Assessment of knowledge, attitudes and practices of women on breast cancer detection, screening and breast self-examination: A public awareness study.

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Abstract

Background: Breast cancer (BC) has a major impact on women's health worldwide. The Kingdom of Saudi Arabia is no exception, where it is considered the most common malignancy, embodying the second leading cause of cancer deaths after lung cancer. In today's world, people are more health conscious and more aware of different medical specialties. Despite the tremendous advancements in education, there seems to be a limited knowledge among the public regarding this issue.

Objective: The present study aims to assess the breast cancer awareness and its screening measurements among the common population. This study also evaluates the knowledge about Breast Self-Examination (BSE) and their opinion about its effectiveness in early diagnosis of breast cancer to detect the relationship between awareness and socioeconomic status.

Methodology: This study is a cross-sectional prospective study with a sample of 202 female participants evaluated by questionnaire given to female attending lecture about breast cancer awareness in October 2018 in Jeddah, Saudi Arabia. The selection of participants was based on the simple random sampling method.

Results and conclusion: The present study showed little awareness of BSE, mammography screening and clinical breast examination. However, breast cancer awareness was found to be quite optimal suggesting increasing knowledge of breast cancer awareness among Saudi females.

Introduction

Breast cancer (BC) is a common problem worldwide and is one of the major cause of death in females [1,2]. It is a type of cancer that originates in the breast tissue ranging from non-invasive to metastatic carcinoma. According to the International Agency for Research on Cancer, approximately, 2.1 million breast cancer cases were diagnosed in females worldwide in the year 2018 [3]. Breast cancer cannot be prevented, however its risk can be reduced and can be treated if detected at an early stage [4,5].

Evidence suggests that various factors are linked with the delay in seeking care and establishment of early diagnosis thereby making the treatment less effective. These factors include lack of public awareness about breast cancer symptoms, its mechanism of prevention, risk factors and treatment options [6,7].

One of the most essential factors that determines prognosis is early diagnosis of breast cancer. This increases the treatment efficacy and survival rate of breast cancer patients. Various methods like breast ultrasound, mammograms, clinical examinations and breast self-examination (BSE) has been suggested to help with early diagnosis. Screening of breast

cancer is quite effective technique to decrease the morbidity and mortality associated with breast cancer. Various screening approaches such as clinical breast examination, self-breast examination and mammography are suggested to be beneficial in early screening and early detection of breast cancer and in improving women's health [8].

Cancer-screening tests have greatly shown to decrease mortality in breast cancer patients [9]. According to the American Cancer Society (ACS), clinical breast examination (CBE) and mammography has been suggested for the early diagnosis of breast cancer [10]. Due to lack of knowledge and awareness of breast cancer in the society, many women fail to early diagnosis and treatment opportunities thereby conquering advanced stages of this disease [11].

Breast self-examination (BSE) is a practice of monthly palpation continually to a rigorous set method carried out by the female at the same time of each month [12]. In combination with improved breast awareness, BSE allows women to increase their perception of vulnerability to the risk of breast cancer [13]. This encourages them to participate in effective screening procedures which enable early breast cancer diagnosis and subsequent decrease in mortality.

Thus, it is essential to evaluate the existing knowledge and procedures linked with breast cancer and its screening in the common population. This will enable one to carry out effective health promotion strategies for decreasing breast cancer mortality that arises from improper health related activities and poor screening. The aim of the present study was to assess the public awareness about breast cancer, screening and breast self-examination among females in Jeddah, Saudi Arabia.

Patients and Methods

This study is a cross-sectional prospective study performed by distributing validated questionnaire to evaluate the female participant's knowledge about the public awareness of breast cancer. A total 202 female participants were evaluated about the awareness using multiple questions related to the sample knowledge of the risk factors of breast cancer, breast self-examination and other questions. The selection of participants was founded on the simple random sampling method.

Results

Table 1 shows the personal data of the participants. Results show that the majority of the sample where Saudi represents were 94.1% of the sample, while 5.9% of the sample is distributed on the other nationalities (Figure 1).
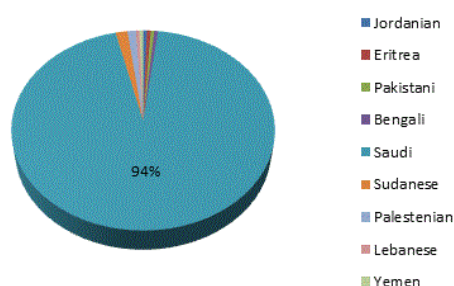

Figure 1. Sample distribution by nationality.

32.8% of the sample were under the age group of 25 years and 21.7% of the sample are over 40 years, while 18.8% of the sample aged between 35 to 40 years. About 15.2% of the sample aged between 25-30 years and 11.1% between 30-35 years (Figure 2).
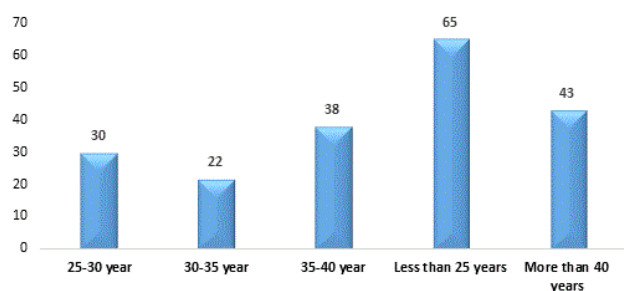

Figure 2. Sample distribution by age.

Table 1. *Personal information.*

Personal Data		No.	%
Nationality	Saudi	175	94.1
	Non-Saudi	11	5.9
Age in years	25-30 year	30	15.2
	30-35 year	22	11.1
	35-40 year	38	19.2
	Less than 25 years	65	32.8
	More than 40 years	43	21.7
Age at puberty	9 years	2	1.2
	10 years	10	6.1
	11 years	13	8
	12 years	32	19.6
	13 years	44	27
	14 years	25	15.3
	15 years	27	16.6
	16 years	6	3.7
	17 years	1	0.6
	18 years	1	0.6
	23 years	1	0.6
	24 years	1	0.6
Height		155.75 cm	
Weight		63.90 kg	
Marital status	Married	113	57.1
	Unmarried	78	39.4
Nationality and marital status	Saudi and Married		55.6
	Saudi and Single		40.4

27% of the sample reached puberty when they were 13 years old and 15.3% of the sample reached puberty at the age of 12 years old. More than 69% of the sample reached puberty in the age between 11 to 15 years old and the average age for the sample to reach puberty is 13.19 years old (Figure 3).
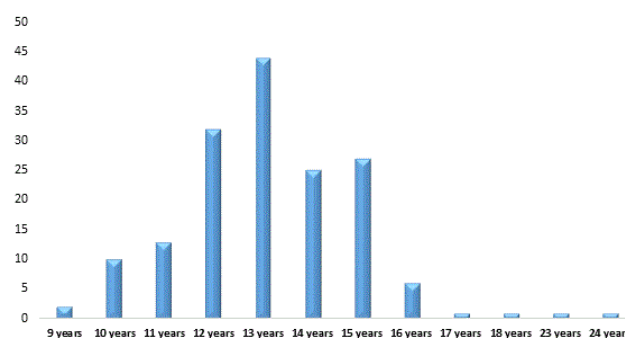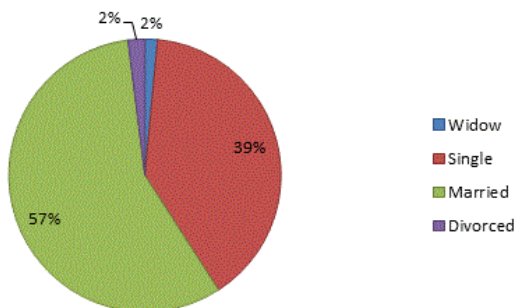

*Figure 3: Sample distribution by age at puberty.*

Descriptive statistics for the sample weight and height shows that the average weight in the sample is 63.9 kg and the average height of the sample is 155.75 cm, while the minimum weight is 30 kg and maximum weight is 149 kg. 57.1% of the sample are married whereas 39.4% of the sample are Single (Figure 4).

Figure 4. Sample distribution by marital status.

Table 2 shows sample distribution of various variables. Sample Distribution by nationality and marital status suggest that 40.4% of the Saudi in the sample are single and 55.6% are married. Descriptive statistics for number of children for those who are married and have children shows that the average number of children by respondent is 5 children's. The average age for the sample who are married and have children is 20 years old while the minimum age is 13 years old and the maximum is 35 years old. People those who are married and have children, out of them 83.1% of them breastfed while 16.9% didn't (Figure 5).
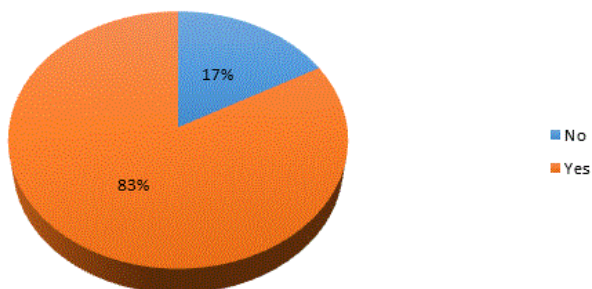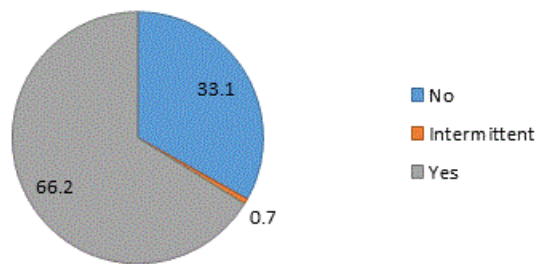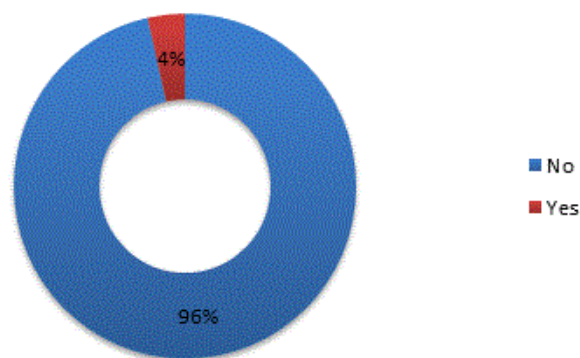

Figure 5. Sample distribution by breastfed.

Sample distribution concerning usage of birth control method shows that 33.1% of the sample didn't use any birth-control method compared to 66.2% used a birth-control method and for those who have used a birth-control method used it for an average of 4 years (Figure 6).

About 96.5% of the sample who answered the question hadn't a breast biopsy done, compared to 3.5% who had a breast biopsy (Figure 7).
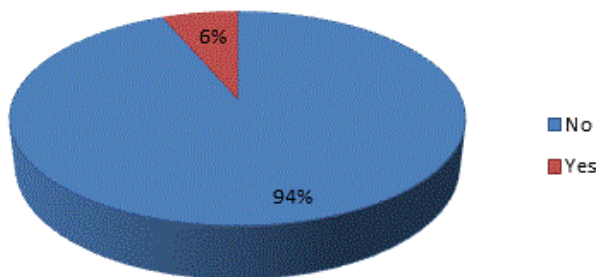
93.6% of the sample who answered this question didn't have any benign or malignant tumor compared to 6.4% who had a benign or malignant tumor (Figure 8).

Figure 6. Sample distribution by using a birth control method.

Figure 7. Sample distribution by breast biopsy.

Figure 8. Sample distribution by having benign of malignant tumor.

Sample distribution by family history of breast cancer patients show that 13% of the sample who answered the question have one or more in their families who had breast cancer, compared to 87% who didn't have any member of their family that have a breast cancer. And for those who have a member of their family that have a breast cancer having one patient on average, while the maximum patients in the same family is 4 and the minimum is 1 and 13.6% of the them was their Grandma, 22.7% is the daughter of their mother's aunt and 18.2% is their direct aunt from the father side. For those who had a member in their family having breast cancer 87.5% of their relative with a breast cancer the cancer was in one breast while 12.5% of them were in both breasts.

Table 2. Sample distribution.

Personal Data		No.	%
Nationality and marital status	Saudi and Married	95	55.6
	Saudi and Single	69	40.4
Age when having first child	Minimum	13	
	Maximum	35	
	Average	19.92	
Breastfed	Yes	103	83.1
	No	21	16.9
Birth control method	Yes	92	66.2 period of 4 years
	No	46	33.1
Breast biopsy	Yes	6	3.5
	No	164	96.5
Benign/Malignant tumor	Yes	11	6.4
	No	161	93.6
Family history of Breast cancer	Yes	25	13
	No	168	87
Relative relation	Grandma	3	13.6
	Daughter of their mother's aunt	5	22.7
	Direct aunt from fathers side	2	18.2
Tumor in one or more breasts	Single	21	87.5
	Both	3	12.5

To assess the awareness about breast cancer among the sample we used a set of multiple questions, each question assesses one aspect of breast cancer awareness as shown in Table 3.

Results show that 93.4% of the sample are non-smokers compared to 6.6% of the sample who are smokers. 12% of the sample has been exposed to a radiation while 88% of the sample were not exposed.

Results also show that any relative in their family who had a tumor in their uterus represents 61.5%, in colon 30.8% and in ovary 7.7%. 14.8% of the sample do eat herbs or soybeans compared to 85.2% who did not.

Table 4 gives an overview of self-examination related to breast cancer. Results show that 76% of the sample who answered the question are not doing breast self-examination compared to 24% who do a breast self-examination.

Results also show that 85.4% of the sample who answered the question are not going for clinical breast examination periodically for breast cancer, and when we asked why, the majority of the sample stated that they don't know how to check or they forgot about checking or neglecting or they didn't complain from anything. 80.6% of the sample who answered the question were never examined for breast cancer

by a doctor compared to 19.4% who were examined by a doctor before.

Moreover, 90.5% of the sample never had a mammogram screening and 92.7% never had a breast ultrasound.

Table 3. Risk factor of breast cancer awareness.

Personal Data		No.	%
Do you smoke	No	185	93.4
	Yes	13	6.6
Have you been exposed to radiation	No	161	88
	Yes	22	12
Any one in your family have a tumor in colon uterus or ovary	uterus	8	30.8
	colon	16	61.5
	Ovary	2	7.7
Do you eat any kind of herbs or soybeans	No	155	85.2
	Yes	27	14.8

Table 4. Breast self-examination.

Personal Data		No.	%
Are you doing breast self-examination	No	136	76
	Yes	43	24
Do you check periodically	No	140	85.4
	Yes	24	14.6
Have you ever been examined for breast cancer by a doctor	No	154	80.6
	Yes	37	19.4
Mammogram screening	No	171	90.5
	Yes	18	9.5
Breast Ultrasound	No	177	92.7
	Yes	14	7.3

In Table 5, results show that 12% of the sample believe that a biopsy from breast mass leads to the spread of the tumor compared to 88% did not believe. 97.4% of the sample didn't think that breast cancer is contagious, while 2.6% of the sample thought it was, and 86.4% of the sample believed that breastfeeding prevents breast cancer compared to 13.6% who thought there was no relation.

Results also show that 39.7% of the samples think that the breast cancer incidence rate is 1 out of 8, and 37.5% of the sample think that the breast cancer incidence rate is 1 out of 25, and 22.8% of the sample think that the breast cancer incidence rate is 1 out of 75.

Table 5. General information.

Personal Data	No.	%

Taking a sample of the breast leads to the spread of the tumor	Wrong	161	88
	Correct	22	12
Do you think breast cancer is contagious	No	186	97.4
	Yes	5	2.6
Do you think breast feeding prevents breast cancer	No	26	13.6
	Yes	165	86.4
As per your knowledge what is the breast cancer incidence rate	1 of 75 women	42	22.8
	1 of 25 women	69	37.5
	1 of 8 women	73	39.7

Discussion

With the increasing incidence of breast cancer globally, and with many recent efforts to increase breast cancer awareness in Saudi Arabia, it is necessary to assess the existing knowledge and training of breast self-examination among Saudi females. Breast cancer awareness aims to inculcate and spread the knowledge of breast cancer in females, and stresses on the significance of breast self-examination. This would result in early diagnosis, and is more likely to decrease the incidence of breast cancer mortality. Awareness of breast cancer and breast self-examination is known to improve the health of females due to early reporting of symptoms, breast cancer screening thereby increasing the survival rate. Lack of breast cancer awareness is associated with late reporting of symptoms and hence higher mortality [14,15].

According to the present study, breast cancer awareness and BSE was found to suboptimal among Saudi females. This is in accordance with previous studies [16-18]. With respect to the risk of breast cancer, only a few of them answered that they smoke and less than quarter of them were previously exposed to radiation.

Among the various types of screening methods, BSE is the best way and is the most cost-effective procedure, if women have adequate knowledge. BSE is an effective tool for the detection of breast cancer at an initial stage [19,20]. It was reported that most females can detect breast cancer by breast self-examination, thereby having a better diagnosis and treatment [21]. Many studies have shown that most women do not have much knowledge about BSE and some of them who have knowledge about this method do not carry out it regularly [22-24]. According to the present study, less than half of the participants performed breast self-examination and few of them check periodically. Mammography screening is another screening tool for breast cancer diagnosis. It has been suggested that screening by mammography can decrease the breast cancer mortality 25% in females aged over 50 years [25]. Breast ultrasound is relatively and common method for breast cancer screening. It is an optimal method while assessing women aged under 40 years [26]. In the present study, it was found that only a quarter of the participants were examined by the doctor for breast cancer and only few of them underwent mammogram screening and breast ultrasound which was quite low. This is in accordance with the previous study of Dandash et al. [27].

In contrast, breast cancer awareness among the population was found to be quite significant. 88% believed that taking a sample of the breast does not lead to the spread of the tumor and a very few of them answers that breast cancer is contagious. Most of them knew that breast feeding prevents breast cancer. The present study showed quite a good response of breast cancer awareness as reported by the earlier study conducted in Jeddah, Saudi Arabia [28].

Conclusion

In conclusion, the present study showed little awareness of BSE, mammographic screening and clinical breast examination. However, in terms of breast cancer awareness, the results were quite good suggesting increasing knowledge of breast cancer awareness among Saudi females. As only a few females did mammogram screening and breast ultrasound, several measures need to be taken in order to increase awareness on BSE among the population.

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