BREAST SELF EXAMINATION- A NECESSARY PREVENTIVE TOOL: KNOWLEDGE AND PRACTICE AMONG STUDENTS OF COLLEGE OF EDUCATION GINDIRI, PLATEAU STATE.

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ABSTRACT

Background: *Breast cancer a non-communicable disease is a fast growing epidemic in most part of the world more importantly in the developing countries like Nigeria. Study objective was to determine the knowledge and practice of Breast Self Examination (BSE), a necessary preventive tool, among students of the College of Education, Gindiri, Plateau State.*

Methodology: *It was a cross-sectional study of female students. A semi structured self administered questionnaire was used to collect relevant data. A multi-stage sampling technique was used to recruit 115 students. Microsoft word Excel was used for data entry and cleaning while SPSS version 19.0 statistical soft ware was used for data analysis for both the qualitative and quantitative data generated.*

Results:
Students aged 18 to 38 years (mean age of 23.86±3.59 years). Knowledge on BSE was poor (79.1%) with only (20.9%) with a good knowledge on what BSE meant. Few students 18 (15.7%) had practiced BSE once or in the last 6 months to one year. Thirty-nine (33.9%) of the students had at least one breast cancer related risk factors. A non- statistically significant (p=0.116) association was established between presence of the associated breast cancer risk factors and the practice of BSE.

Conclusion:
Poor level of knowledge and practice of BSE was established among the students. No statistically significant association was established between students that had any or all of the associated breast cancer risk factors and the practice of BSE.

Key words: *Breast cancer, breast self examination, non-communicable diseases, students, prevention.*

Introduction

Non communicable diseases (NCDs) a chronic disease epidemiology are chronic diseases that are typically non contagious, non infectious and not transferred from person to person.[1] It is however now assuming a growing importance in both developed and developing countries, thus becoming an important contributor to disease burden and therefore a major Public Health concern.[2,3]

The high surge of these diseases may be due to several reasons. One of which is the increasing life expectancy in some parts of the world (especially in the developed countries) and more people live up to the years when such diseases commonly manifest. For another, the changing life-styles and behavioural patterns in the developing world, with a drift to the adoption of the western culture and diet. Among the common NCDs are cancers (such as breast, cervical), road traffic accidents, hypertension and diabetes.[3,4]

Breast cancer is an uncontrolled growth of breast cells which occurs as a result of mutations, or

abnormal changes, in the genes responsible for regulating the growth of cells and keeping them healthy. Normally, the cells in our bodies replace themselves through an orderly process of cell growth: healthy new cells take over as old ones die out. But over time, mutations can "turn on" certain genes and "turn off" others in a cell. That changed cell gains the ability to keep dividing without control or order, producing more cells just like it and forming a tumor. A tumor can be benign (not dangerous to health) or malignant (has the potential to be dangerous). The term "breast cancer" refers to a malignant tumor that has developed from cells in the breast.[5]

Breast cancer is a leading cause of mortality worldwide; it is the commonest cause of death in developed countries in middle aged women [6, 7, 8] In Nigeria, it is among the five commonest cancers, others are cervix, prostrate, hepatoma and lymphomas.[9] Breast cancer is by far the most common cancer in women worldwide.

Breast Cancer represents 10 per cent of all cancers diagnosed throughout the world every year.

The incidence of breast cancer in women in high-income countries in 2000 was at least twice that of any other cancer. Early detection and screening programmes in high-income countries altered the reported rates of both incidence and mortality. Mortality rates for breast cancer in Western Europe and North America are in the range of 1525 per 100 000 women, being slightly more than a third of the incidence rate. The survival rate from breast cancer in developing countries is generally poorer than in developed countries, primarily as a result of delayed diagnosis of cases.

In Nigeria in 2005 approximately 89,000 people died from cancer. 54,000 of those people were under the age of 70. In 2005, breast cancer was found to be the most common cancer among women and the leading cause of cancer deaths in women in Nigeria.[10] Breast cancer is now the commonest malignancy affecting women in Nigeria. It is likely to become an important public health issue in the next millennium. [11, 12, 13]

Most communicable diseases may be associated with an array of risk factors which could be from personal behaviour, or lifestyle, an environmental exposure, an in-born or inherited characteristic which on the basis of epidemiological evidence is known to be associated with health related conditions that are important to control. Breast cancer like other non-communicable diseases have associated risk factors which include: age, family history, parity, age at menarche and menopause, hormonal factors, prior breast biopsy, diet, socio economic status, radiation, oral contraception. A preventive measure such as cancer screening can thus be instituted early to reduce the incidence or completely prevent the occurrence of this disease.[1, 14] Breast cancer screening refers to testing otherwise-healthy women for breast cancer in an attempt to achieve an earlier diagnosis. The assumption is that early detection will improve outcomes. A number of screening test have been employed including: clinical and self breast exams, mammography, genetic screening, ultrasound, and magnetic resonance imaging.[14]

As a preventive measure, physicians encourage the non-invasive, least expensive, simple and non-professional dependent monthly regular breast self-examinations in which a woman uses her fingers to feel for changes in breast shape and fluid discharge from the nipple. This exercise is usually encouraged in every woman early in life and below the age of 40 years. For women over the age of 40 years, the American Cancer Society recommends regular mammogram though not readily available and affordable especially for the majority of the women who may need it in the developing world. A lump in the breast is no sure sign of cancer, every breast is lumpy to some degree and the lumpiness becomes more pronounced shortly before menstruation as breasts naturally enlarge. However a woman who finds a lump in her breast should report it to her doctor immediately.

Breast self-examination is best performed when the hormone stimulation of the breast is the least. This typically occurs 7-10 days after the start of a menstrual cycle. At that point, the fluid retention of the breast and the cellular proliferation are the lowest. An ideal setting in which to conduct the exam is the bath or shower.There are general steps to be used as guideline for BSE: it should be performed monthly preferably7-10days from the first day of the period for premenopausal women and any selected day of the month for post menopausal women; look in the mirror while standing and note the two breasts for any change in shape, size and colour; using the opposite hand for the opposite breast feel for any abnormal hardness; with the arm raised above the head while lying, feel the opposite breast on the side of the raised arm with the opposite hand and vice visa and lastly note your findings.[15] If different from the last examination immediately inform your doctor.

Methodology

Study area

The College of Education (COE) is a tertiary institution located in Sarbon Barki of Gindiri in Mangu Local Government Area of Plateau State. It was established in 1980 and has five faculties namely: Arts and Social Sciences, Sciences, Vocational and Technical Education, School of Education and School of Languages. The estimated population of the students is 6,500. Most of the student reside off campus located few perimeters from the school premises while others stay in the hostels. The College has a sick bay located within the campus, which provide essential primary care services for both staff and students of the institution.

Study Population

The population studied consisted of female subjects studying in the college of Education Gindiri, residing off campus in Sabon Barki community at the time of the study.

Study design

This was a descriptive cross-sectional study of female students of the COE residing off campus. A verbal consent was sought and obtained from the students before the commencement of data collection, which was by a semi-structured self administered questionnaire comprising of five sections on: socio-demographic characteristics, knowledge, source of information, presence of associated risk factors and frequency/factors that influence practice of BSE. Microsoft word Excel was used for data entry and cleaning while SPSS version 19.0 statistical soft ware was used for data analysis for both the qualitative and quantitative data generated. The sociodemographic characteristics, knowledge on BSE, practice of BSE and presence of breast cancer associated risk factors were represented by frequency distribution tables. Chi square test was used to test for any association between: presence of breast cancer associated risk factors and the practice of BES. A confidence interval of 95% and a p- value of ≤ 0.05 were considered statistically significant.

Sample size

The minimum sample size was determined using the formula;

$$N = \frac{Z^2 pq}{d^2}$$

Where n = minimum sample size

Z = Standard deviation score at 95% = 1.96

P= the prevalence of knowledge on BSE in the target population, according to a study done in Jos, Nigeria prevalence of knowledge in students was 5%.[16]

q = Complimentary Probability (1- P) = 1- 0.05 = 0.95

d =Tolerable error margin = 5%

$N= (1.96)^2 \times 0.05(1- 0.05)/ 0.05^2$

N= 73

A minimum sample size of 73 study subjects was calculated.

Sampling Technique: A multistage sampling technique was used to select study subjects;

Stage 1: Mangu LGA was selected from a sampling frame made of the list of the 17 LGA in Plateau State, by simple random sampling by balloting.

Stage 2: Gindiri I ward was selected purposively being the only ward from a list of the 20 political wards in Mangu LGA with a tertiary institution.

Stage 3: Sabon Barki community was selected purposively from a list of the 6 communities in Gindiri I ward being the community where the institution is located.

Stage 4: Females students off campus residing few perimeters from the institution and who consented to the study were sampled.

Limitation

Information obtained may be affected by recall bias especially in students that had associated risk factors.

Scoring System

Correct scores were the right answers given on knowledge on what comprises BSE; group of persons whom BSE should be performed; who to perform the task; where and how it should be performed. The incorrect scores were wrong answers given for the above questions.

Results

The questionnaire was administered to 115 students with a 100% response rate.

Table 1: Sociodemographic characteristics of Respondents

Variable	Frequency	Percentage
Age group		
≤20	16	13.9
21-30	94	81.7
31-40	5	4.4
Marital status		
Single	89	77.4
married	26	22.6
Level of study		
100	28	24.3
200	59	51.3
300	28	24.3
Religion		
Christianity	110	95.7
Islam	5	4.3
Tribe		
Maghavul	46	40.0
Ron	15	13.0
Berom	9	7.8
Pyem	5	4.3
*others	40	34.9

*Others: Mupun, Tarok, Igbo, Afezere, Jaba, Ngas

Most of the students were within the sexually active age group with a range between 18 to 38 years and a mean of 23.86±3.59 years. Majority of the students were singles (77.4%), majority of the students are in 200 level 59 (51.3%). The tribe Maghavul is the majority 46 (40.0%) and Pyem being the least 5 (4.3%) studied

Table 2: Knowledge of students on BSE

	Frequency	Percentage
1. What is BSE?		
Correct	24	20.9
Incorrect	91	79.1
2. In which group of people should it be performed?		
Correct	7	6.1
Incorrect	108	93.9
3. Who should be responsible for performing this risk?		
Correct	19	16.5
Incorrect	96	83.5
4. Where should it be performed?		
Correct	20	17.4
Incorrect	95	82.6
5. How is it performed?		
Correct	19	16.5
Incorrect	96	83.5

Poor knowledge on BSE was observed, evident by high scores of 'incorrect' grades in the entire questions asked on this topic. The question on 'in which group of people should BSE be performed' had the lowest 'correct' score of 7 (6.1%).

Table 3: Student's response on practice of BSE?

	Frequency	Percentage
Have you ever performed a BSE		
Yes	18	15.7
No	97	84.3
Total	**115**	**100**

Few students 18 (15.7%) had practiced BSE on themselves once or in the last 6 months to one year prior to the study

Table 4: Presence of related BSE risk factors among students

	Practice of BSE		Total
	Yes	No	
Presence of any of breast cancer associated risk factor			
Yes	9	30	39
No	9	67	76
Total	**18**	**97**	**115**

***** Biological relative with breast cancer/ History of oral contraceptives/ Presence of breast lump**.**

About 1/3rd 39 (33.9%) of the students had one of all of some breast cancer related risk factors such as having a biological relative with a confirmed case of breast cancer, history of oral contraceptives and its duration and presence of breast lump or any breast abnormality during the study or in the past.

Table 5: Presence of breast cancer associated risk factors and practice of BSE

	Frequency	Percentage
***Presence of any/all of Breast cancer accociated risk factors**		
Yes	39	33.9
No	76	66.1
Total	**115**	**100**

X^2=2.464; df=1; p=0.116

A non-statistically significant (p=0.116) association was established between students that had any or all of the breast cancer associated risk factors and the practice of BSE.

Discussion:

Majority of the students were singles and the predominant religion practiced was Christianity, similar to the sociodemographic data of a similar study by Onyije FM et tal.[17]

Poor knowledge of BSE was observed 24 (20.9%) in the study. Practice of BSE was also poor 15 (15.7%) which may be related to the poor knowledge they had on BSE. The studied group is a vital tool for nation building; they are the future leaders of tomorrow, potential teachers that will teach and impact positively in the upcoming generation, young and sexually active age group. A

poor knowledge and practice scores among them may inversely have a negative effect on the health system generally. Though their curriculum may not include this as a topic, but considering their status, gender and presence of health institutions in their vicinity a fair knowledge of some key preventive practices should be known. This is again evident in the association between presence of breast cancer related risk factors and the practice of BSE among them. A non-statistically significant (p=0.116) association was established.

This findings is similar to that found in a cross-sectional study was conducted using a self-administered questionnaire to assess the knowledge of breast cancer among 207 female doctors, nurses and other healthcare professionals working in a university teaching hospital in Lagos, Nigeria. Female doctors had a satisfactory knowledge of risk factors than the other participants. Though more participants practiced BSE once a month, a non-significant statistical association between knowledge, age and practice of BSE was found in the study. [13]

Similar results of poor knowledge and practice was observed in a study carried out by Okobia MN et tal, on community-dwelling women in a semi-urban area in Edo state Nigeria, participants showed a poor knowledge of breast cancer and practice of breast self examination (BSE) was also low; only 43.2% admitted to carrying out the procedure in the past year prior to the study.[18]

In another cross-sectional study on the knowledge of breast cancer risk factors by Ghanem S et tal, it was found that female doctors also had satisfactory knowledge of these factors while the nurses had unsatisfactory knowledge 75% practice breast self-examination once a month and only 15% have ever had a mammogram. Age, medical profession and beliefs were not significantly associated with rate of BSE in this study; however this rate is influenced by knowledge of breast cancer risk factors.[19] The satisfactory knowledge and higher practice of BSE in the Ghenem S et tal study, may be attributed to the participants who must have had the topic taught in the medical school but in theory and practically during ward rounds.

Knowledge and the presence of risk factors did not translate to practice of BSE as evident by the findings in this study. This was also the findings of Gwarzo UM et tal [20], Onyije FM et tal [21] and Nwagbo DF et al [22]

Breast cancer is a silent growing epidemic whose effect is seen more in the developing countries, where patients usually present to hospital at an advanced stage when little or nothing could be offered therapeutically but rather they may benefit from some palliative measures. This has given so much importance to the easy, readily available and affordable individual motivated self examination of her breast tissues in resource constraint countries like ours. In a study by Banjo AAF, on overview of breast and cervical cancers in Nigeria, found out that majority of patients presented at a late clinical stage with more than 80% presenting at clinical stage Manchester III or more.[23] Some reasons for late presentation in the developing countries may be due to lack of knowledge of breast cancer as established in this study which is in support of findings from other similar studies.

However, a study conducted by Rosolowich V et tal on the review of the evidence in support of BSE in Canada, showed that regular BSE conferred no benefit in terms of survival from breast cancer, rather suggested some benefit from routine instruction of BSE but only to certain women who may be at a high risk of developing breast cancer.[24] In the developing parts of the world, affordability of healthcare is highly limited by its skyrocketing cost. Access to screening and diagnostic medical equipment and medicine is inadequate for the majority of the population. There is a tremendous worldwide need to detect breast cancer at its earliest stage. In view of many countries with limited resources, effective yet less expensive modes of screening such as BSE may be a needed tool for women less than 40years. [25]

The benefits of screening using the population approach model far outweighs that of the individual approach because the risk approach may give a false sense of good health and assurance to the excluded group which in the long run, may be the group that may likely manifest with a higher prevalence of the disease or condition in question. Educating the population is a more cost effective approach than targeting the high risk group.

A key determinant of breast cancer outcome in any population is the degree to which cancers are detected at early stages of disease. Populations in which cancers are detected at earlier stages have lower breast cancer mortality rates. Public education and awareness are the key first steps, because early detection programs cannot be successful if the public is unaware of the value of early detection. [26]

Nine out of 10 breast lumps are found by women themselves. Eight out of every 10 breast lumps are not cancerous, but that does not lessen the need to

do breast self-examinations monthly. The BSE will help to determine what is normal for your breasts, and help you recognize a change. Every woman is at risk for breast cancer, regardless of age, family history or current health. In fact, the majority of women who are diagnosed with the disease have none of the commonly known risk factors.[23]

Conclusion:

It was concluded from this study the poor knowledge and practice of breast self examination among students of tertiary institution, BSE being considered as a necessary preventive tools in the early detection of breast cancers in resource poor countries. A poor practice was also observed even among those having or has had an associated risk factor for the disease.

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