

**KNOWLEDGE, ATTITUDE AND PRACTICE OF REGULAR PRACTICE OF BREAST  
SELF-EXAMINATION AMONG FEMALE UNDERGRADUATE STUDENTS OF EKITI  
STATE UNIVERSITY, ADO-EKITI, NIGERIA.**

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**ABSTRACT**

Breast cancer is of significant global public health concern being the leading cause of female cancer-related morbidity and mortality. This study investigated the knowledge, attitude and practice of breast cancer screening among female undergraduates of Ekiti State University (EKSU). It was a cross-sectional study among 500 students selected by multi-stage sampling from various faculties in Ekiti State University (EKSU), Ado-Ekiti, Ekiti State, Nigeria. We obtained

an ethical clearance from the Ethical and Research Committee of the Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti State, Nigeria. The data analysis was done using Statistical Package for Social Science Version 28. Most participants (89%) were between 15-25years old, Christians and single (97.4%). Almost all of them (97.2%) had heard about breast cancer through social media and could correctly identify symptoms and risk factors. However, a significant number could not perform breast self-examination (26.4%) and 31.1% chose to ignore abnormalities detected. This study shows that while knowledge of breast cancer was high, attitudes and practice of screening was unsatisfactory, buttressing the importance of breast cancer prevention campaigns among young females.

**Keywords:** Ado-Ekiti, breast cancer, screening, young females

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## INTRODUCTION

Breast cancer is a disease in which abnormal ductal cells in the breast grow out of control and form tumours. <sup>1</sup> According to the 2022 GLOBOCAN statistics, breast cancer is the second most common cancer globally following lung cancer. <sup>2</sup> Among all female

cancers, it is the leading cause of morbidity and mortality worldwide, with death rates significantly higher in low- and middle-income countries including Nigeria.<sup>2</sup> There has been a rise in the incidence of breast cancer in Nigerian women, from 54.3 per

100,000 in 2020 to 69.1 per 100,000 in 2022.

<sup>3</sup> Although the incidence was previously uncommon among women less than 40 years of age, a remarkable increase has been noted recently, particularly from ages 15 to 39 years. <sup>4-5</sup> With a mortality rate of 6.23 per 100,000, the outcome of breast cancer in Nigeria is among the worst globally.<sup>3</sup> This poor survival rate for breast cancer in Nigeria mostly stems from delay in presentation as most cases present at the advanced stage of the disease with increased likelihood of poor treatment outcomes. <sup>6</sup> Early detection of breast cancer through screening allows for prompt intervention, which may reduce the need for aggressive therapeutic options.

Most cases of late presentation of people with breast cancer to health care have been attributed to factors such as ignorance, low levels of education, poor health seeking behaviour, cultural beliefs, and practices. <sup>7</sup> Since stage at diagnosis of breast cancer is an important prognostic factor, early detection is

necessary for improving outcomes and the detection of breast cancer at early stage of disease with commencement of treatment is crucial to reducing its associated morbidity and mortality. <sup>8</sup> Thus, the importance of early identification of breast cancer in Nigerian women should be emphasized, since it significantly improves treatment effectiveness and survival rates.

Screening methods such as breast self-examination (BSE), clinical breast examination (CBE), mammography and magnetic resonance imaging (MRI) are some measures that have been employed to detect early breast changes with the aim of early detection of breast cancer which will improve disease prognosis and quality of life. <sup>9</sup> Among these means of early detection, BSE has been noted as the most affordable screening method, as women can be educated on how to perform it by themselves. <sup>9</sup>

This study investigated the knowledge, attitude and practice of breast cancer and

screening among female undergraduates of Ekiti State University, Nigeria. By conducting this study, we hope to identify gaps in the knowledge, attitude and practices relating to breast cancer and screening among the university students. The findings from the study are expected to contribute immensely to the design of breast cancer prevention campaign programs among young females in academic settings and the country at large.

## **MATERIAL & METHODS**

### **Study design and setting**

The study was conducted at the Ekiti State University, Ado-Ekiti, Ekiti State in Southwest, Nigeria using an institutional cross-sectional design to examine the knowledge, attitude and practice of female students regarding breast cancer and screening. The Ekiti State University is a State-owned institution which was established as Obafemi Awolowo University, Ado-Ekiti on 30<sup>th</sup> March, 1982 by the administration of Chief Michael Adekunle

Ajasin, the first civilian governor of Ondo State. The name of the university was changed to Ekiti State University in the year 2011. This is the oldest university in Ekiti State, it comprises of two colleges and over fifty departments with a student population now in excess of 25,000.

### **Study population**

The study was carried out among female students enrolled in courses at Ekiti State University. Only female students within the age range of 15-31 years were included in the study, provided they gave their consent. Female students without matriculation number or who had already completed their study at the university were excluded from the study.

### **Sample size determination**

The formula for determining sample size in a cross-sectional study was used to obtain a minimum sample size of 500. Multi-stage sampling was utilized to select participants.

All the students that met the study criteria were included as part of the sample and simple random sampling was used to select a level of study from the various faculties. Furthermore, a proportionate to size allocation strategy was deployed to recruit study participants from the University. Finally, simple random sampling technique was used to recruit the 500 students who participated in the study.

### **Data collection**

We utilized a close ended structured questionnaire and this was divided into 4 sections: general characteristics of respondents, knowledge of breast cancer, knowledge and practice of breast self-examination and attitude towards breast changes. The general characteristics of respondents included age, marital status, religion, faculty and academic year of study. The knowledge section consists of questions related to breast cancer, screening methods, risk factors, sources of information, signs and

symptoms. The practice section had questions on frequency of breast examination, timing of breast examination and method used to examine the breasts; while the attitude section had questions on participants response on discovering any breast changes.

Data collection was conducted using self-administered questionnaire distributed to the students, who were then requested to complete and return the questionnaire to members of the research team, Data collection took place in March, 2024. To ensure confidentiality, no personal identifiers such as name, home addresses or telephone numbers were linked to the respondents. Prior to this study, the questionnaire was pilot-tested among female students at Ekiti State College of Medicine to ensure reliability and consistency of the study instrument.

### **Data analysis**

The statistical analysis was done using computer software: Statistical Package for Social Sciences version 28.0 (IBM, USA version 28). Frequency distributions of all relevant variables were presented in tables. Chi-square was calculated for the dependent and independent variables.

### **Ethical consideration**

The ethical clearance was obtained from Ekiti State University Teaching Hospital Ethical and Research Committee with the following protocol number: **EKSUTH/A67/2024/04/004**.

## **RESULTS**

**Table 1:** General characteristics of respondents

| <b>Variable</b>          | <b>Frequency</b> | <b>%</b> |
|--------------------------|------------------|----------|
| <b>Age group (years)</b> |                  |          |
| 15 - 20                  | 250              | 50.0     |
| 21 - 25                  | 195              | 39.0     |
| 26 - 31                  | 55               | 11.0     |
| <b>Marital Status</b>    |                  |          |
| Single                   | 487              | 97.4     |
| Married                  | 13               | 2.6      |
| <b>Religion</b>          |                  |          |
| Christianity             | 472              | 97.4     |
| Islam                    | 13               | 2.6      |
| <b>Academic year</b>     |                  |          |
| 100                      | 34               | 6.8      |
| 200                      | 121              | 24.2     |
| 300                      | 220              | 44.0     |
| 400                      | 102              | 20.4     |

|                         |                  |          |
|-------------------------|------------------|----------|
| 500                     | 16               | 3.2      |
| 600                     | 7                | 1.4      |
| <b>Faculty</b>          | <b>Frequency</b> | <b>%</b> |
| Basic Clinical Sciences | 16               | 3.2      |
| Law                     | 23               | 4.6      |
| Basic Medical Sciences  | 195              | 39.0     |
| Clinical Sciences       | 30               | 6.0      |
| Education               | 19               | 3.8      |
| Management Science      | 28               | 5.6      |
| Science                 | 100              | 20.0     |
| Art                     | 34               | 6.8      |
| Social Science          | 29               | 5.8      |
| Engineering             | 11               | 2.2      |
| Agriculture             | 15               | 3.0      |

#### General characteristics of respondents

In total, 500 female undergraduate students participated from eleven (11) faculties in Ekiti State University, Ado-Ekiti and the comparative majority, 186 (37.2%) were in the Faculty of Basic medical sciences. Most

of the participants (89%) were between 15 and 25 years old, and 220 (44%) of them were in their third year of study. The majority of participants were Christians (97.4%), and 487 (97.4%) of them were single (Table 1).

**Table 2:** Knowledge of breast cancer

| <b>Variable</b>                                  | <b>Frequency</b> | <b>%</b> |
|--------------------------------------------------|------------------|----------|
| <b>Ever heard of breast cancer</b>               |                  |          |
| Yes                                              | 486              | 97.2     |
| No                                               | 14               | 2.8      |
|                                                  |                  |          |
| <b>Source of information</b>                     |                  |          |
| Social media                                     | 209              | 41.8     |
| School                                           | 110              | 22.0     |
| Hospital                                         | 83               | 16.6     |
| Others                                           | 53               | 10.6     |
| From a relative                                  | 31               | 6.2      |
|                                                  |                  |          |
| <b>Awareness of breast cancer signs/symptoms</b> |                  |          |
| Lump in the breast                               | 458              | 91.6     |
| Breast pain                                      | 423              | 84.6     |
| Redness of the breast                            | 380              | 76.0     |
| Orange peel appearance of the breast             | 362              | 72.4     |
| Bloody nipple discharge                          | 330              | 66.0     |
| Breast skin dimpling                             | 307              | 61.4     |
| Lump in the armpit                               | 278              | 55.6     |
| Recent nipple retraction                         | 259              | 51.8     |
| Breast ulcer                                     | 213              | 42.6     |
| Change in breast/nipple size                     | 105              | 21.0     |
|                                                  |                  |          |
| <b>Awareness of breast cancer risk factors</b>   |                  |          |
| Exposure to radiation                            | 384              | 76.8     |

|                                              |     |      |
|----------------------------------------------|-----|------|
| Family history                               | 382 | 76.4 |
| Genetic factors                              | 380 | 76.0 |
| Frequent use of hormonal based contraceptive | 267 | 53.4 |
| Smoking                                      | 266 | 53.2 |
| Alcohol consumption                          | 242 | 48.4 |
| Wearing tight bra                            | 210 | 42.0 |
| Pendulous breast                             | 207 | 41.4 |
| Old age                                      | 207 | 41.4 |
| Obesity                                      | 168 | 33.6 |
| Lack of exercise                             | 144 | 28.8 |
| Spiritual attack                             | 141 | 28.2 |
| Late menopause                               | 113 | 22.6 |
| Early menarche                               | 91  | 18.2 |
| Late childbirth                              | 84  | 16.8 |

#### Knowledge of breast cancer

Concerning breast cancer awareness, 486 (97.2%) of the respondents reported having heard of breast cancer. Social media was the major source of information, 209 (41.8) followed by School, 110 (22%) and Hospital, 83 (16.6%).

The symptoms of breast cancer most commonly identified correctly were breast lump (91.6%), pain in the breast (84.6%), and redness of the breast (76.0%). Change in

breast or nipple size was the least-identified breast cancer symptom (21%).

The risk factors for breast cancer most commonly identified correctly were exposure to radiation (76.8%), followed by a family history of breast cancer (76.4%).

Frequent use of hormonal based contraception and smoking were also correctly identified as risk factors by more than half of the participants (53.4% and

53.2%, respectively). Advanced age at first (16.8% and 18.2%, respectively) were the full term pregnancy and early menarche two least-identified risk factors (Table 2).

**Table 3:** Knowledge, practice and attitude towards breast self-examination

| <b>Variable</b>                                           | <b>Frequency</b> | <b>%</b> |
|-----------------------------------------------------------|------------------|----------|
| <b>Breast cancer screening methods aware of</b>           |                  |          |
| Breast self-examination                                   | 445              | 89.0     |
| Clinical breast examination                               | 230              | 46.0     |
| Breast ultrasound                                         | 223              | 44.6     |
| Mammography                                               | 183              | 36.6     |
| <b>Practice breast self-examination</b>                   |                  |          |
| Yes                                                       | 385              | 77.0     |
| No                                                        | 115              | 23.0     |
| <b>Frequency of breast self-examination performance</b>   |                  |          |
| Daily                                                     | 50               | 10.0     |
| Weekly                                                    | 50               | 10.0     |
| Monthly                                                   | 97               | 19.4     |
| Rarely                                                    | 303              | 60.6     |
| <b>Appropriate time of breast self-examination</b>        |                  |          |
| Anytime                                                   | 229              | 45.8     |
| Some days after menstruation                              | 146              | 29.2     |
| I don't know                                              | 102              | 20.4     |
| During menstruation                                       | 23               | 4.6      |
| <b>Reasons for not performing breast self-examination</b> | <b>Frequency</b> | <b>%</b> |
| I don't know how                                          | 132              | 26.4     |

|                                                  |     |      |
|--------------------------------------------------|-----|------|
| I don't think I'll find anything                 | 106 | 21.2 |
| Laziness                                         | 103 | 20.6 |
| I don't have breast problem                      | 83  | 16.6 |
| Others                                           | 76  | 15.2 |
| <b>Previous breast symptom(s) on examination</b> |     |      |
| Yes                                              | 89  | 17.8 |
| No                                               | 411 | 82.2 |
| <b>Action(s) taken</b>                           |     |      |
| Visited a doctor                                 | 47  | 52.2 |
| Ignored it                                       | 28  | 31.1 |
| Self-medicate                                    | 8   | 8.9  |
| Pray about it                                    | 7   | 7.8  |

#### Knowledge and practice of breast self-examination

In total, 445 (89%) participants were aware of breast self-examination and 385 (77%) had performed it. Most participants, 303 (60.6%) indicated they rarely performed breast self-examination. Only 97 (19.4%) performed breast self-examination once a month as recommended and 146 (29.2%) knew about the right timing for performing breast self-examination.

Most common reasons for not performing breast self-examination were “I don't know how” 132 (26.4%), “I don't think I'll find anything” 106 (21.2%), and “Laziness” 103 (20.6%).

The majority of the respondents 411 (82.2%) have not previously discovered abnormalities while examining their breasts and most of those that did find anything preferred to visit a doctor, 47 (52.2%). However, 28 (31.1%) chose to ignore it, 8 (8.9%) self-medicated while 7 (7.8%) prayed about it (Table 3).

## DISCUSSION

Breast cancer is the most common cancer and leading cause of cancer-related morbidity and mortality among women in Nigeria. Awareness of breast cancer and the regular practice of breast self-examination (BSE) has been noted to facilitate early detection of breast cancer, with associated better health outcomes including survival rates.<sup>10</sup> While there is an ongoing debate on the effectiveness of BSE to detect malignant breast tumours, it is undoubtedly important for creating breast self-awareness in resource-limited countries like Nigeria with no population screening programs. The majority of the respondents in this study ranged from 15 years to 25 years and so this study was appropriate for this age group of young adults who should be enlightened on breast cancer and BSE before they reach the age of common occurrence of the disease, in line with advice from health experts who indicated that women should begin breast examination as early as age twenty.<sup>11-12</sup>

Unlike a study among female undergraduate students in Ghana whereby less than three-quarters of their respondents had ever heard of breast cancer,<sup>13</sup> this present study found that almost all (97.2%) of the respondents were aware of breast cancer which was comparable to studies conducted among female undergraduate students in other parts of Nigeria such as Sokoto (96.3%),<sup>12</sup> Uyo (99%),<sup>14</sup> and Lagos (95%),<sup>15</sup> even in other countries like UAE (98.8%).<sup>16</sup> This high awareness of breast cancer among undergraduate students could be attributed to their level of education and consequent opportunity to obtain information from various sources. Moreover, it is unsurprising that the most common source of information about breast cancer reported in this study and in other similar studies<sup>5,7</sup> is social media as young people spend lots of time on social media and University students are expectedly well versed in the use of technology.

Similarly, awareness of BSE in this study was high (89%) and comparable to a similar study in Uyo (90%)(14) and in the South-east(11) where up to 98.9% of respondents had heard of BSE. However, in all of these studies including the present one, practice of BSE still fell below awareness which lends credence to the findings of a systematic review on knowledge and awareness of breast cancer that the rate of performance of BSE was resistant to changes in the levels of awareness or knowledge.<sup>17</sup> Hence, while awareness creation is necessary, implementation research to bridge the gap between knowledge and positive breast health behaviors are also important. For instance, the health belief model suggests that regardless of knowledge, it is when a woman perceives herself at risk of breast cancer that she is more likely to practice BSE.<sup>11</sup>

It is noteworthy and concerning that the most common reason for not performing BSE reported by participants in this study was “I

do not know how to perform BSE.” Studies involving undergraduate students in UAE<sup>16</sup> and Ethiopia<sup>18</sup> also reported similar reasons for not performing BSE and in Uyo,<sup>14</sup> 16% of respondents were completely ignorant of how it is done. Furthermore, it is obvious from this study that even those that performed BSE did not know the right timing and frequency for performing BSE which was comparable to reports from studies in Uyo<sup>14</sup> and Lagos,<sup>15</sup> UAE<sup>16</sup> and Ghana.<sup>13</sup> Again, even in a study in Abakaliki<sup>19</sup> where majority (63.6%) of respondents practiced BSE, only 25% of them knew the proper timing and frequency. These comparable findings across various regions in Nigeria<sup>5,6,10</sup> and in other countries like UAE,(16) Ethiopia<sup>18</sup> and Ghana<sup>13</sup> signal that improving knowledge about breast cancer and BSE among female university students is relevant globally and the need to include hands-on training on BSE as part of breast cancer awareness

campaigns/programs. Educational interventions such as elective courses on key aspects of women's health including provision of free BSE training courses may be effective.

More than half of the participants did not recognize increasing age, obesity, late menopause, early menarche and late age at first full term pregnancy as potential risk factors for breast cancer, and about one-third of this study respondents held the belief that spiritual attacks can result in breast cancer. This is in line with other studies among women which suggests that women still have misconceptions about the cause of breast cancer,<sup>13</sup> and could partly explain why only about half of the respondents (52.2%) in this

## CONCLUSION

In conclusion, while general knowledge on breast cancer was high among the study population, the practice of BSE among female undergraduate students in Ekiti State University was generally unsatisfactory.

study visited a doctor when they observed an abnormality in the breast unlike the study in Uyo where it was up to 90%.<sup>14</sup> The most commonly identified symptoms of breast cancer among this study participants were "lump in the breast" and "pain in the breast" which was also the case in similar studies conducted in Ghana<sup>13</sup> and Ethiopia.<sup>18</sup> This finding could be explained by the obvious nature of these two symptoms and the publicity they receive in most breast cancer awareness campaigns which points to the need for dissemination of more comprehensive information about breast cancer during breast cancer awareness programs.

Given that social media was the most important source of information among this study population, it could be utilized to deliver reliable and comprehensive health education on breast cancer including correct

practice of BSE. This is largely emphasized for younger women where the disease is known to be more aggressive with accompanying worse outcome and proper education of female students will have a positive impact on the society at large.

### **RECOMMENDATION**

It is recommended that in developing countries like Nigeria where there is no nationwide population-based breast screening program due to limited resources, BSE which is a simple, inexpensive, non-invasive, and non-hazardous intervention that is not only acceptable, cost-effective and appropriate, but also encourages women to take an active responsibility in preventive health should be considered. Thus, until circumstances allow for routine breast screening in Nigeria, emphasis should be directed to encouraging women to practice BSE as scholars argue that practicing BSE make women more “breast aware” and consequently more liable to detect tumours

since many breast tumours are discovered by women themselves.

### **LIMITATION**

This study findings should be considered in light of some limitations. First, it may not be generalized beyond the study population who are young and well-educated women. Thus, they are not representative of the general population and their level of knowledge and BSE practice may differ from that of the general population. Nevertheless, the results of this study provide some understanding regarding the knowledge and practice of BSE which can be useful for directed health promotion and education.

### **CONFLICT OF INTERESTS**

None to declare

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