



**KNOWLEDGE, ATTITUDE AND PRACTICE OF BREAST SELF-EXAMINATION
AMONG FEMALE UNDERGRADUATE STUDENTS AT UNIVERSITY OF KORDOFAN,
EL-OBEID CITY, NORTH KORDOFAN STATE, SUDAN, 2017.**

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ABSTRACT

Breast cancer is a global health concern and a leading cause of morbidity and mortality among women,^[25] It is the most common cancer among women in developed and developing countries.^[1] It has been identified as a major public health problem in both developed and developing nations because of its high incidence-prevalence, overburdened health system and added direct medical expenditure.^[26] A cross-sectional study was conducted to assess knowledge, attitude and practice of female undergraduate students toward breast self-examination at University of Kordofan, El-Obeid City, North Kordofan State, Sudan, which lasted from July to December 2017. A total of (373) registered female undergraduate students were selected, were participated (100% response rate). Filled a self-administered questionnaire that was selected using a proportionate stratified random sampling method, and a simple random sampling technique used to select sample size determined from each faculty. Data were analyzed using the Statistical Package of Social Sciences "version (22.0) software". The findings showed that all female undergraduate students had heard about breast cancer. However, only (77.7%) acknowledged that it was common in the population under consideration. (86%) of respondents reported that breast cancer can be detected early. (93%) of the respondents had heard about breast self-examination, the major source of information about breast self-examination (47.7%) was mass media (TV and Radio). The majority (90.3%) of them reported that BSE is important in the early detection of cancer, but only (45.6%) of respondents examine their breasts themselves, (48.3%) of them examine their breasts monthly and (18.8%) of them done examine their breasts by palpate with minimum of three fingers. Majority (80.2%) of the participants believed that breast cancer is curable disease and (11.3%) of them reported that it is fatal.

KEYWORDS: Breast self-examination, Kordofan, Breast cancer, Female, Undergraduate, Students

INTRODUCTION

Cancer is an important factor in the global burden of disease. The estimated number of new cases each year is expected to rise from 10 million in 2002 to 15 million by 2025, with 60% of those cases occurring in developing countries.^[1] Breast cancer is the most common cancer in women both in the developed and less developed world. It is estimated that worldwide over 508 000 women died in 2011 due to breast cancer.^[2] In India, breast cancer is the second most common cancer (after cervical cancer) with an estimated 115.251 new diagnoses and the second most common cause of cancer-related deaths with 53.592 breast cancer deaths in 2000.^[3] In Egypt, breast cancer it's the most common cancer among women, representing 18.9% of total cancer cases (35.1% in women and 2.2% in men) among the Egypt National Cancer Institute's series of 10.556 patients during the year 2001, with an age-adjusted rate of 49.6 per 100.000 people.^[4] Cancer

incidence and mortality in Sudan are still lacking, *the five most frequent tumour types were breast cancer, eukaemia, prostatic carcinoma, lymphoma and colorectal carcinoma in adults and leukaemia, lymphoma, eye tumours, sarcoma and brain tumours in children.*^[5] Although breast cancer is thought to be a disease of the developed world, almost 50% of breast cancer cases and 58% of deaths occur in less developed countries.^[6] Breast cancer is typically detected either during a screening examination, before symptoms have developed, or after a woman notices a lump. Most masses seen on a mammogram and most breast lumps turn out to be benign; that is, they are not cancerous, do not grow uncontrollably or spread, and are not life-threatening. When cancer is suspected, microscopic analysis of breast tissue is necessary for a definitive diagnosis and to determine the extent of spread (in situ or invasive) and characterize the type of the disease rick.^[7]

Early breast cancer stage is usually a symptomatic. As the tumor grows, main symptoms are breast lump or lump in the armpit that is hard, has uneven edges, and usually does not hurt. Also, change in the size, shape, or feel of the breast or nipple (redness, dimpling, puckering that looks like the skin of an orange, fluid from the nipple may be bloody, clear to yellow, green, or look like pus). On the other hand, the symptoms of advanced breast cancer may exhibit the following symptoms; bone pain, breast pain or discomfort, skin ulcers, swelling of the lymph nodes in the armpit and weight loss.^[8, 9] Breast cancer typically produces no symptoms when the tumor is small and most easily treated. Therefore, it is very important for women to follow recommended screening guidelines for detecting breast cancer at an early stage. There are many known risk factors for breast cancer, some of these cannot be changed, but some can. About 5% to 10% of breast cancer cases are thought to be hereditary, caused by gene changes (mutations) inherited from a parent. Being a woman is the main risk factor for developing breast cancer. Also, breast cancer risk increases as a woman gets older, women who have a close blood relative with this disease have a higher risk for breast cancer. A woman with cancer in one breast has an increased risk of developing a new cancer in the other breast or in another part of the same breast. Women who had radiation to the chest for another cancer as a child or young adult are at a much higher risk than those who did not.^[10] Early detection and diagnosis can greatly increase chances for successful treatment and thus increasing awareness of the possible warning signs of the disease among the general public is a necessity.^[11] The three screening methods recommended for breast cancer include breast self-examination (BSE), clinical breast examination (CBE) and mammography. BSE is a cost-effective method of early detection of cancer of the breast especially in resource poor countries. More than 90% of cases of breast cancer can be detected by women themselves, stressing the importance of breast self-examination (BSE) as the key breast cancer detection mechanism.^[12] The emergence of breast disease and the subsequent development of cancer tend to be more aggressive in young patients compared with breast cancer progressions in the older population.^[13] Also, there is a lack of knowledge about the benefits of BSE among young women. For this reason, the study conducted to identify the knowledge, attitudes and

practices of BSE among undergraduate female students in El-Obeid City, Sudan.

METHODOLOGY

A descriptive cross-sectional study design, carried out among female undergraduate students at University of Kordofan, El-Obeid City, North Kordofan State, Sudan. University of Kordofan is one of the nationalism universities which established in 1992. From the general population, the sample size was selected and taken proportionally from the study group.

SAMPLE TECHNIQUES

The sampling technique was employed is a stratified random sampling technique, in this method, the university is divided into stratifies or groups, and some of these are then chosen by systematic random sampling. The total number of female students is (12477) and percentage of students in each faculty was determined from the Students Affairs Division of the University and the sample size selected in proportion to the size of each faculty. Each student was randomly selected into the study sample using simple balloting. Female undergraduates who were unable to provide informed consent were excluded, male undergraduates were excluded and female undergraduates less than 16 years of age were also excluded. Hence, determined the total of sample size (373). Formula for obtaining sample size was:

Where; n = Sample size; $t = 0.5 = \{1.96\}$; SE = Confidence level (0.05); $p = 0.50$

A sample was taken proportionally from each faculty, as follow:

$$n_h = n_{prop} \frac{N_h}{N}$$

Where:

$$n = \frac{p(1-p)}{(SE \div t) + [p(1-p) \div N]}$$

n_h = Sub-sample faculty (h)

N_h = Size of population in faculty

N = Size of population

Table 1: Calculation of sample size from different colleges.

Name of Faculty	No. of female students	$(n_h = n_{prop} \frac{N_h}{N})$	Sample size required from each colleges
Medicine and Health Sciences	4416	$4416 \div 12477 \times 373$	132
Commercial Studies	368	$368 \div 12477 \times 373$	11
Sciences	1171	$1171 \div 12477 \times 373$	35
Arts	802	$802 \div 12477 \times 373$	24
Engineering and Technological Studies	1873	$1873 \div 12477 \times 373$	56
Natural Resources and Environmental Studies	2241	$2241 \div 12477 \times 373$	67
Education	703	$703 \div 12477 \times 373$	21
Computer Studies and Statistic	903	$903 \div 12477 \times 373$	27
Total	12477		373

DATA COLLECTION

Data were collected using a self-administered semi structured questionnaire. The questionnaire was pretested using ten (10) students selected from a neighboring higher institution of learning before the final study. Printed copies of the questionnaire were handed to the respondents in person. The questionnaire was divided into four parts, Part I focused on the socio-demographic characteristics of the respondents. Part II contained the knowledge about BSE, Part III comprised questions on attitudes towards BSE, and Finally, Part IV comprised questions about practices related to BSE.

DATA PROCESSING AND ANALYSIS

The questionnaires were carefully examined for correctness and completeness, coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 22.0 for Windows. Quantitative data generated from the study was presented in form of tables and analyzed as descriptive frequencies and percentages.

RESULTS

Total of (373) students were participated in the study. More than half (63.8%) of the respondents age were between (16 – 20) and, only (12.3%) of them were older than 26 years. Most of the respondents were from the Faculties of Education (35.4%), Commercial (18.0%) and Medicine (15.0%), with regard to marital status, about (97.3%) were single.

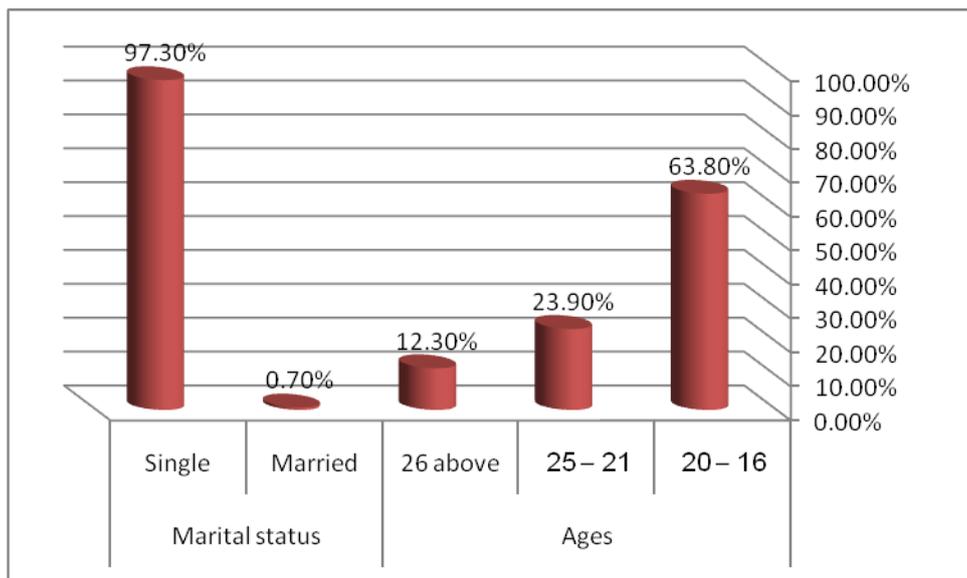


Figure 1: The distribution of female undergraduates according socio-demographic characteristics, University of Kordofan, El-Obeid, 2017. (n= 373).

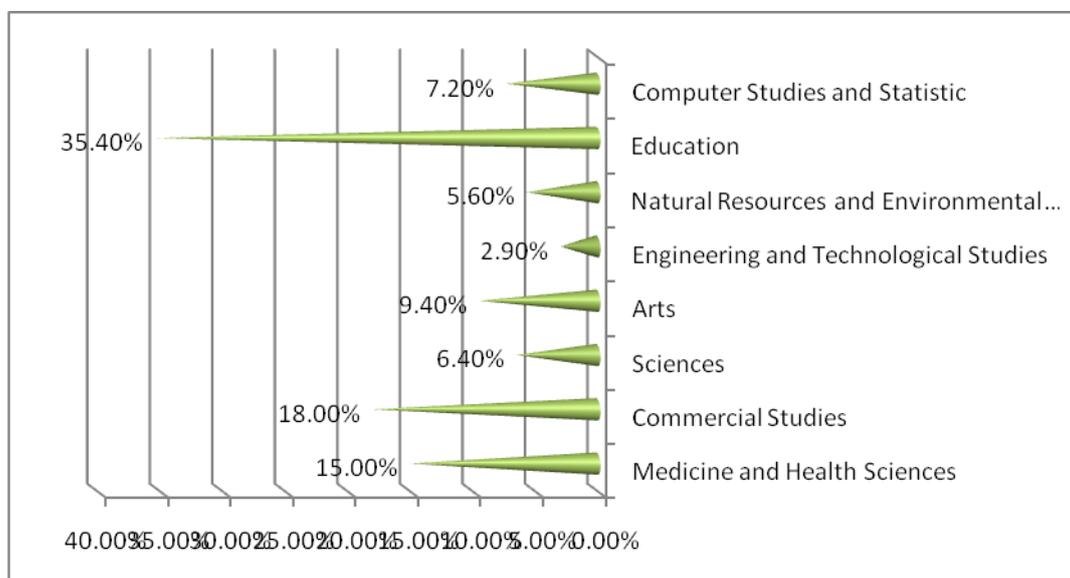


Figure 2: The distribution of female undergraduates according their faculties, University of Kordofan, El-Obeid, 2017. (n= 373).

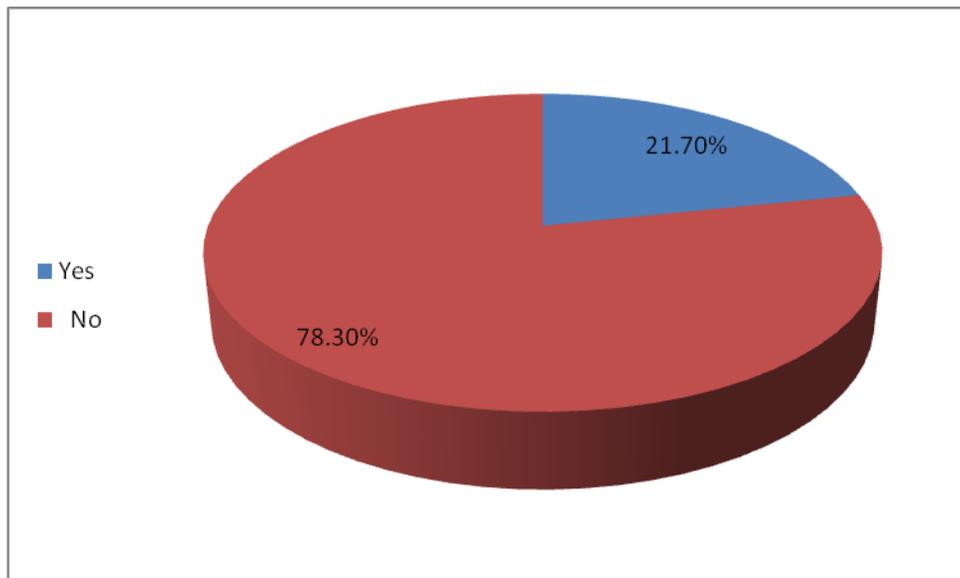


Figure 3: The distribution of female undergraduates according their family history of breast cancer, University of Kordofan, El-Obeid, 2017. (n= 373).

Table 2: Knowledge of the female undergraduates regard breast self-examination, University of Kordofan, El-Obeid, 2017. (n= 373).

Knowledge	Frequency	%
Ever heard of breast cancer?		
Yes	373	100%
No	0	0
Is it common in our population?		
Yes	390	77.7%
No	83	22.3%
Can breast cancer be detected early?		
Yes	320	86%
No	53	14%
Ever heard of BSE?		
Yes	347	93%
No	26	0.7%
Sources of information on BSE		
Television	127	36.7%
Friends	32	9.2%
Internet	101	29.1%
Radio	48	13.8%
Lectures	39	11.2%
Appropriate time for breast self-examination		
5 days after menstruation	143	41.2%
Once a month	19	5.5%
Regularly	49	14.1%
Before menstruation	136	39.2%
I do not know	26	6.1%
BSE is important in the early detection of Breast abnormalities?		
Yes	337	90.3%
No	10	9.7%
Your opinion about Breast Cancer		
It is Treatable	299	80.2%
It is Fatal	42	11.3%
Not treatable	32	8.5%
At any age, breast self-examination should start?		
20-44	187	54%
45-49	118	34%
50-70	42	12%

Barriers of the breast self-examination of		
I do not know how to BSE	77	38%
Carelessness	110	54.1%
Fear of detecting disease	16	7.9%
Is breast cancer is hereditary disease		
Yes	84	22.5%
No	289	77.5%

Table 3: Practices of the female undergraduates regard breast self-examination, University of Kordofan, El-Obeid, 2017. (n= 373).

Practices	Frequency	%
Do you have the breast self-examination Practices?		
Yes	170	45.6%
No	203	54.4%
Frequency of breast self-examination (n=347)		
Monthly	180	51.9%
Yearly	98	28.2%
Weekly	59	17%
More	10	2.9%
Where to do breast self-examination? (n= 170)		
Lying down in the bed	23	13%
Standing in front of mirror,	130	77%
In the bathroom.	17	10%
When to do breast self-examination? (n=170)		
Abnormal pains	50	29.4%
Abnormal lump	43	25.3%
Discharge of pus from the nipple	37	21.8%
Abnormal size increase	18	10.6%
All the above	22	12.9%
How to do breast self-examination? (n=170)		
Palpate with one finger	90	53%
Palpate of the Breast with palm and three fingers	32	18.8%
Both the above	48	28.2%
Do you have a problem in your breast? (n=373)		
Yes	20	5.4%
No	353	94.6%
Do you have exercises? (n=373)		
Regularly	243	65.1%
Not regularly	47	12.6%
No	83	22.3%
What are the reasons for performing breast self-examination? (n=170)		
Had previous breast problem	10	5.9%
Fear of breast cancer from family history	17	10%
Recommended by health professional	56	32.9%
For early detection and treatment	60	35.3%
Fear of developing breast cancer	27	15.9%

DISCUSSION

The present study showed that the age of the respondents ranged from 16 years to 26 years. Similarly finding was reported in studies conducted in Nigeria which stated that the age of respondents was ranged from 16 years to 28 years.^[14] The study was appropriate in this age group as most of them were young adults who should be more enlightened on breast cancer and breast self-examination before they reach the age of common occurrence of the disease. This is in line with advice from health experts

who indicated that women should begin breast examination as early as age twenty.^[15]

In the present study all females student had heard about breast cancer, this finding considered consistent as compared with a study conducted among a Yemeni female students indicated that majority of participants (99.5%) had of knowledge of BC.^[16]

Also this finding considered high as compared with a study conducted among female undergraduate students in

a higher teachers training college in Cameroon showed that (88.1%) participants who had heard about breast cancer.^[17] In a study conducted among Malaysian female students found that (99.5 %) of respondents have heard about breast cancer.^[18] The present study found that (21.7%) of female students reported that they had positive family history, in a study conducted among a Yemeni students that only (12%) of the respondents reported that they had positive family history.^[16] In a study conducted among female undergraduate students in a higher teachers training college in Cameroon found that (5.9%) had a family history of breast cancer.^[17]

In this study most of the respondents (93.0%) have heard of BSE; further investigation indicated that only (18.8%) could correctly described the procedure. Several studies on BSE such as have reported similar findings.^[14] This may be as a result of poor health education in our society and also the perception that they cannot develop breast cancer. The health belief model (HBM) suggests that when a woman perceives herself at risk then she is more likely to practice BSE.^[19] In a study conducted in among a Yemeni student showed that despite (76.9%) of participants heard about BSE.^[16] In a study conducted in among female undergraduate students in the University of Buea showed that nearly three quarter (73.5%) of the respondents had previously heard of BSE.^[20] In a study conducted among female undergraduate students in a higher teachers training college in Cameroon showed that Less than half (47%) of those who knew about breast cancer had heard about breast self-examination (BSE).^[17] In a study conducted among Female Debre Berhan University Students showed that (64%) of the participants had heard of BSE and (35.8%) of the participants knew how to perform BSE.^[21] In a study conducted among Malaysian female students found that (69.1 %) had heard about BSE.^[18] In a study conducted among final years female medical students in Sudan showed that (86%) had knowledge of BSE.^[22]

The present study showed that (11.2%) of female students had heard about the breast self-examination from lectures, (%9.2) from peer group, (36.5%) from television, (14%) from radio and (29.1%) though internet. Also the present study consistent with study carried out among final year's female medical students in Sudan found that mass media was the first source of information for the respondent, and on the basis of this data we suggest utilizing social media more frequently to improve awareness among the community.^[22] In a study conducted in among a Yemeni students showed that The commonest source of information about BSE was the mass media (68.8%), the second source of information was (lectures or meetings) 44.7%; closely followed by information gained from books or journal) (41.3%).^[16] In a study conducted in among female undergraduate students in the University of Buea showed that the main sources of information on BSE cited by the respondents were television (19.9%), friends (19.3%) and doctors (17.5%).^[20]

The present study showed that the main reasons that prevent female students to do the breast self-examine are the lack of knowledge (38.0%), Carelessness (54.1%) and scared of being diagnosed with Breast cancer (7.9%). In a study conducted among a Yemeni student found that (55.9%) did not practice BSE as a result of lack of knowledge about the technique of BSE and (24.1%), (28.1%) due to undesire to practice BSE and fear to find a lump respectively.^[16] Similarly the most common reasons for not doing BSE stated by Egyptian students were "not knowing how to perform BSE" (47%) and "fear of discovering abreast lump" (7.4%).^[23] Also in a study conducted in among female undergraduate students in the University of Buea showed that The main reason for not performing BSE as cited by the respondents were the lack of knowledge (44%); forgetfulness (19.9%); fear of finding lumps (7.8%).^[20] In a study conducted among Female Debre Berhan University Students showed that the main reasons for not performing BSE were lack of knowledge on how to conduct BSE was (32.8%).^[21] In a study conducted among Malaysian female students found that the most common causes for not performing BSE were: (70.5 %) didn't know how to do it and (61.5 %) have worries in detecting breast cancer.^[18]

Majority of female students (90.3%) perceived BSE as an important technique in the early detection of breast cancer. In a study conducted among a Yemeni student found that the majority mentioned that BSE is important for early detection and treatment of the disease (69.2%).^[16] In a study conducted in among female undergraduate students in the University of Buea showed that a majority (88.6%) of the respondents perceived BSE as an important technique in the early detection of breast cancer.

(%98.4) perceived the breast self-examination is necessary.^[20] In a study conducted among Female Debre Berhan University Students showed that almost all of the study participants approved that BSE is important and useful to detect breast cancer.^[21]

Regarding the practice of breast examination, (45.6%) of the respondent had breast self-examination practice. this finding considered high as compared with a study conducted among a Yemeni students showed that only (17.4%) of them were performing breast self-examination.^[16] Also in a study conducted in among female undergraduate students in the University of Buea showed that only (41%) of respondents had ever performed BSE.^[20] in a study conducted in among Female University Students in Ajman showed that (22.7%) of the respondent had breast self-examination practice.^[24] In a study conducted among Malaysian female students found that only (25.5 %) performed BSE.^[18]

The present study found that (29.4%) of female students perform a breast self-examination when an abnormal

pains, (25.3%) when an abnormal lump, (21.8%), when a discharge of pus from the nipple, (10.6%) when an abnormal size increase and (12.9%) others. In a study conducted among female undergraduate students in the University of Buea showed that (18.4%) admitted to have noticed one or more of the following breast abnormalities: abnormal pains (22.2%), abnormal lump (11.1%), discharge of pus from the nipple (11.1%), abnormal size increase (11.1%) and others (44.4%).^[20]

Regarding the correct time of BSE, only (41.2%) of the study participants perform BSE at the right time, (2–5 days after menstruation), (5.5%) Once a month, (14.1%) Regularly, (39.2%) before menstruation, in a study conducted among a Yemeni students found that only (24.6%) performed BSE monthly and the majority of the students performed BSE irregularly (61.4%).^[16] In a study conducted in among Female University Students in Ajman showed that only (3.3%) were practicing monthly and (34.8%) of them practiced at the correct timing in relation to menstruation.^[24] In a study conducted among female undergraduate students in a higher teachers training college in Cameroon showed that as little as 10 (7%) participants knew that the appropriate time to perform a BSE was few days after menstruation.^[17] In a study conducted among Malaysian female students found that only (31.2 %) respondents practice BSE once a month.^[18]

CONCLUSIONS

All female undergraduate students had heard about breast cancer. Most of them had heard about breast self-examination and reported that breast cancer can be detected early. Less than half of respondents examine their breasts themselves and exam their breasts monthly. There is need for health education activities should implement among female undergraduate students for performed breast self-examination, thus preventable of breast cancer among them.

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