

The Awareness and practice of self and clinical breast examination among female undergraduate students of Ebonyi State University, Abakaliki

ABSTRACT

Background: Breast cancer is a global health issue affecting women. In order to increase the rate of survival and minimize the severity of treatments, early detection through self-breast examination and Clinical-Breast Examination is crucial.

Aim: This study aimed to ascertain the level of awareness of breast cancer, the risk factors, and warning signs, evaluate the practice of self-breast examination and Clinical-Breast Examination and ascertain further steps taken when warning signs were detected.

Methods: This study involved 300 undergraduate female students of Ebonyi State University, Nigeria. Data were obtained using questionnaires in which the students answered questions on their awareness of breast cancer, awareness of risk factors of breast cancer, and their awareness of warning signs of breast cancer and their involvement in self-breast examination and Clinical-Breast Examination practice and further steps taken when warning signs were detected.

Results: Results show that 91% of the participants had knowledge of breast cancer. It also revealed that 40.7% and 42% of the students were unaware that age and smoking respectively are risk factors. Also, 60.7% and 72.3% of the students were unaware that redness and irritation respectively are warning signs of breast cancer. Majority of the participants were aware of self-breast examination and clinical-breast examination but 64.3% had practiced self-breast examination whereas, 81.3% had never practiced Clinical-Breast Examination. This study demonstrated that, 9.3% practiced self-breast examination daily, 13% weekly and 42.3% monthly. Only 16.3% had observed breast pain, 8% observed changes in nipple shape. After noticing warning signs, 30.3% saw a doctor, 23.7% did laboratory screening and 16.7% removed lumps.

Conclusion: These findings indicate suboptimal self-breast examination and/or Clinical-Breast Examination practice, suboptimal awareness of the warning signs, and inadequate awareness of the risk factors of breast cancer. Public awareness campaign is necessary to reduce the risk of breast disease among Nigerian females.

Keywords: breast cancer, Questionnaire, breast self-examination, clinical breast examination, warning sign, risk factors, undergraduate students, female students, Ebonyi State University

1.0 INTRODUCTION

Breast cancer is the commonest form of malignancy amongst women worldwide and its early detection is fundamental to improving the disease outcome, which means that the earlier the breast cancer is detected, the better the consequence [1]. There are 3 common techniques for breast cancer screening and early detection². The most commonly recognised breast screening modality is mammography, whereas, breast self-examination (BSE) and clinical breast examination (CBE), play important additional roles in early cancer detection and overall breast health care². In a situation where there is unorganised screening programs, timely detection of breast cancer occur as a result of distresses expressed by women when they have presented with symptoms in the course of routine health care, or from CBE[2]. If women do not practice BSE, due to deficiency of knowledge on BSE technique or poor knowledge of its benefits and do not practice CBE, they are more likely to be diagnosed of breast cancer at advanced stages compared to women who adhere to breast screening recommendations [3]. It has been suggested that, in populations where women are diagnosed with breast cancer at an advanced stage, it would probably be cost-effective to teach BSE and to screen by CBE to improve breast cancer outcomes [1]. Thus, BSE and/or CBE plays a significant role in expediting early cancer detection[1, 3]. This research aim to obtain information on the awareness of undergraduate students of EBSU on breast cancer, BSE and CBE and evaluate their knowledge on the risk factors of breast cancer, the warning signs as well as evaluate the further steps taken if any of the warning sign is detected.

2.0 METHODS

2.1 Study design

This study is an exploratory cross-sectional research conducted on female students of Ebonyi State University, Abakaliki through a semi structured questionnaire. Questionnaire was issued to each participant during face to face interactions with research assistants. Convenient sampling methods was implemented for this study.

2.2 Questionnaire design

Extensive literature review was carried out before the development of a semi-structured questionnaire was developed in English language. It covered the questions related to demographic factors, Knowledge of Breast cancer and risk factors for breast cancer, Knowledge of Self-Breast Examination (SBE) and Clinical breast examination (CBE), and further steps taken after Breast Examination. The questionnaire was evaluated and validated by a Pathologist before distributing to the participants.

2.3 Data collection

This study was piloted from January to December 2023. A total of 300 female undergraduate female students were included in the study; the sample size calculation suggested that at 95% confidence interval. The trained researcher described the aim and the process of interview to the students. Anonymity and confidentiality of the students were emphasized and informed consent was obtained.

2.4 Data analysis

The answer to questions were coded in the format of “yes” or “no”. The age, and level of study of the students were included as the demographic factors. The collected data were documented in Excel 2013 and SPSS (Statistical Package for the Social Sciences) version

27.0.1 was used to analyse the data. To get the P-value, the questionnaire's data were entered into the SPSS and subjected to bivariate correlation analysis. P-value of 0.05 was considered significant. The interpretation of the data was via Descriptive statistics.

2.5 Ethical Consideration

Ethical approval was obtained from the Ebonyi State University's Ethical Committee before the research was carried out. Consent for participants was obtained. All information was kept confidential and anonymous.

3.0 RESULTS

The findings show the level of awareness of Breast Cancer, the risk factors, the warning signs, their knowledge on SBE and CBE as well as steps taken after warning signs are discovered by female undergraduate students of Ebonyi State University.

3.1 Demographic factors of the participants

A total of three hundred (300) students participated in this study. The results obtained show that 38.3% (115 participants) of the participants were between the ages of 15-20 years, 49% (147 participants) were aged 21-25 years, 10% (30 participants) of the participants were between the ages of 26-30 years and the 2.7% (8) were above 30 years (Table 1). Thirty eight (38) participants (12.7%) were married while two hundred and sixty (260) participants were unmarried which is 86.7% (Table 1). Two (2) of the participants were divorced (Table 1). The participants were selected from different levels of the undergraduate study (Table 1).

3.2 Knowledge of participants about Breast Cancer and Its Risk Factors

The knowledge of the participants about breast cancer and the risk factors were assessed. Our results show that 91% of the participants responded in affirmative that they heard of breast cancer while 9% never heard of breast cancer. It was also observed that 45.3% of the

participants said they knew that smoking is a risk factor for developing breast cancer while, 54.7% did not know that smoking is a risk factor whereas, 63.7% of the students were aware that genes risk factors of breast cancer and 36.3% was not aware that genes are risk factors for breast cancer (Table 2). The results obtained show that 64.3% (193) of the participants are not aware that Age was a risk factor for breast cancer. Only 35.7% (107) knew that age was a risk factor for breast cancer (Table 2). Our results also show that 64% of the participants knew that weak immune system is one of the risk factors of breast cancer while 36% don't know. Our observations also revealed that only 28% (84 participants) knew that Obesity was a risk factor while, 72% (216 participants) were not aware that Obesity was a risk factor for breast cancer, (Table 2). Also 45% of the participants are not aware that taking hard drugs could predispose them to breast cancer. Whereas 55% knew that taking hard drugs can predispose to breast cancer risk (Table 2). Knowledge of the participants on alcohol as a risk factor of breast cancer revealed that 61.7% said they didn't know that taking alcohol is a risk factor for developing breast cancer while 38.3 % were aware (Table2).

3.3 Knowledge of the Participants on the Warning signs of Breast Cancer

The knowledge of the participants on the warning signs of breast cancer was assessed and the results obtained show that significant ($P < 0.05$) number of the students reported that they were aware that redness, irritation of the breast, lumps around the collarbone, changes in the shape of the nipple, abnormal pain in the breast that remains after period ends, Redness of affected Breast, swelling of the Breast, rash on the Breast, and abnormal nipple discharge are warning signs of breast cancer, whereas, insignificant number ($P \geq 0.05$) of the students responded that they knew that sores or wounds are warning signs of breast cancer (Table 3).

According to the results displayed on Table 3 below, 69.7% of the students were aware that redness is a warning sign while 30.3% were not aware of the aforementioned. Our survey

showed that 72.3% of the participants were aware that irritation of the breast is a warning sign while 27.7% admitted that they were unaware of it (Table 3). The results also showed that 45.7% of the participants don't know that lumps around the collarbone are warning signs, 54.3% responded that they knew that lumps around the collarbone are warning signs. Some of the participants (35.3%) were unaware that changes in the shape of the nipple are actually a warning sign where as 64.7% were aware. Only 37.7% were unaware that sores or wounds on the breast is a warning sign and 33% were unaware that abnormal pain in the breast that persists even after the end of a menstrual period, is a warning sign of breast cancer while 67% were aware (Table 3).

3.4 Knowledge of the students on SBE and CBE

Based on the findings of the research displayed in the table below: Majority of the participants (80.7%) had heard of self and clinical breast examination but only about 64% of the population claimed to have done self-breast examination (SBE) while 36% had never carried out SBE (Table 4). Majority of the participants (81.3%) had never done Clinical Breast Examination (CBE) while 18.7% of the participants stated that they had carried out clinical breast examination (Table 4). Our results show that majority of the participants were aware of SBE. Upon inquiry on how often they performed SBE; 9.3% said that they check daily, 13% said that they check weekly, 42.3% said that they check their breasts monthly and 35.5% said they never checked (Table 4).

3.5 Observations made by participant during SBE

In order to investigate the possible prevalence rate of breast cancer among the EBSU students, the participants were asked if they noticed any signs and/or symptoms of breast cancer while performing SBE (Table 5). Majority of the students (82%) responded that they had never felt lumps in their breasts while 18% of the students had felt lumps during SBE

(Table 5). Most of the students(92%)responded that they had never observed any changes in the shape of their nipple while 8% hadobserved changes in the shape of their nipple(Table 5).Additionally, 93% attested that they had had abnormal discharge from their nipple while 7% indicated that they neverhad. Few participants(16.3%) reported that they had experienced an abnormal pain in the breast that continued even after the end of their menstruation or menstrual period. Some of the participants 11.7% (35 participants) testified that they had felt lumps in their collarbones at least once while the rest 88.3 % (265 participants) stated that they had not(Table 5).Majority of the participants (85. 7%) had felt lumps in their armpits while 14.3% had never felt lumps in their armpits(Table 5).

3.6 Further Steps Taken after discovering warning signs during SBE

Results obtained after assessing for further steps taken after discovering warning signs during SBE and CBE show that 30.3% said that they saw a Doctor while 60.7% did not (Table 6). Few participants (23.7%) admitted that they did a laboratory screening whereas, 76.3% did not go for laboratory screening (Table 6). Furthermore, 16.7% reported that they had removed the lumps in their breasts, armpit or collarbone while a significant number of participants (83.3%) did not(Table 6).

4.0 DISCUSSIONS

A poor understanding of risk factors and screening methods causes the women to rarely or never checking their breasts. Increasing breast cancer awareness in Ebonyi state, Nigeria is an important, feasible and effective way of increasing the number of women who will receive timely clinical-breast examinations.

Our findings shows that significant number (P value 0.008) of female undergraduate students of EBSU are aware of breast cancer (table 2). This is consistent with a previous research

which revealed that people with higher education exhibited increased awareness level of breast cancer [4, 5, 6, and 7].

Majority of the students showed noticeable gaps in their knowledge of risk factors for breast cancer. Most of the students were not aware that age, smoking, taking hard drugs, obesity and alcohol consumption are risk factors for breast cancer (table 2). This suggest that female undergraduate students of EBSU have poor knowledge of risk factors associated with breast cancer development. This is in line with previous study which disclosed that urban women showed a very poor knowledge level of the risk factors of breast cancer [8]. Other previous studies have established that the level of breast cancer awareness is very low in several Asian and Western countries [9, 10, 11]. A previous contrasting study show that the low level of awareness of the knowledge of the risk factors for breast cancer and low knowledge of the numerous screening methods were seen mostly among women with low educational levels [12]. Many studies have reported that Asian women have poor knowledge of breast cancer risk factors and also British women [8, 9, 10, 13]. Our present study indicated a poorer knowledge of breast cancer risk factors.

It is best for women to feel and examine their breasts for consistency, size and shape, so that any deviation from normal would lead to questioning of breast associated disorders. Our results revealed that majority of female undergraduate student of EBSU were aware of the warning signs of breast cancer such as Redness of affected Breast, Irritation of Breast, Swelling of the Breast, Rash on Breast, Abnormal Nipple discharge, Lumps in Breast, Changes in the shape of Nipple, Lumps around collar bone, Abnormal pain in the breast that remains after period ends, Sore or wound on Breast (Table 3). It also agrees with the study which reported that nurses demonstrated good knowledge of warning signs of breast cancer [14]. Sathianet *al.* (2014), previously reported that graduates were more aware of BSE, as well as the warning signs of breast cancer than others lower educational levels [14].

This is not consistent with a study conducted on Nepalese women in which they proved low awareness of warning signs of breast cancer [14].

Our study supports the study done in Saudi Arabia which states that awareness of breast cancer warning signs, such as breast lump, bleeding and/or nipple discharge, dimpling breast skin, changes in breast size and nipple pulling in are the most common identifiable symptoms of breast disorder¹⁵. Radi, (2013), also reported that some women had poor knowledge that redness of breast skin and nipple rash are warning signs associated with cancer of the breast [15]. Our findings are in agreement with Radi's report in Saudi Arabia, which publicised that females were aware that breast lump, nipple discharge and breast skin changes are common warning signs of breast cancer [15]. Previous reports revealed that people with higher education showed an increase in the awareness level [4, 5, 6, 7].

SBE and CBE helps in early breast cancer detection which involves physical and visual inspection of one's own breasts to inspect for any indication of breast tumour.

When the knowledge of participant on SBE and CBE was evaluated, our results revealed that 80.7% of the undergraduate student were aware of SBE and CBE (Table 4). Our findings also show that 64% and 18.7% have done SBE and CBE respectively (Table 4). Present study also found that 9.3% examine their breast daily, 13% of the female EBSU undergraduate students examine their breast weekly whereas 42.3% examine their breast monthly (Table 4). Only 1% of the students have never heard about SBE and CBE through any means (Table 4).

Our finding is consistent with previous study which reported that there were very high awareness (93%) of self-breast examination¹⁶. Kudzawuet *al.*, (2016) also reported that few participant practiced self-breast examination weekly, which is consistent with our finding [16]. Other previous study In Egypt, revealed that 5% of female students of the university have knowledge of SBE while over 90% of the female participants have never practiced SBE [17].

Our findings show that the participants made the following observations during SBE. Only 18% discovered Lump in the Breast, 8% discovered change in the nipple, 7% discovered abnormal Nipple discharge, 16.3% discovered abnormal breast pain that remains after menstrual period end, 11.7% had Lumps in collar bone, whereas, 14.3% discovered Lumps in the armpit (Table 5). Regular breast examination of a woman individual breasts helps her to detect readily any changes occurring in the breast [18]. Various studies have reported that the majority of the advanced breast cancers were detected initially by the patients themselves based on the changes she discovered as lump, and other abnormal changes [19, 20, 21]. Radi previously reported that females in Saudi Arabia were aware that breast lump, nipple discharge and breast changes are recurrent warning signs for breast cancer [15]. The commonest complaints in the breast are breast pain, breast masses, and nipple discharge [22]. A substantial breast mass must be evaluated using various clinical breast exam [22].

The findings of current study revealed that majority of the participants never took any further step for further evaluation after discovering warning signs during SBE. Only 30.3% booked appointment with doctor, 27.3% did laboratory screening to confirm or rule out cancer whereas, 16.7% of the participants went further to remove lumps from the breast (Table 6). Once the warning signs is presented to a health care organization, the diagnostic services need to be activated to provide a prompt as well as accurate diagnosis [21]. The effective diagnoses and subsequent treatment of clinically noticeable breast cancer starts with clinical breast evaluation through taking of the medical history and there after performing an intensive physical examination, together with clinical-breast examination (CBE), followed by diagnostic breast imaging and pathologic evaluation of the tissue samples, -called triple test for breast diagnosis [21, 23]. Once accessible and high-quality services, are available for diagnoses and treatment of clinically apparent breast disease, screening programs must be activated for early detection as well as effective timely diagnosis.

4.1 CONCLUSION

This study indicate that the students have adequate awareness of breast cancer, suboptimal practice of SBE and/or CBE, suboptimal awareness of the early warning signs, and inadequate awareness of the risk factors, which critical to increasing the breast cancer burden. Public awareness campaign is necessary to overcome the increasing burden of breast disease among Nigerian females.

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UNDER PEER REVIEW

Table 1: showing the age, level/year of study and marital status of the participant/students

Parameters

Age(years)	Number	Percentage (%)	P value
15-20	115	38.3	0.026
21-25	147	49	
26-30	30	10	
Above 30	8	2.7	
Marital Status			
Single	260	86.7	0.813
Married	38	12.7	
Divorced	2.	0.6	
Level of study			
100	72	24	0.000
200	67	22.3	
300	62	20.7	
400	50	16.7	
500	48	16	
600	1	0.3	

Table 2: Showing the participants levels of awareness of breast cancer and their knowledge of the risk factors of breast cancer.

Heard of Breast cancer	Number	Percentage (%)	P value
Yes	273	91	0.008
No	27	9	
Smoking			
Yes	136	45.3	0.003
No	164	54.7	
Genes			
Yes	191	63.7	0.000
No	109	36.3	
Age			
Yes	107	35.7	0.003
No	193	64.3	
Weak Immune system			
Yes	192	64	0.000
No	108	36	
Being Obese or overweight			
Yes	84	28	0.297
No	216	72	
Taking hard drugs			
Yes	165	55	0.040
No	135	45	

Taking alcohol			
Yes	115	38.3	0.255
No	185	61.7	

UNDER PEER REVIEW

Table 3: showing the levels of awareness of the students to early warning signs and symptoms of breast cancer.

Parameters	Number	Percentage (%)	P value
Redness of affected Breast			
Yes	209	69.7	0.000
No	91	30.3	
Irritation of Breast			
Yes	217	72.3	0.000
No	83	27.7	
Swelling of the Breast			
Yes	249	83	0.000
No	51	17	
Rash on Breast			
Yes	185	61.7	0.029
No	115	38.3	
Abnormal Nipple discharge			
Yes	231	77	0.048
No	69	23	
Lumps in Breast			
Yes	257	85.7	0.000
No	43	14.3	
Changes in the shape of Nipple			

Yes	194	64.7	0.000
No	106	35.3	
Lumps around collar bone			
Yes	163	54.3	0.000
No	137	45.7	
Abnormal pain in the breast that remains after period ends			
Yes	201	67	0.001
No	99	33	
Sore or wound on Breast			
Yes	187	62.3	0.296
No	113	37.7	

Table 4: levels of awareness and practice of SBE and CBE as well as how often the participant practice SBE and CBE

Parameters	Number	Percentage (%)	P value
Heard of SBE and CBE			
Yes	242	80.7	0.000
No	58	19.3	
Have you done SBE?			
Yes	192	64	0.000
No	108	36	
Ever done CBE?			
Yes	56	18.7	0.017
No	244	81.3	
How often do you check?			
Daily	28	9.3	0.000
Weekly	39	13	
Monthly	127	42.3	
Never	106	35.5	
How you know about SBE and CBE			
Social media	193	64.3	0.022
Seminar	71	23.7	
News paper	11	3.7	
Television	22	7.3	
Never	3	1	

Table 5 Observations made and changes detected by participant during SBE

Parameters	Number	Percentage (%)	P value
Lump in Breast			
Yes	54	18	0.193
No	246	82	
Change in Nipple			
Yes	24	8	0.017
No	276	92	
Abnormal Nipple discharge			
Yes	21	7	0.005
No	279	93	
Abnormal breast pain that remains after period end			
Yes	49	16.3	0.071
No	251	83.7	
Lumps in collar bone			
Yes	35	11.7	0.040
No	265	88.3	
Lumps in armpit			
Yes	43	14.3	0.006
No	257	85.7	
Are you aware that the above could be signs of Breast cancer			

Yes	187	62.3	0.000
No	113	37.7	

UNDER PEER REVIEW

Table 6:Further Steps Taken by the students after discovering warning signs during SBE

Parameters	Number	Percentage (%)	P value
See Doctor			
Yes	91	30.3	0.022
No	209	60.7	
Did Lab screening			
Yes	71	23.7	0.014
No	229	76.3	
Remove Lumps			
Yes	50	16.7	0.453
No	250	83.3	