What do Omani Women know about Breast Cancer Symptoms?

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ABSTRACT

Objectives: Breast cancer is one of the most common cancers and a leading cause of cancer-related mortality in women worldwide. Studies to detect the awareness of breast cancer among Arab women are few and point to a lack of breast cancer knowledge among females. Early detection of breast cancer plays a leading role in reducing mortality rates and improving prognosis. This study aims to assess the knowledge and awareness of breast cancer symptoms among Omani women. *Method:* A descriptive, cross-sectional survey design was carried out in Muscat, Oman. The study was conducted at three health centers and three shopping malls using convenience sampling. A total of 369 women consented to be part of the study and completed a questionnaire. Responses to the questionnaire were summed to give an overall knowledge score. Descriptive statistics were used to summarize the data, which was also analyzed statistically. *Results:* Among the total number of women 68 (19%) were calculated to have poor knowledge, 219 (59%) had average knowledge, 77 (21%) had good knowledge, and five (1%) had excellent knowledge on breast cancer. Among the variables, education status ($p=0.002$, $p<0.050$), and family history of breast cancer ($p=0.000$, $p<0.010$) was significantly related to a higher knowledge level. *Conclusion:* The study revealed that there was lack of awareness and knowledge on breast cancer symptoms among Omani women. Breast cancer awareness and early detection through regular breast screening is important to reduce the mortality and morbidity of the disease.

Breast cancer ranks second in global cancer incidence. It is reported that the incidence of breast cancer is increasing at the rate of 3–4% in developing countries.[1,2] The Sultanate of Oman is a developing country in the Gulf region with a developing health care system. Breast cancer in Omani women accounts for approximately 32% of the total cancer cases[3] and is the second leading cause of mortality in Oman.[4]

The incidence of breast cancer has increased from 53 reported cases in 1996 to 104 cases in 2008.[5] According to the National Cancer Registry of Oman, the highest incidence of breast cancer cases recorded in Muscat was in 2008 (45/100,000). One out of five Omani women is diagnosed with breast cancer in her lifetime and the overall standardized incidence rate is 15.6 cases per 100,000.[6] The frequency of cancers among Omani females has increased steadily from 58 in 1999 to 147 in 2011.[7]

Annually, almost half of the females diagnosed with breast cancer belong to developing countries, where they present in advanced-stages of the disease at a younger age. These women have poor overall outcomes compared to women in developed countries. In Oman, age at diagnosis is younger than in the western world, and the majority of patients present at advanced stages of disease (III and IV).[6] This was attributed to a lack of mass education and screening programs, poverty, poor access to health care facilities, cultural barriers, lack of expertise, and poor country infrastructure. The same concept has been reaffirmed by many researchers.[8,9]

Breast cancer is a progressive disease, small tumors are likely to be at an early stage and early detection is likely to result in successful treatment, and a good prognosis. Though breast cancer is one of the most prevalent cancers in the world, it has a better survival rate than other cancers.[10-12] Breast cancer is the most common cancer among women and second most common cancer overall, but it ranks fifth as a cause of death because of the relatively good prognosis.[12]

The recommended screening methods for early

detection of the disease are mammography, clinical breast examination and breast self-examination (BSE).[13] Studies that assess the awareness of breast cancer and the practice of BSE among Arab women were also few and pointed to a lack of breast cancer knowledge among women.[9,14]

Efforts to target the early detection of breast cancer would play a major role in reducing the stage of cancer at diagnosis, its cost effective management, and improving the odds of survival and cure. There are few published studies related to the awareness of the symptoms of breast cancer among the Omani female population, indicating the need for steps to raise breast cancer awareness and to introduce breast cancer screening programs in Oman. This study aims to assess the knowledge and awareness of breast cancer symptoms among Omani women.

METHODS

A descriptive, cross sectional survey design was used to conduct the study through convenient sampling technique. The study was conducted in different areas of Muscat, at three health centers (in Wattayah, Muttrah and Ruwi) and three shopping malls (Muscat Grand Mall, Qurum City Centre, and Lulu Hypermarket, Bousher). Omani women, between the age of 18 and 60, were asked to fill in questionnaires aimed at gaining an understanding of their awareness and knowledge of breast cancer. The study and its possible benefits were explained and the women willing to participate were asked to sign an informed consent. Confidentiality and anonymity were guaranteed to all study participants.

The sample size of 369 women was calculated using 95% confidence interval and prevalence of 40% (the Arab prevalence rate). Non-Omani women and Omani women in the medical field were excluded from the study. A standardized tool was selected, modified and translated from English to Arabic by a bi-lingual expert. The questionnaire consisted of two parts and was given to all the participants. The first part recorded demographic data, including: age, marital status, number of children, educational status, occupation, and family history of breast cancer. The second part was related to breast cancer awareness, including: the symptoms of breast cancer, common screening methods, risk factors, treatment, possibility of spread to other parts of the body, and the national awareness program by the Oman Cancer Association. The questions were partly multiple choice and partly fill-in-the-blanks. There were single and multiple answers for questions. The tool included instructions and, when needed, the research assistants aided the participants. Answers that suggested the woman was breast cancer aware scored one mark, up to a maximum of 16 marks. The marks were divided in to four categories. A score of one to four indicated poor knowledge; five to eight, average knowledge; nine to 12, good knowledge; and 13 to 16, excellent knowledge. The women took 10 to 15 minutes to complete the form.

An oncology specialist and oncology research nurses validated the questionnaire. A pilot test of the tool, using 40 Omani women, determined its validity, reliability, and application. Following the pilot study, some questions were reworded and two questions were added.

The Cronbach's alpha reliability of the tool was r=0.81. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 19. Descriptive statistics were used for quantitative variables and frequency, and percentage for categorized variables.

Ethical clearance was given by the Research and Ethical Review and Approve Committee, Ministry of Health, Muscat.

RESULTS

A total of 369 Omani women participated in the study. The majority of the study participants were in the 20–30 year old age group (73%). More than half of the participants were single (52%), and nearly half were married (47%). One-third of the participants (31%) had one to five children, and 6% had more than five children. More than half of the women had a postgraduate degree (52%), 38% had primary and secondary education, and only 2% were illiterate. Nearly half of the participants were employed part-time or full-time (4% and 40%, respectively). Nearly a fifth (17%) of participants had a family history of breast cancer [Table 1].

The distribution of the women's knowledge scores were as follows: 19% had poor knowledge (score one to four); 59% had average knowledge (score five to eight); 21% showed good knowledge (score nine to 12); and 1% had excellent knowledge (score 13 to 16) [Figure 1].

The most common breast cancer symptoms given [Table 2] were breast lump (43%), change in shape of the breast (13%), and change in shape of the breast

Table 1: Demographic characteristics of women (n=369).

Variables	Frequency (*f*)	Percentage (%)
Age groups (years)		
20–30	270	73
31–40	68	18
41–50	24	7
51–60	7	2
Marital status		
Single	190	52
Married	174	47
Divorced	5	1
Number of children		
No children	43	12
1–5	113	31
More than 5	23	6
Not applicable	190	51
Educational status		
Illiterate	6	2
Literate	24	7
Primary/secondary	142	38
Undergraduate	4	1
Postgraduate	193	52
Occupation		
Unemployed	208	56
Part-time	13	4
Full-time	148	40
Family history of breast cancer		
Yes	64	17
No	305	83

Table 2: Respondents' awareness and knowledge of breast cancer symptoms and treatment (n=369).

Variable	Frequency (*f*)	Percentage (%)
Most common symptoms of breast cancer*		
Breast lump	172	43
Pain and discharge	22	6
Change in shape of breast	52	13
Breast lump and change in shape	31	8
Breast lump, pain, and discharge	20	5
Change in shape, pain, and discharge from nipple	4	1
Change in shape of breast and discharge from nipple	52	13
Don't know	45	11
Screening program for breast cancer		
Yes	69	19
No	300	81
Have you heard about breast self-examination		
Yes	227	62
No	142	38
Have you heard about mammography		
Yes	34	9
No	335	91
Risk factors for breast cancer		
Family history	92	25
Exposure to radiation	89	24
Nulliparity	13	4
Family history and exposure to radiation	30	8
Nulliparity and exposure to radiation	4	1
Nulliparity and family history	4	1
Family history, exposure to radiation and nulliparity	3	1
Don't know	134	36
Treatment for breast cancer		
Yes	131	36
No	238	64
Spread of breast cancer to other parts of the body		
Yes	185	50
No	184	50
Awareness of Oman Cancer Association		
Yes	124	39
No	225	61
If you know OCA: Source of information (out of 124)		
Friends	27	22
Newspaper	34	27
Television	46	37
Relatives	17	14

The participants could choose more than one response and the percentages are based on total responses.

and discharge from the nipples (13%). Eleven percent were unaware about any of the breast cancer symptoms. Awareness about screening programs for breast cancer was low with 81% unaware of any screening program and 91% aware of mammography; however, 62% of woman had heard about BSE. Nulliparity was believed to be a risk factor for breast cancer by 4% of women, other risk factors given were exposure to radiation (24%), and a family history of breast cancer (25%). Over a third of women (36%) do not know of any risk factors.

Fifty percent of women did not know that breast cancer could spread to other parts of the body. Only 39% were aware of the Oman Cancer Association. Of those 39% of women, the sources of information were television (46%), newspaper (34%), friends (27%) and relatives (17%).

Among the variables, education was significantly related to the higher knowledge level of breast cancer and its symptoms ($p=0.002$, $p<0.050$). Family history of breast cancer ($p=0.000$, $p<0.010$) also showed a significant association. All other variables showed no significant association with knowledge level [Table 3].
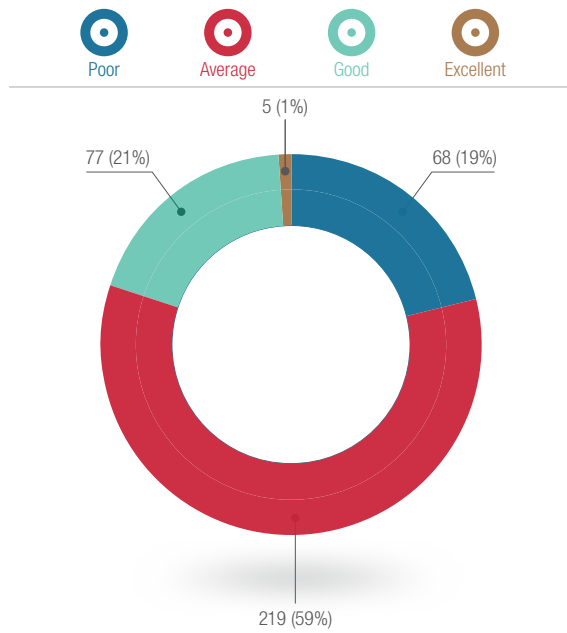
Figure 1: A pie chart illustrating the knowledge score of Omani women asked about breast cancer symptoms and treatment. A score of one to four indicated poor knowledge, five to eight, average knowledge nine to 12, good knowledge, and 13 to 16, excellent knowledge (n=369).

Table 3: Association between entered variables and breast cancer knowledge score.

Variables entered	Chi-square value	Significance (p)
Women's age	7.104	0.626
Marital status	1.971	0.922
Number of children	26.798	0.172
Educational status	31.749	0.002
Occupational status	8.410	0.210
Family history of breast cancer	30.246	0.000

DISCUSSION

This study revealed that there was lack of knowledge and awareness of breast cancer symptoms among Omani women with 78% reporting poor or average knowledge. Deeper analysis found 50% of the women were unaware of the signs and symptoms, screening methods, and the risk factors of breast cancer. This study also showed that women had inadequate knowledge about other breast cancer symptoms such as nipple retraction, and skin changes, which are warning signs of breast cancer. The lack of awareness and knowledge of breast cancer among Omani women may be the link between the increasing number of cases, late diagnosis of the disease and its poor prognosis.

Data was collected only from the Muscat region, where the majority (52%) of participants had completed higher education. This study suggests that there is an urgent need for a breast health awareness campaign across the capital. There is no available data on knowledge and awareness of breast cancer among the rural women, although the assumption would be that the education level of the rural women population would be less than those living in urban areas, and their awareness and knowledge would also be lacking. Any awareness campaign should be conducted across the country.

Our findings are consistent with a study from Saudi Arabia, which found that the awareness and knowledge of breast cancer among university students, with regard to early warning signs, screening programs, and risk factors, was inadequate.[15] In Iran, 1402 women were interviewed and only 61% of respondents knew about BSE.[13] BSE helps the women to report any differences or changes from the normal, and although there is controversy regarding this screening method as preventive measure, still it remains a method of choice for early identification of breast cancer in developing countries.

In a recent study, the contribution of mammography to the decrease in mortality in Norway was estimated to be only about 10%, with the remainder of the 28% decrease ascribed to a time effect, presumed to be the result of increased breast cancer awareness.[16] The importance of screening for mammography has been emphasized by other researchers.[17,18] In the UK and USA, effective education and screening have saved between 12 and 37 lives per day, respectively.[19] Breast cancer screening behaviors are key to lowering mortality from breast cancer in women but screening modalities are still underutilized by the majority of women.[19-22] In Nigeria, a study of patients with breast cancer revealed that the overall survival rate was low and survival was better among patients with early breast cancer than those with advanced disease. Furthermore, it recommends improving public enlightenment of breast cancer, and screening centers to encourage early diagnosis.[23] In our study, 25% of the women were aware that family history of breast cancer is the risk for breast cancer and 24% were aware that radiation exposure was a risk factor. However, 36%

were unaware of any risk factors of breast cancer. The knowledge of risk factors such as early menarche, late menopause, obesity, oral contraceptive pills were not understood by the participants.

Patients aware of the Oman Cancer Association had found out through television and newspaper advertisements, or via friends and relatives. None of the participants reported receiving information on breast cancer from healthcare workers, which was alarming. It is important to note that healthcare workers have a major role to play in educating public on breast cancer.

As most women are unaware of the symptoms of breast cancer, there is a need for education and encouragement to go for screening to aid in early identification. This concept was emphasized by a study which found that, in Oman, failure to detect breast cancer at early stages impacted negatively on patient survival, caused significant physical and psychological morbidity, and increased financial expenditure at the national level.[24] There is consistent evidence that breast cancer awareness contributes to earlier identification and reporting symptoms.[25]

Studies in Oman show that woman still present with advanced stages of disease at a relatively young age. Mass education and establishment of screening programs are basic ways to decrease the disease burden and enable diagnosis at an earlier stage.[6] Many campaigns need to take place in both urban and rural areas. The topic of breast cancer screening and awareness should be included in the high school syllabus and the collegiate curriculum. Videos played in the waiting areas of hospitals and health centers would benefit women visiting, as well as the availability of pamphlets to take away and read. Mass media also needs to take up an important role in raising awareness by advertising frequently in the newspaper, and by having announcements and live shows on television and radio. Flyers, banners, and posters placed in public places like shopping malls, airports, and exhibitions centers would also help to raise awareness. Furthermore, health educators and other healthcare professionals in primary health centers need to take up a major role in educating the women who are visiting the health centers on a daily/weekly basis. Women over the age of 40 should have a mammography.

The limitations of the current study include that the surveys were carried out in only a few health centers and shopping malls, and the use of the convenient sampling technique used to select the women. Moreover, the standardized tool was not used, however, the current tool was modified from a standardized tool, which was validated and reliability found to be acceptable. Finally, the study was limited to assessing the knowledge of breast cancer symptoms among Omani women.

CONCLUSION

The current study result shows that there was a lack of awareness and knowledge of breast cancer among Omani women living in Muscat, which has a more educated population than the rural areas of Oman. We recommend an extensive study in the rural areas of the country with a greater sample size to make the result more generalized. A program aimed at increasing the awareness of breast cancer and the importance of regular breast screening is needed to reduce the mortality and morbidity among Omani women.

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