



ISSN: 2231-3354
 Received on: 11-12-2011
 Revised on: 17-12-2011
 Accepted on: 21-12-2011

Knowledge and Awareness of breast cancer among university female students in Muscat, Sultanate of Oman- A pilot study

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ABSTRACT

Breast cancer is the most common cancer among women in Oman and worldwide. Breast cancer patients in Oman are commonly presented at a relatively young age and with an advanced stage of disease. This could be due to lack of awareness, knowledge and beliefs about breast cancer and its management among females. The present pilot study assessed the awareness and knowledge about the screening method (Breast self examination), risk factors and symptoms of breast cancer among 157 university female students in Muscat region. The study results indicated that female students were well informed and aware about breast cancer in general but their knowledge of breast cancer symptoms was better than the risk factors of breast cancer. The study also revealed that majority of the students knew that Breast self examination (BSE) is the most common and easy method of breast cancer detection but their knowledge regarding frequency and the appropriate time to practice BSE was not very good. Thus, more educational programs could be designed to provide comprehensive information on breast cancer and BSE to improve women's knowledge and awareness which can help in the early detection and reporting of breast cancer for the better treatment.

Keywords: Breast cancer, breast self examination, carcinoma, mortality.

INTRODUCTION

Breast cancer is the leading cause of cancer associated death among women worldwide (Al-Moundhri *et al.*, 2004). It has been reported that each year over 1.15 million women are diagnosed with breast cancer all over the world and more than a half million die from this disease (WHO, 2008). The main reason for this escalating mortality is lack of awareness and late diagnosis of disease (Pinnoti *et al.*, 1995, Parkin, 1994). The sultanate of Oman is an Arabian gulf country with a developing health care system, and having a population of 2.74 millions (Oman census, 2011). In Oman also, breast cancer is the most common cancer in the women (17% of all cancers) and its incidence is on the rise with an increase from 53 reported cases in 1996 to 104 reported cases in 2008 (Mohammed *et al.* 2008) (Table 1). According to National cancer registry of Oman, 2008, the highest incidence of breast cancer was noted in Muscat (45 per 100,000) and the overall standardized rate is 15.6 per 100,000 (Kumar *et al.*, 2011). 74% of all the cases were diagnosed as infiltrating carcinoma (Table 2). The mortality of breast cancer can be reduced and at the same time patient prognosis can be improved by early detection of breast cancer through regular breast cancer screening programs (Elmore *et al.*, 2005). Thus, World Health Organization has emphasized on raising awareness among women for early detection and reporting of breast cancer to increase life quality, survival and to overcome the ever increasing burden of this deadly disease.

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Table 1: Frequency of breast cancer among Omani females from 1996-2008.

S. No.	Year	No. of cancer cases reported	Breast cases	Total no. of cancer cases among females	% incidence of breast cancer prevalence
1	1996	53		342	15.49
2	1997	56		398	14.07
3	1998	58		423	13.71
4	1999	58		413	14.04
5	2000	71		436	16.28
6	2001	75		419	17.89
7	2002	73		384	19.01
8	2003	61		414	14.73
9	2004	109		471	23.14
10	2005	91		428	21.26
11	2005	93		449	20.71
12	2007	101		410	24.63
13	2008	104		465	22.36
14	Total cases	942		5452	17.27

Table 2: Morphology of breast cancer in Oman.

S. No	Type of cancer	%
1	Infiltrating duct carcinoma	74
2	Metaplastic carcinoma	4
3	Lobular carcinoma	4
4	Neoplasm, malignant	5
5	Miscellaneous and unspecified carcinoma	13

In recent years, Ministry of Health, Sultanate of Oman has intensified its campaign to promote breast cancer awareness and screening among women to decrease the prevalence of breast cancer in the country. They are primarily focussing 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.

The aim of this study was to assess the awareness and knowledge of female university students about breast cancer and breast self examination. This pilot study may help in evaluating the impact of ongoing educational programs for breast cancer awareness in Oman.

METHODS

Sample

A cross sectional survey was conducted in the months of January- February, 2011 in the Muscat region of Sultanate of Oman. A total of 200 female students with no personal history of breast cancer and ability to understand the semi –structured questionnaire were recruited and randomly selected from various colleges of Muscat. A verbal consent was obtained from all the students who agreed to participate in the study.

Data collection

The questionnaire was developed based on information drawn from literature and contained four sections. Section one for background information such as age, education level, nationality and marital status. Section two and three determined respondent's knowledge of risk factors and symptoms of breast cancer and had 8 and 6 questions respectively. Section four had 4 questions and was about knowledge of BSE. Data were collected from 157 students

who completely filled and returned the self administered questionnaire (response rate – 78.5%).

Analysis

Data were analysed with SPSS v 13.0. categorical variables were described by using frequency distribution and percentage. Mean and standard deviation were calculated for age variables.

RESULTS

Background Characteristics

The students' ages ranged from 28-37 yrs and the mean age was 25.7 (SD \pm 5.7) years (Table 3). The majority of the participants were Omani (78.34%) followed by other group (11.46%) representing Non Omani other than Indian and Pakistani women. Fifty one percent of the total participants were post graduate students and around 43% of them were in the age group of 18-24 years.

Table 3: Characteristics of the study participants.

Variables	No.	%
Age groups (years)		
18-24	68	43.31
25-29	31	19.74
30-34	47	29.93
>35	11	7.06
Age (Mean\pmSD)	25.65 \pm 5.7	
Nationality		
Omani	123	78.34
Indian + Pakistani	16	10.19
Others	18	11.46
Educational status		
Undergraduate	77	49.04
Postgraduate	80	50.96

Table 4: Knowledge of breast cancer risk factors.

Variables	Correct response N (%)	Incorrect response N (%)
Old age	100 (63.69)	57 (36.3)
Family history	136 (86.62)	21 (13.37)
Cigarette smoking	104 (66.24)	53 (33.76)
High fat diet	102 (64.97)	55 (35)
No breast feeding	96 (61.1)	61 (38.85)
Early menses	78 (49.68)	79 (50.31)
Contraceptive use	98 (62.42)	59 (37.58)
Late menopause	93 (59.23)	64 (40.76)

Knowledge of Risk Factors and Symptoms of Breast Cancer

The participants were asked 8 important risk factors and 6 most common presenting symptoms of breast cancer and the responses were recorded as yes or no. More than 60 % of the respondents had very good knowledge of all the risk factors for breast cancer except early menses. The most widely known risk factor among the participants was family history of breast cancer (86.62 %). The lowest level of knowledge of risk factor was regarding early menses, being identified by only 49% respondents. (Table 4). A vast majority (3/4th) of the participants were aware about the presenting symptoms of breast cancer. A total of 145 (92%) and 139 (88%) correctly recognized Breast pain and Lump in the breast as the most common symptoms of breast cancer (Table 5).

Table 5: Knowledge of breast cancer symptoms.

Variables	Correct N (%)	Incorrect N (%)
1. Change in shape of breast (asymmetry)	130 (82.8)	27 (17.19)
2. Breast lump	139 (88.5)	18 (11.46)
3. Nipple discharge	128 (81.51)	29 (18.47)
4. Nipple retraction	113 (71.97)	44 (28.03)
5. Breast pain	145 (92.36)	12 (17.6)
6. Lump or swelling in the armpit	127 (80.89)	30 (19.11)

Table 6 : Knowledge of Breast Self Examination.

Variables	N (%)
1. Can BSE help in the early detection of breast cancer?	
Correct response	134 (85.35)
Incorrect response	23 (14.64)
2. Do you know how to perform BSE?	
Yes	121 (77.07)
No	36 (22.92)
3. What is the Frequency of BSE?	
Correct response (monthly)	114 (72.61)
Incorrect response (yearly, occasionally)	43 (27.38)
4. When is the appropriate time for performing BSE?	
Correct response (a week after menses)	96 (61.1)
Incorrect response (a week before menses, during menstruation)	59 (38.85)

Knowledge of Breast Self Examination (BSE)

When the students were asked about their knowledge regarding BSE, it was found that 134 (85.35%) participants were well informed that BSE is used as a screening method for breast cancer, however, only 77% knew the correct procedure to perform BSE. Only 114 (72.61%) participants correctly identified that BSE should be performed monthly on a regular basis, though only 96 (61.1%) respondents knew the correct timing for performing BSE (Table 6).

DISCUSSION

This study provided important data about the knowledge and awareness of risk factors and symptoms of breast cancer among female university students in Muscat region. We found 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%). This finding is similar to the results of another study conducted in Malaysia (Hadi *et al.*, 2010). The most widely 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.*, 2002), but higher than the results of a study conducted in Yemen (Ba' Amer, 2010). Another study conducted in Saudi Arabia, reported no breast feeding (52.7%) as the most commonly known risk factor among respondents, which is lower than our finding (Danash and Al-Mohaimeed, 2007)]. A total of 61% participants of our study believed no breast feeding as the breast cancer risk factor. However, more than 50 % of the respondents were unable to recognize early onset of menses as the complex risk factor of breast cancer.

Good knowledge of breast cancer symptoms is very essential for early diagnosis and treatment of breast cancer. The study results revealed that female students had adequate knowledge about breast cancer symptoms and a vast majority of the participants (92.36%) considered breast pain as the most common

presenting symptom. The second most common symptom reported by the students was breast lump (88.5%) which is higher than the results of other similar studies done in UK (85%) (Ba' Amer, 2010), Iran (57%) (Haji *et al.*, 2002)] and Nigeria (53%) (Odusanya, 2001). It was also observed that only 28% female students did not know that nipple retraction is the warning sign of breast cancer. This increased awareness about the early sign, symptoms and risk factors of breast cancer among female students could be attributed to their age and educational level. Age, educational level and social status significantly influence breast cancer knowledge (Hadi *et al.*, 2010) and investigations in the USA (Bresolw *et al.*, 1997) and Australia (Paul *et al.*, 1999) have demonstrated that older women have poor knowledge of key risk factors and symptoms of breast cancer.

This study also assessed the knowledge of Breast self examination (BSE) among the study participants. BSE is one of the important steps for identifying breast tumors at an early stage (Marinho *et al.*, 2003) and thus regular practice of BSE could protect women from severe morbidity and mortality due to Breast cancer. We found that 134 (85.35%) respondents believed that BSE could help in early detection of breast cancer, this is higher than the results of an earlier study done in Kuwait, where 2/3rd participants acknowledged the role of BSE in breast cancer detection (Al Qattan and Saleh, 2008). However, 36 (22.92%) respondents did not know the correct procedure to perform BSE. Similarly, 43 participants were not aware of the frequency of BSE and they wrongly believed that it should be performed either annually or occasionally. Further, it was observed that only 61% of all participants knew the appropriate time to perform BSE. These data suggest the need of more education programs on BSE and screening method of breast cancer to increase the knowledge and awareness among Omani women about this deadly disease.

CONCLUSION

This pilot study was conducted within the convenient sample in Muscat region only, therefore, does not reflect the knowledge of all female students. It is evident from the study results that over all the female students were well informed and aware about breast cancer in this part of the world, but their knowledge of risk factors was not at par with the knowledge of breast cancer sign and symptoms. Majority of the participants knew about the BSE but they lack knowledge regarding frequency and appropriate time to practice BSE. Thus, more educational programs could be designed to provide comprehensive information of breast cancer and BSE to improve women's knowledge and awareness which can help in the early detection and reporting of breast cancer for the better treatment.

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