ORIGINAL ARTICLE

Knowledge, attitude, and practice of breast cancer and breast self-examination among female detainees in Khartoum, Sudan 2018

AHMED OSMAN AHMED MOHAMED[1], MUNEER MAKKI MUSA NORI[1], ALMEGDAD SHARAFALDIN MOHAMED AHMED[1], RANDA AHMED ABDALRHEEM ALTAMIH[1], EZZAN SAEED MOHAMED KUNNA[2]
[1] Faculty of Medicine, University of Khartoum, Khartoum, Khartoum, Sudan; [2] Department of International Health, Institute of Tropical Medicine-Nagasaki University, Nagasaki, Japan

Keywords

Breast cancer • Prevention • Breast self-examination • Awareness • Detainees

Summary

Introduction. *Breast cancer is the common cancer among females and a leading cause of mortality among them globally, its rates are three times higher in developing countries. Breast self-examination (BSE) had an important role in early detection, increasing the survival rate of breast cancer patients, despite these benefits, the rates of practicing BSE are low, especially in developing countries.*
Objective. *To assess the levels of awareness about breast cancer, and BSE among the detainees of Dar-Altaebat facility, a female's detention facility in Khartoum, Sudan.*
Methods. *A cross-sectional study conducted at Dar-Altaebat a female imprisonment facility in Khartoum, Sudan. 354 participants were randomly selected from the total population of the facility. Data was collected using a self-administered structured questionnaire, which was composed of socio-demographic section, knowledge section, attitude section, and breast self-examination section. Data was analyzed using statistical package for social sciences(SPSS) software.*
Results. *330 participants responded to the questionnaire, their mean age was (31, SD: 11.2) years, 126 (38.2%) of them were illiterate, 196 (59.4%) were married, and the majority of them 177 (76.3%) were housewives. their overall knowledge score revealed that 185(56.2%) of them had poor knowledge about breast cancer. 218 (66.3%) of them had poor knowledge about breast self-examination, however 314 (95.3%) thought that it was important. 315 (95.5%) of the participants had poor practice towards breast self-examination.*
Conclusion. *Poor levels of knowledge about breast cancer were reported among the detainees. Additionally, their level of knowledge and practice of breast self-examination was also low, thus more health education campaigns are recommended in such facilities.*

Introduction

Breast cancer is the most prevalent cancer among females globally, encompassing nearly a quarter of diagnosed cases among females, since 1.15 million cases are diagnosed annually around the world [1-3]. Breast cancer is common in both developed and developing countries. Nevertheless, its rates are three times higher in developing countries [4]. Breast cancer is a leading cause of mortality among females in Africa [5]. According to studies 1:6 women worldwide undergo breast biopsy, most reported cases are benign changes yet cases with malignancy are many, breast diseases range from inflammatory changes, benign fibroblastic to fibrocystic changes and malignant diseases [6], risk factors include age, early menstruation, late menopause, family history of breast disease, usage of hormonal replacement therapy, breastfeeding state and lifestyle habits [6-9].
Early-onset of the disease and poor prognosis has been reported more among African populations compared to Caucasians [8]. It is estimated that 70-90% of breast cancer cases present with late-stages in African countries, which is a cause of decreasing survival probabilities among patients [10]. The lack of early detection in Africa has been linked to the scarcity of resources [11]. In Africa generally, breast cancer is higher in Sub Saharan region especially in Sudan where the number of new cases is increasing steadily [7]. In Sudan, breast cancer is the third most common cancer in the country, and the most common among females [12, 13].
Studies have shown that breast cancer screening programs like mammography, breast self-examination (BSE), and breast clinical examination (BCE) had an important role in early detection, increasing the survival rate, decreasing fatality, and preventing recurrence among breast cancer patients [14-16]. BSE is recommended by the American cancer society, it has been reported that women who practiced BSE regularly were more likely to present with early stages of the disease, this is due to the fact that regular BSE familiarizes the female with feel and appearance of the breast, and thus she will be more able to detect any change as early as possible [17]. Nonetheless, the implementation of such programs in Africa is challeng-

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ing due to the lack of adequate substructure, trained personnel with regard to financial barriers [18].
Evidence suggests that practicing BSE depends on different factors including females' knowledge, attitude, socio-demographic and sociocultural factors [19]. Other reasons for low rates of practice have been reported including lack of time, forgetfulness, and low level of education [20]. In Sudan, results from a previous study concluded that there are insufficient knowledge and practice of BSE among medical students [21].

Methods

Study settings

This was a facility-based, descriptive, cross-sectional study, conducted at *Dar-Altaebat* Prison which is a female's imprisonment facility located in Khartoum state and considered to be one of the largest female detention facilities in Sudan. This study was the first phase of a breast cancer prevention campaign conducted by SCOPH office. Detainees from all age groups and backgrounds were eligible to be included in this study.

Data collection tools

354 participants were randomly selected from the total population of the facility which is 820 persons, using a formula with prevalence of 0.5 and a confidence level of 95, by randomly picking 354 numbers out of 820 numbers list of the total population. Data was collected a self-administered structured questionnaire which was adopted from a previous study [26].
The questionnaire is divided into 4 sections; socio-demographic section, knowledge section, attitude section, and breast self-examination section. Nine items were used to assess the knowledge by asking about symptoms, signs, protective factors, diagnosis, risk factors and curability, and three items were used for the attitude section. In breast self-examination section two items were used to assess the knowledge about breast self-examination by asking about the reasons, place, steps of self-examination, two items were used for the attitude, and three items for the practice.
Copies were handed in person to participants. Codes were used instead of names to ensure confidentiality. The Scoring for knowledge, attitude and practice for breast cancer and self-examination items was performed by a consultant oncologist. Data was collected during July-September 2018.

Data analysis

Statistical Package for Social Science 24.0 (SPSS) software was used for data entry and analysis. Categorical variables were presented as frequencies, and continuous Variables as means and standard deviations. Additionally, Chi-square test was used to test the association between categorical variables. P.value of less than 0.05 was considered statistically significant.

Ethical considerations

An ethical approval was obtained from the institutional review committee at the radiation and isotopes center in Khartoum (RICK). In addition, a written consent was taken from the prison administration and verbal consent was obtained from each participant before conducting data collection.

Results

Out of 354 selected detainees, 330 participants responded to the questionnaire with a response rate of 93%, their mean age was (31, standard deviation (SD): 11.2) years, and the ages of more than half of them 185 (56.7%) are from 18-30 years. 126 (38.2%) of them were illiterate and 124 (37.6%) had primary education. Regarding their marital status, the majority of them 196 (59.4%) were married. Additionally, 177 (76.3%) were housewives, Table I demonstrates the demographic characteristics of the study participants. About the participants' knowledge about breast cancer, the majority of them 201 (60.9%) agreed that breast cancer is the most common cancer among females, and 202 (61.2%) said that breast cancer is a curable disease. Moreover, nipple discharge was the most commonly chosen symptom by the participants 137 (41.5%), and smoking was the most commonly selected risk factor for breast cancer 175 (53%). Fur-

Tab. I. Demographic characteristics of the study participants.

	Frequency	Percentage
Age		
Mean 31 Minimum 13 Maximum 80		
Age groups		
18-30	185	57
31-40	89	27
41-50	34	10
More than 50	13	6
Educational level		
Illiterate	126	38.2
Khalwa	11	3.3
Primary	124	37.6
Secondary	31	9.4
University	31	9.4
Post-graduate	7	2.1
Occupation		
House wife	177	76
Employee	55	24
Marital status		
Single	63	19
Married	196	59
Divorced	42	13
Widowed	29	9

thermore, 175 (53%) of the participants did not know the methods of breast cancer diagnosis. The overall score of the participants' revealed that more than half of them 185 (56.2%) had poor knowledge about breast cancer, poor knowledge about breast cancer was significantly associated with low educational status (p-value: < 0.001), however it was not associated with the occupation of the participants (p-value: 0.82), and wasn't associated with neither their marital status (p-value: 0.05), nor their age (p-value: 0.22) Table II shows the participants knowledge about breast cancer. Regarding the attitude of participants towards breast cancer, only 92 of the participants responded to the questions, 87 (95%) of them thought that hospitals are the best places to receive treatment for breast cancer and neither the *Sheikh* (local traditional healer), nor alternative medicine centers. Respondents were asked about the time appropriate to seek doctors when they sense the presence of a lump in the breast, and the majority 74 (80%) of them said that they would go to the doctor immediately. Overall assessment of the participants revealed that 69 (75%) of them had a good attitude regarding breast cancer. Attitude of the participants was not associated with their Educational status (p-value: 0.45), occupation (p-value: 0.45), and marital status (p-value: 0.45).

When the participants were asked about breast self-examination, more than half of them 181 (54.8%) said that they have never heard about it, and of the people who have heard about it, 77 (51.3%) of them said that health education campaigns were their primary source of information about breast self-examination.

Tab. II. Participants knowledge about breast cancer.

Question	Frequency	Percentage
Breast cancer is the most common cancer among females?		
Yes	201	61
No	34	10
I don't know	95	29
Breast cancer is a curable disease?		
Yes	202	61
No	50	15
I don't know	78	24
Early diagnosis of breast cancer increases the chances of treatment?		
Yes	258	78
No	19	6
I don't know	53	16
Unequal breasts size after puberty is normal?		
Yes	209	63
No	89	27
I don't know	32	10
In most of the cases, breast cancer appears as non-painful lumps in the breast?		
Yes	195	59
No	30	9
I don't know	105	32
Normal breast feeding decreases the probability of acquiring breast cancer?		
Yes	153	47
No	64	19
I don't know	113	34
What are the symptoms of breast cancer?		
Axillary lymph nodes enlargement	127	39
Breast redness or change in color	128	39
Nipple discharge	137	42
Sever Weight loss	81	25
I don't know	123	37
Breast cancer can be diagnosed using:		
Tissue biopsy	81	25
Ultra sound	86	26
Mammography	53	16
I do not know	175	53
Risk factors of breast cancer include:		
Smoking	175	53
Alcohol	107	32
Aging:	89	27
Late menopause	58	18
Family history of BC	83	25
Obesity	63	19
Long term use of contraceptive pills	83	25
I don't know	116	35

The majority of the participants 218 (66.3%) had poor knowledge about breast self-examination, and poor knowledge was significantly associated with low educational status (p-value: < 0.001), with housewives as an occupation (p-value: 0.04), and with 18-30 years age group (p-valve: 0.004), however it was not associated with the participants marital status (p-value: 0.27). When the participants were asked about their opinion regarding breast self-examination the majority of them 143 (95.3%) thought that it was important, their attitude was neither associated with their educational status, occupation, marital status, nor their age (p-values: 0.91, 0.15, 0.19, 0.11, respectively). In addition, 315 (95.5%) of the participants had poor practice towards breast self-examination, and their practice was neither associated with their educational status, occupation, nor marital status (p-values: 0.07, 0.71, 0.06, respectively).

Discussion

Breast cancer prevalence is dramatically increasing every year and so both mortality and morbidity of the disease do [10, 13, 20], for this reason early detection which improves the prognosis is becoming more important [22, 23]. These facts reflects the huge role of appropriate knowledge and attitude of women in community regarding the disease and participating in screening programs specially in under-developed countries with limited health care resources like Sudan.

The mean age in this study was 31 (SD: 11.2) which gives a good presentation of the risk group of breast cancer. Other previous studies had similar age groups, 30 is the mean in the study (Delta state – Nigeria 2013) [10], and 31.3 (north Iran,2015), but higher ages in other studies, the mean age was 40.48 (Malaysia, 2010) [20], and 41 (Iran, 2018) and lower ages in other studies like in UAE with mean 23 [11]. Although all these ages are at risk for breast cancer [10], but the variation of age might affect the knowledge, attitude and practice of these women toward the disease.

The majority of our participants (60.9%) correctly answered that breast cancer is the most common cancer among females, and (61.2%) stated that it is a curable disease. comparing these results with a similar previous study in Nigeria [10], higher percentage (84.6%) confirmed the same facts, this might be due to increasing the number of awareness campaigns regarding the breast cancer in the previous years before this study.

Regarding the participants' knowledge about the disease symptoms, (41.5%) had chosen nipple discharge as the most common symptom however women of northern Iran had different opinions considering the presence of the breast mass as the most common symptom (75.4%) [23]. In addition, smoking was the most commonly selected risk factor of breast cancer (53%), however in another study it was the second most commonly chosen after alcohol consumption [23]. Furthermore, the overall participants' knowledge about breast cancer in this study was poor, and it was associated with low education status. This association was also suggested in other studies [10, 22, 23].

More than half of our participants never heard about breast self-examination (BSE) before, the same thing was observed in previous study held in Nigeria [10]. The main source of the participants information about BSE was breast cancer campaigns, few of them get some knowledge from the media. Television was considered as the main source of information among younger participants with tertiary level of education among students in the university of Buea in Cameroon [24].

Overall knowledge about BSE was poor (66.3% of the participants had poor knowledge), similar results were reported in other studies, participants showed poor knowledge in Nigeria and Malaysia with (82.3%) and (86.2%) respectively [10, 20]. The association between the level of education and level of knowledge regarding BSE was positively concluded in our findings, higher level of knowledge about the disease was associated with higher level of education, similar observation was noticed in other studies [10, 20, 24].

Poor practice was the most common result among the majority of the participants in this study (95.3%). It was noted that the participants' scores in questions regarding the knowledge about breast cancer general information like signs, symptoms and risk factors were as bad as their scores in BSE related questions. This was also noted in other study conducted in Nigeria [9]. In addition, a study conducted in Iran revealed that (74.8%) of women never practice BSE ever, and (9.8%) did the first breast examination after they felt pain in the breast [20], also (60.4%) was the percentage of community ignorance- specially the risk group- regarding BSE as it was found in Malaysian study [19]. Moreover, a study performed by Nde et al stated that only (30%) of university female students had practiced BSE at least once, however less than (3%) were practicing BSE regularly with monthly pattern [24]. So, all these studies agreed that there is a poor practice in general but with some degree of variation between communities due to different levels of education and breast cancer related knowledge.

Conclusion

One of the limitations of this study is that it took place in only one facility, which makes it difficult to generalize it's results over the larger population of inmates in Sudan. Despite this limitation, our results revealed that more than half of the participants had poor knowledge about breast cancer and self-examination. The majority of the respondents think about breast self-examination as an important issue but they have poor practice. Thus, we recommend more health

campaigns and educational sessions in such facilities. Additionally, educational broadcasts and mini-videos illustrating the steps of breast-self-examination ought to be delivered via these imprisonments' radios and televisions. Furthermore, more research projects are encouraged to address this issue in other amenities and geographical locations throughout Sudan, also a comprehensive breast cancer screening program is also recommended.

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Conflict of interest statement

The authors declare no conflict of interest.

Authors' contributions

AOAM: study design, data acquisition , data interpretation, and manuscript writing. MMMN: study design, data acquisition , data interpretation, and manuscript writing. ASMA: data management, data interpretation, and manuscript writing. RAAA: study design, data acquisition , data interpretation, and manuscript writing. ESMK: study design, data interpretation, and manuscript writing.
All the authors participated equally in all of the steps of this research.

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Correspondence: Almegdad Sharafaldin Mohamed Ahmed, Faculty of Medicine, University of Khartoum, Alqaseer avenue, B.O: 11111. Khartoum Sudan - E-mail: almegdadsharaf@gmail.com - Tel. +249116349417

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