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Research Article

Breast Cancer Awareness and Knowledge among Females: A Pilot Study in Al-Buraimi Region, Sultanate of Oman

Huria Rashid Mohammed Al Harrasi[1], Nasiruddin Khan[1]*, Rafia Khatoon[2], Shalina Shaikh[3], Sajid Hussain[1], Shahana Bashar[1], Vandita Singh[1], Mohanad Osman Adam Bashari[1] and Syed Sikander Hasan[1]

[1]College of Applied and Health Sciences, Department of Food Science and Human Nutrition, A'Sharqiyah University, Sultanate of Oman

[2]Department of Applied Sciences, University Polytechnic, BGSBU, Rajouri, India

[3]Department of Science, Nowrosjee Wadia College, Pune, India

***Corresponding Author**: Nasiruddin Khan, College of Applied and Health Sciences, Department of Food Science and Human Nutrition, A'Sharqiyah University, Sultanate of Oman.

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Abstract

The incidence of breast cancer (BC) is increasing in middle east countries including Oman. Early detection and diagnosis are likely to help in its treatment and favor survival rate. The present study aims to study the awareness and knowledge of BC among females. One hundred and twenty-one females (19 - 45 years of age) completed an online questionnaire regarding knowledge, and awareness about BC. Majority of the participants were literate (96.7%) and well informed about BC. However, based on their high education percentage, a considerable proportion of respondents showed a lack of awareness and updated information regarding BSE, gender difference, and use of saturated fat (37.2, 38, 57% respectively).

Respondents showed a positive opinion about hormone imbalance and medical radiation as causative factors of BC (87.6 and 65.3%, respectively). However, most of them (60.8%) lack knowledge about other important causes of BC. Among all, 66.9% disagree that there is no cure for BC, while 33.1% think that BC has no treatment, showing their limited awareness. Specific training programs and health awareness campaigns about the cause, risk factors and BC screening practice could help to increase the knowledge and fill the gap between education and awareness among females.

Keywords: *Breast Cancer; Knowledge; Awareness; Oman*

Introduction

Breast cancer is a disease causing cell within the breast to grow out of control. BC can occur in both males and females but are more common in females. Based on the World Health Organization (WHO) report the estimated death from BC is approximately 15% of all cancer deaths among women [1].

In recent years, majority of the middle east region has witnessed a tremendous increase in BC incidence rates among its women population establishing it as one of the leading causes of cancer death after lung cancer [2,3]. For instance, Saudi Arabia had witnessed a steady increase in the prevalence of BC diagnosis for the last 10 years [4]. From 1996 to 2015, over 21000 cases of cancer were registered among Omani population, with an average of 1050 cases/year [5]. The statistics of the ministry of health 2013 [6] showed BC as one of the most common types of cancer among Omani population (Table 1). Based on a recent report, the incidence rate of BC in 2015 is 26.9 per 100000 Omani women [7]. This high rate may be related to high distribution of the major risk factors related to reproductive factors, obesity, socio-cultural changes linked to an increase in westernized lifestyle and lack access to early detection and screening programs [8].

Topography	Frequency
Breast	159
Thyroid	120
Colorectal	109
Stomach	80
Non-Hodgkin Lymphoma	75
Prostate	73
Leukemia	68
Melanoma and other skin	59
Trachea, Bronchus, Lung	51
Bladder	45

Table 1: *Ten Most Common Cancers among Omanis (Males and Females) 2013. Adapted from Ministry of Health, Sultanate of Oman, Cancer Incidence of Oman 2013 [6].*

In Oman1294 cases of BC were reported in 2014 and 53.5% of them were below 50 years of age [9]. The environmental and lifestyle behaviors including smoking, diet, obesity, alcohol, sun exposure, physical activity, stress, pollution, and infections [10] are considered as the major contributing factor for the onset of BC. However, among these factors, the increased burden of obesity and nutritional shift (cultural diets to western food patterns) are the major cause of a steady increase in BC incidences in middle east countries [11,12]. In addition to above risk factors, some north African countries showed high incidence of BC among younger patients due to emerging reproductive behaviors, such as declining in number of children, the increased age at first pregnancy, and shorter duration of breastfeeding [13].

BC prevention is possible through dietary modifications [14]. Being a progressive disease, if BC is detected and diagnosed at early stage, it is likely to result in successful treatment and has a better survival rate than other cancers [15]. In light of above studies, to detect BC in its early stage, females of every age group need to have current awareness and knowledge regarding recommended screening methods and health consequences of BC. However, in this regard, lack of awareness about BC were reported among Arab women [16].

Taking into account that awareness and knowledge about BC could help reduce the burden of its incidence, its assessment is quite important in female population at regular interval. However, till date, there are very few studies in Oman assessing level of knowledge and awareness of BC among female population [17,18]. Our present pilot study aims to demonstrate the knowledge and awareness of BC among Al-Buraimi female population.

Materials and Methods

One hundred and twenty-one females (19 - 45 years of age) from Al-Buraimi region, Oman, completed an electronic questionnaire between 12th November 2019 and 7th January 2020.

The questionnaire was developed based on information collected from literature and contained three sections. Section one included age, educational qualification, and family history of BC, while section two assessed the knowledge and awareness about BC including risk factors, cause, symptoms, Breast Self-Examination (BSE) and possibility of its treatment. Section three included selected questions about diet behavior, use of medication and respondent's opinion about role of media and ministry of health (MoH) in BC education. The questionnaire was translated in Arabic language by expert Omani faculty members and revised by more Arabic speaking colleagues. The questionnaire was piloted for online completion, with appropriate format and layout. The pilot study was carried out upon twenty (20) female students from A'Sharqiyah University, College of Applied Health and Sciences, Ibra, to detect any difficulties that may arise during filling the questionnaire. The pilot study confirmed no difficulty in understanding the questionnaire. The pilot study participants and results were excluded from the original study. Finally, we used Google form to design the questionnaire format which included multiple-choice as well as the dichotomous type of questions. Further, we publish an online link for this questionnaire using What'sup application for the Al-Buraimi region. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 16. Descriptive statistics were used for categorical variables describing frequency distribution and percentage. Ethical clearance was obtained by the ethical research committee, A'Sharqiyah University, Ibra, Oman.

Results

Demographic characteristics

The majority of the respondents (65.3%) were in the age group 19 - 24 years. Most of them were literate (96.7%) having diploma (34.1%), bachelor (64.9%) and higher (0.8%) degrees, while only 3.3% were not educated. Among our participants, 21.5% had a family history of BC (Table 2).

Variables	Frequency (f)	Percentage (%)
Age		
< 18	2	1.7
19 - 24	79	65.3
25 - 30	25	20.7
31 - 35	10	8.3
> 35	5	4.1
Education level		
Illiterate	4	3.3
Literate	117	96.7
Diploma		
Yes	40	34.1
Bachelor		
Yes	76	64.9
Higher		
Yes	1	0.8
Family history of breast cancer		
Yes	26	21.5
No	95	78.5

Table 2: *Demographic characteristics of participants.*

Knowledge and awareness about risk factors and causes of BC

Figure 1 represents the percentage of participants responding to the cause and risk factors of BC. About 62% of the participants knew that both males and females are susceptible to the develop BC, the rest (38%) were unaware about it. Most respondents (62.8%) had knowledge about right way of screening (BSE), but 37.2% did not know of it. Around 66.9% of participants did agree that BC is more likely to develop in female who has reached the age of 30 years, while 33.1% of them disagree. More than half of the respondents (57.9%) agreed that mothers are at less risk to develop BC than females who have not given birth, whilst (42.1%) were against it. Respondents linked BC risk to sleeping habits and contraceptive pills (76 and 65.3%, respectively). Majority of respondents believed that hormone imbalance and medical radiation are causative factors in BC (87.6 and 65.3%, respectively). However, when asked about other major causes of BC, 60.8% of respondents didn't have any knowledge about it, while others chose high BMI, hormonal treatment and eating canned food as important cause of BC (10.7, 9.9 and 16.5%, respectively) (Table 3). The respondents (66.9%) disagree that there is no cure for BC, while 33.1% think that there is no solution to avoid this disease. Nearly all participants (90.1%) were aware that BC is not contagious.

Variables	Frequency (f)	Percentage (%)
Do you the following are other important causes for BC?		
High BMI	13	10.7
Eating canned food	12	9.9
Hormonal treatment	20	16.5
Don't know	76	62.8

Table 3: *Participants knowledge and awareness about other major causes of BC.*

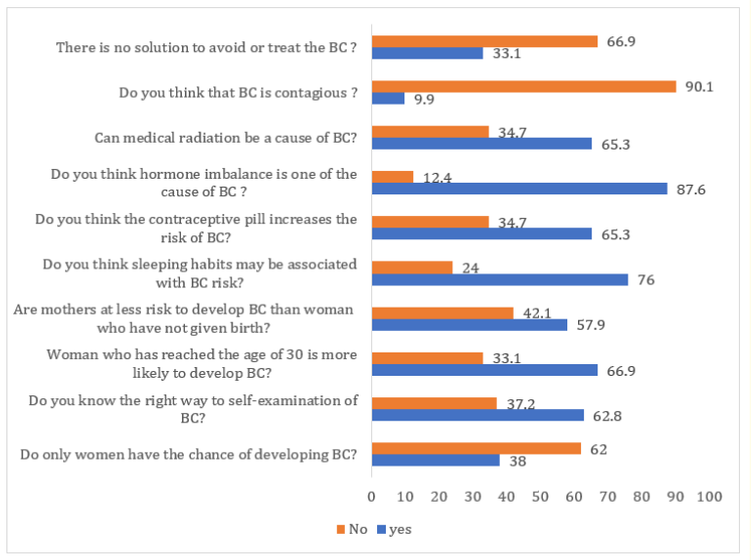

Figure 1: *Distribution of the study sample (%) according to their knowledge and awareness about cause, and risk factors of breast cancer.*

Diet behavior, use of medicine and opinion about media and MoH

Table 4 shows the responses among participants about diet behavior, use of Medication and opinion about Media and Ministry of Health. Regarding diet behavior, only 43% of participants responded positively when asked whether they refrain from saturated fat to avoid BC. When participants were asked about their eating habits, it was found that the percentage of fiber food intake (fruit, vegetable, whole grain bread and cereals) was higher on daily basis (74.4%), as compared to weekly (21.5%) and monthly (3.3%) basis. The frequency of canned food consumption was (6.6%) daily, (37.2%) weekly and (33.1%) monthly whereas 23.1% of them don't prefer using it. On another hand, the frequency of fast food consumption of participants was highest on monthly and weekly basis (36.4, 33.1%, respectively), whereas 14% eat it daily and 16.5% avoid eating them. The dairy product intake among participants was higher on daily basis (54.5%) as compared to weekly (34.7%), and monthly basis (8.3%). In our study, 110 out of the 121 participants didn't use any medicine, although some of them were on medication including diabetic (5%), hypertension (2.5%) and heart medicine (1.7%). The majority of the participants ranked the role of media and ministry of health as "good" in educating the society about BC.

Variables	Frequency (f)	Percentage (%)
Do you refrain from saturated fat to avoid BC?		
Yes	52	43
No	69	57
How many times you eat food high in fiber such as whole grain bread, cereals, fresh fruit and vegetable?		
Daily	90	74.4
Weekly	26	21.5
Monthly	4	3.3
Never	1	0.8
How many times you eat canned food?		
Daily	8	6.6
Weekly	45	37.2
Monthly	40	33.1
Never	28	23.1

How many times you eating fast food?		
Daily	17	14
Weekly	40	33.1
Monthly	44	36.4
Never	20	16.5
How many times you take dairy product?		
Daily	66	54.5
Weekly	42	34.7
Monthly	10	8.3
Never	3	2.5
Do Use any of these medication?		
Diabetic medicines	6	5
Hypertension medicines	3	2.5
Heart medicine	2	1.7
No medicine	110	90.9
How do you classify the role of different media in educating society about BC?		
Very good	48	39.7
Good	59	48.8
Bad	14	11.6
How do you classify the role of the ministry of health in educating the community about BC?		
Very good	44	36.4
Good	68	56.2
Bad	9	7.4

Table 4: *Participant's diet behavior, use of medication and opinion about media and ministry of health.*

Discussion

The present study demonstrated that the majority of our participants are well aware and have knowledge about BC. However, as compared to their high education frequency (96.7%), the knowledge and awareness among them is still limited and requires considerable improvement.

Around 66.9% of participants did agree that BC is more likely to develop in female who has reached the age of 30 years, while 33.1% of them disagree. More than half of the respondents (57.9%) were aware that mothers are at less risk to develop BC than females who have not given birth, whilst (42.1%) lack this awareness at all. In Gulf Cooperation Council countries including Oman, most BC cases reported were among women younger than 50 years of age [9]. Although controversial, there are reports suggesting that breastfeeding reduces the BC risk [19]. The respondents in our present study were aware that BC risk increases with age and being mothers (breastfeeding) may reduce this risk. However, those who disagree for these questions (33.1, and 42.1%, respectively) need updated information.

In the Indian population, the major determinants of BC reported among males as well as females were low awareness and education about disease along with the non-availability of facilities for early detection and treatment [20]. Our study is partially consistent with

above observation demonstrating that although awareness and knowledge among majority of female participants are satisfactory lack of knowledge about few basic concepts (such as whether both the genders have a chance to develop BC and whether BC has no cure and treatment (38 and 33.1%, respectively)) is surprising. Moreover, the present study demonstrated unawareness about early detection measures of BC such as BSE among a considerable percentage of females (37.2%). This compels more efforts to disseminate updated education and awareness programs about BC among general population.

A variety of risk factors for BC have been well-established for its occurrence [8,10]. Our current study respondents were aware of causes and risk factors of BC with majority linking it to demographic factors (age), lifestyle behavior (sleeping), hormonal factors (contraceptive pills), and other factors like radiation. BC can be treated if detected in its earlier stage [15]. A report from Institute of Medicine (IOM) says that early detection is the most effective strategy to reduce the toll of BC [21]. Majority of our respondents agree that BC can be cured and treated but still there was a lack of an updated awareness among 33.1% of participants having opinion that BC is incurable.

Chlebowski RT and colleagues suggested that physical activity and healthy diet have a favorable influence on BC incidence [22]. A recent study demonstrated a positive association between total fat consumption and the increased risk of developing BC [23]. Fifty-seven percent (57%) of our respondents use dietary saturated fat indicating an informational gap among them. Although the frequency of consuming fast food and canned food was low on daily basis, it was quite high on weekly and monthly basis, suggesting a diversion towards unhealthy western food patterns.

The use of antihypertensive medication and its relation to BC risk is controversial. The results are inconsistent showing positive [24] and no associations [25] of such medicine use with BC. Similarly, there is no clear evidence about a direct relation between antidiabetic drugs and cancer [26].

The health authorities including the ministry of health, and health professionals always play an important role in increasing awareness and encouraging its population to adopt preventive measures and follow healthy lifestyle to cope with diseases like BC. Today, social media (Twitter, Facebook, and Instagram) and other mobile health (mHealth) technologies have been used to raise BC awareness including screening programs such as self-exam and mammograms, benefits of early detection, and modifiable risk factors [27,28]. Supporting above reports, the participants expressed satisfaction about the role of social media and ministry of health in educating the community about BC.

Conclusion and Limitations

The majority of female participants are well informed about BC. However, the considerable proportion among them lacks various information (such as proper use of BSE, the gender difference in BC occurrence, treatment option for BC and recent diet information such as the association of saturated fat with BC). To fill this gap of a discrepancy between good education level and lack of awareness requires specific training programs, community health education, and promotion of health awareness campaigns about BC. The results of the present pilot study must be interpreted with few limitations. First, the nature of its study, the sample size is very small does not represent the all-female population from the Sultanate of Oman. Second, since the respondents were asked only selected questions (narrow spectrum) about BC, it could limit the potential to reveal the actual level of knowledge and awareness among participants.

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