), 3.94 (SD: 2.63) and 1.82 (SD: 1.59) respectively (Table 3).

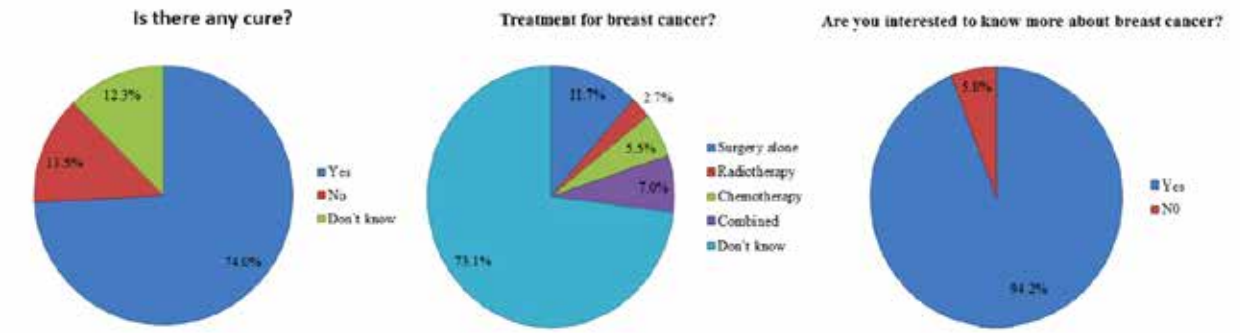

Fig. 3: Response about treatment and more need for education regarding BC

Table 3: Knowledge of participants about BC symptoms and signs

Sr. No.	Questions	Yes n (%)	No n (%)	Don't know n (%)
1	Does change of color or texture of breast indicate to BC?	376 (62.7)	91 (15.2)	127 (21.2)
2	Does breast pain indicate to BC?	322 (53.7)	150 (25.0)	127 (21.2)
3	Does presence of mass or lump indicate the BC?	425 (70.8)	81 (13.5)	94 (15.7)
4	Does underarm lump indicate to BC?	361 (60.2)	111 (18.5)	127 (21.2)
5	Do nipple secretions indicate BC?	311 (51.8)	130 (21.7)	159 (26.5)
6	Does the change of nipple shape indicate to BC?	352 (58.7)	100 (16.7)	146 (24.3)
7	Do cracks in the nipple indicate to BC?	230 (38.3)	187 (31.2)	183 (30.5)
8	Does increase breast size indicate to BC?	295 (49.2)	155 (25.8)	148 (24.7)

BC = Breast cancer

Table 4: Regression analysis of variables associated with high awareness in the study

Variable	p-value	OR (95% CI)
Risk factors and protection		
Age of 40 years and above (n = 270)	0.6	1.5 (0.9 - 2.5)
Education level of graduate and above (408)	0.01	2.4 (1.4 - 3.7)
Marital status (377)	0.8	1.7 (1.1 - 2.7)
Employed or retired (221)	0.02	2.3 (1.2 - 3.6)
Symptoms and signs		
Age of 40 years and above (283)	0.8	1.7 (1.0 - 2.8)
Education level of graduate and above (403)	0.02	2.5 (1.7 - 3.8)
Marital status (365)	0.6	1.4 (0.8 - 2.2)
Employed or retired (220)	0.04	2.0 (1.2 - 3.4)
Detection and Screening		
Age of 40 years and above (265)	0.06	1.7 (1.0 - 3.2)
Education level of graduate and above (395)	0.02	2.5 (1.5 - 3.6)
Marital status (377)	0.7	1.6 (1.0 - 2.4)
Employed or retired (250)	0.5	1.3 (1.1 - 2.4)
Treatment modalities		
Age of 40 years and above (276)	0.9	1.0 (0.5 - 2.5)
Education level of graduate and above (402)	0.01	2.6 (1.7 - 3.8)
Marital status (350)	0.7	1.6 (1.1 - 2.6)
Employed or retired (254)	0.3	1.2 (0.9 - 2.2)

OR = Odds Ratio, CI = confidence intervals, OCP = oral contraceptive pills

A multiple logistic regression was applied to high awareness group (mean scores > 4.5). In this group and it was noticed that that educational status, age above 40 years and employment were the main statistically significant variables associated with high awareness level (Table 4).

DISCUSSION

Many surveys regarding BC awareness and the screening modalities have been conducted in the different parts of Saudi Arabia[5-7,11,12]. Similar to our findings, other investigators have reported that Saudi women have limited information and knowledge of BC and this attributes to presentation of BC at advanced stages[13]. Further, similar to our findings, other investigators also endorsed the demographic characteristics (higher levels of education and age above 40 years) as significant determinants of knowledge about BC risk factors, prevention, adherence to SBE, early detection and knowledge about treatment options.

A study conducted in Dammam, Saudi Arabia, in 1991 by Ibrahim *et al*, demonstrated the education level was statistically associated with awareness; whereas age and family history were not. It did not investigate income levels as in our study[14]. Knowledge without its application is of no use. In our study, 58% of the population had heard about BSE, and nearly 48.3% of our total study population knew how to perform a BSE. The major reason for not performing a BSE identified by the participants in our study was a lack of knowledge or fear (41%) regarding the BSE. However, the percentage of women periodically performing BSE was found to be 13.2% which is comparable to yields of other national studies but far less than as compared to developed countries. In USA, two surveys carried on immigrants' women showed that 53.9% to 55% of the respondents regularly practiced BSE[15,16]. Interestingly, a studies conducted on Nigerian women found that about 87.7% of the respondents had heard of BSE and only 19.0% of them were performing this examination periodically. If we compare Nigerian results with our setting, a greater proportion of Nigerian women were performing the BSE[17, 18]. This difference can be explained by cultural and religious barriers in Saudi Arabia. However, majority of women in our study were willing for media campaigns for BC awareness as currently Saudi Arabia seems to be way behind in media based culturally sensitive campaigns. However, recently successful efforts (Pink Hijab Day and BC day) by Saudi Cancer Society, Zahra BC Association have been made to create awareness in Saudi Arabia without violating the cultural and religious values. However, there is room for more television based media campaigns or organizing frequent open BC forums to enhance the knowledge of Saudi women regarding BC.

The strong points of our study were; (a) reasonable sample size, (b) questionnaire was filled-up in the presence of volunteers who were provided by investigators, (c) we also investigated about participants' knowledge about cure and treatment as well. Limitations of our study were; (a) it was carried out on a segment of the population visiting hospitals or BC awareness campaigns which may be frequented by a specific subset of the overall population, (b) the respondents showed some degree of health seeking behavior (already had some knowledge about BC) by visiting these hospitals or campaigns and (c) we did not look into monthly incomes of participants.

CONCLUSION

Educational level, age above 40 years and employment status had significant association with knowledge and attitude. It seems that improvement of knowledge and practice of Saudi women and their awareness of BC risk factors and early detection and intervention are limited. There is an immediate need for an aggressive campaign to increase awareness regarding BC in Saudi Arabia.

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