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Indian Cancer Awareness Journal

Article in Press

Original Article

Breast Cancer Awareness and Practice of Self-Breast Examination among Biochemistry Students in Federal University Birnin Kebbi Nigeria

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Received: 22 November 2023
Accepted: 20 February 2024
EPub Ahead of Print: 17 April 2024
Published:

DOI
10.25259/ICAJ_26_2023

Quick Response Code:

ABSTRACT

Objectives: The objectives of the study were to assess the breast cancer awareness and practice of self-breast examination amongst female biochemistry students and to find out the statistically significant association between their level of practice regarding self-breast examination with their selected sociodemographic variables.

Materials and Methods: The research design used for this study was a descriptive survey, purposive sampling technique was used to select 60 Biochemistry Students at Federal University Birnin Kebbi, Nigeria. This research was conducted within ten months (from January 2023 to October 2023). Data were collected using structures related to breast cancer awareness and the practice of self-breast examination. The collected data were tabulated in Excel and transported to IBM Statistical Package for the Social Sciences version 20.0.

Results: The results showed that the majority of 38 (63.3%) had moderate, 17 (28.3%) had adequate and only 5 (8.3%) had an inadequate level of awareness regarding breast cancer. Therefore, the $H_{0:1}$ hypothesis was rejected, whereas the $H_{1:1}$ hypothesis was accepted. The results revealed that, out of 60 (100%) respondents, all of them had a positive attitude toward self-breast examination. Hence, the $H_{0:2}$ hypothesis was rejected, whereas the $H_{1:2}$ hypothesis was accepted. The results showed that there was a statistically significant association between their levels of awareness regarding breast cancer with their selected sociodemographic variables such as area of residence (urban) $P < 0.001$. Hence, the $H_{0:3}$ hypothesis was rejected, whereas the $H_{1:3}$ hypothesis was accepted.

Conclusion: There was a statistically significant association between their levels of awareness regarding breast cancer with their selected sociodemographic variables such as area of residence (urban). The recommendation was given to conduct a similar study in a different setting using a large sample for generalisation of the findings.

Keywords: Breast cancer, Awareness, Practice, Self-breast examination, Students

INTRODUCTION

Breast cancer is the uncontrolled growth of abnormal cells in the milk-producing glands of the breast or in the ducts that deliver milk to the nipples. Breast cancer is the most common invasive cancer affecting women worldwide. It comprises 22.9% of invasive cancers in women and 16% of all female cancers. It affects about 12% of the women population worldwide. A report on the incidence of breast cancer reveals that one out of every eight women in the world stands a chance of having the disease in her lifetime.[1] It was reported that the Age-Standardised Incidence Rate of BC was 29.1/100,000 in Asia, 67.6/100,000 in the United States of America (USA) and

71.1/100,000 in Europe. The mortality-to-incidence ratio was much higher with about 0.35 in Asia in comparison to 0.21 in the USA and 0.23 in Europe.[2] In Africa, breast cancer was also the most commonly diagnosed cancer and the second leading cause of death amongst women in 2008; 92,600 cases and 50,000 deaths were reported that year. Cancer is a growing burden and continues to receive relatively low public health priority in Africa because of limited resources and more attention given to communicable diseases.[3]

However, breast cancer is already a well-known health problem in Nigeria, with about one death in every 25 reported cases. The continuous rise in the number of breast cancer cases and deaths in Nigeria is worrisome; this ugly situation confirms the Lakeshore Cancer Centre's prediction that breast cancer cases may rise to 42 million by 2020 in the country.[4] The clinical stage of Breast cancer at the time of presentation is regarded as one of the most substantial prognostic factors of survival. The 5-year overall survival rates for patients with localised and regional diseases are very favourable and may reach up to 99% and 85%, respectively. Conversely, the 5-year overall survival rate for patients with metastatic disease is very dismal and may drop down significantly to as low as 27%.[5] Breast self-examination (BSE) is a non-invasive procedure performed by the individual monthly to determine a normal breast and recognise any change in the breast for early medical care to be sought. Evidence shows that nine out of ten breast lumps are detected by the women themselves.[6] BSE clinical breast examination and mammography are commonly recommended screening methods. Breast self examination is a screening technique for early breast cancer detection that women can perform at home.

Moreover, this is a simple, inexpensive, easy and effective technique that allows women to examine their breast tissue for any physical or visual changes. BSE increases women's chances for treatment, thereby increasing the survival rate in women.[7] Adult women of all ages are encouraged to perform BSE at least once a month. Johns Hopkins Medical Centre states that, fourty percent of diagnosed breast cancers are detected by women who feel a lump, so establishing a regular BSE is very important.[8] Besides women, breast cancer is also common in men, though little attention is shown to the latter sex.[9] Another study result revealed that a total of 400 students participated from two private and two public universities (100 from each university). Out of all, 60.5% had the presence of knowledge (i.e., heard) about BSE. The average knowledge score was 7.41 ± 3.27 (on a scale of 0–15). Amongst those who knew BSE, only 10.7% of participants practiced it monthly. Being in a public university (adjusted odds ratio [aOR]: 3.42, 95% confidence interval [CI] 1.73–6.74) and years of education (aOR: 1.42, 95% CI: 1.02–1.97) were significant determinants of the presence of knowledge regarding BSE. Moreover, studying in public universities (β: 0.99; 95% CI 0.16–1.82) and education years passed (β: 0.51; 95% CI: 0.18–0.85) were associated with a higher knowledge score. The practice of BSE was negatively associated with students' rural living before admission (aOR: 0.26, 95% CI: 0.08–0.79) and positively associated with the level of knowledge regarding BSE (aOR: 1.48; 95% CI 0.08–0.79).[10]

In addition, in recent times, studies have shown that there has been an increase in the death rate amongst women and adolescent children, most of which has been attributed to late detection of breast cancer and negligence in BSE.[11] Hence, the investigator felt the need and desire to carry out a study to assess the breast cancer awareness and practice of self-breast examination amongst female Biochemistry Students at Federal University Birnin Kebbi, Northwest, Nigeria.

Aim

The study aimed to assess the breast cancer awareness and practice of self-breast examination amongst female biochemistry students; and to find out the statistically significant association between their level of practice regarding self-breast examination with their selected sociodemographic variables.

Research hypotheses

- $H_{1:1.}$ There was a significant awareness regarding breast cancer
- $H_{1:2.}$ There was a positive practice regarding the self-breast examination
- $H_{1:3}$ There was a statistically significant association between their levels of awareness regarding breast cancer with their selected sociodemographic variables.

MATERIALS AND METHODS

Study design and population for the study

The research design used for the study was a descriptive survey design to assess the breast cancer awareness and practice of self-breast examination amongst female Biochemistry Students at Federal University Birnin Kebbi, Nigeria.

Sample size and sampling technique

A purposive sampling technique was used to select female Biochemistry Students at Federal University Birnin Kebbi, Nigeria. The sample size of this study was 60 respondents who were selected from the target population, which are female Biochemistry Students at Federal University Birnin Kebbi, Northwest Nigeria.

Inclusion criteria

Only female Biochemistry Students at Federal University Birnin Kebbi, Northwest Nigeria; those who were willing to participate and were available during data collection were included in this study.

Exclusion criteria

Female Biochemistry Students who were not willing to participate in the study and those who were not available during data collection were excluded from the study.

Development and description of the tool

The researcher prepared a questionnaire to collect data from Female Biochemistry Students. The tool used for the research study was a self-structured questionnaire which was prepared to assess breast cancer awareness and practice of self-breast examination. The tool was formulated based on the clinical experience of the investigator, consultation of experts, extensive library search and review of literature. The instrument for data collection was a self-structured, closed-ended questionnaire to suit the research objectives. The questionnaire consisted of three sections: sections A, B and C.

Section A

It consisted of demographic variables of students including six items such as age, marital status, religion, level of study, area of residence, source of information and previous knowledge regarding breast cancer.

Section B

It consisted of a self-structured questionnaire on breast cancer awareness. There were 20 awareness questions; each question had multiple choice with four responses (a, b, c and d). Each correct answer was given a score of one mark, whereas the wrong answer and unanswered score were zero. The maximum score was 20. The level of awareness score was interpreted as adequate, moderate and inadequate [Table 1].

Section C

It consisted of a self-structured questionnaire on self-breast examination. There were ten practice questions, each question had multiple choice with four responses (a, b, c and d). Each correct answer was given a score of one mark, whereas the wrong answer and unanswered score were zero. The maximum score was 10. The level of practice score was interpreted as positive and negative [Table 2].

Method of data collection

The data were collected from the respondents and were analysed using descriptive and inferential statistics with the aid of IBM Statistical Package for the Social Sciences version 20.0. Sample criteria were analysed by frequency and percentage distribution tables. The Chi-square test was used to find out the association between their level of awareness regarding breast cancer with their selected sociodemographic variable.

RESULTS

As shown in Table 3, the age range of participants is between 18 and 20 years, 21–23 years ≥24 years, which accounted for 18 (30.0%), 37 (61.7%) and 5 (8.3%), respectively. The majority, 56 (93.3%), are unmarried, 3 (5.0%) are married, whereas 1 (1.7%) is a widow. Fourteen (23.3%) are practising Christianity. Similarly, 46 (76.7%) are practising Islam. In terms of level of study, 100, 200, 300 and 400 all represent 15 (25%). According to the area of residence, 22 (36.7%) of the respondents are residing in rural areas, and the majority 38 (63.3%) are from urban areas. Fourty (66.7%) of the participants got their source of information through social media, 10 (16.7%) from family and friends, and 10 (16.7%) from health workers. Fourty-five (75%) of the respondents had previous awareness of breast cancer, whereas 15 (25.0%) had no previous awareness.

As shown in Table 4, the majority, 38 (63.3%) had moderate, 17 (28.3%) had adequate and only 5 (8.3%) had an inadequate level of awareness regarding breast cancer.

As revealed in Table 5, out of 60, (100%) respondents had a positive attitude toward self-breast examination.

As shown in Table 6, there was a statistically significant association between their levels of awareness regarding breast cancer with their selected sociodemographic variables, such as area of residence (urban) $P = 0.001$.

DISCUSSION

Alsareii *et al.* conducted a study on Awareness of breast cancer among female students and faculty from Najran

Table 1: Level of awareness score.

Level of awareness	Score	Percentage
Adequate	15–20	≥75
Moderate	10–14	≥50 <75
Inadequate	0–9	≤45

Table 2: Level of practice score.

Level of knowledge	Score	Percentage
Positive	5–10	≥50
Negative	0–4	≤40

Table 3: Respondents sociodemographic variables (n=60).

S. No.	Variable	Frequency	Percentage
1.	Age		
	18–20	18	30.0
	21–23	37	61.7
	24 and above	5	8.3
2.	Marital status		
	Unmarried	56	93.3
	Married	3	5.0
	Widow	1	1.7
3.	Religion		
	Christianity	14	23.3
	Islam	46	76.7
4.	Level of study		
	100	15	25.0
	200	15	25.0
	300	15	25.0
	400	15	25.0
5.	Area of residence		
	Rural	22	36.7
	Urban	38	63.3
6.	Source of information		
	Social media	40	66.7
	Family and friends	10	16.7
	Health workers	10	16.7
7.	Previous awareness		
	Yes	45	75.0
	No	15	25.0

Table 4: Respondents levels of awareness of breast cancer (n=60).

S. No.	Level of awareness	Score range	Frequency	Percentage
1.	Inadequate	0–4	5	8.3
2.	Moderate	50–60%	38	63.3
3.	Adequate	70–100%	17	28.3

Table 5: Respondents practice of self-breast examination (n=60).

S. No.	Level of practice	Score range (%)	Frequency	Percentage
1.	Positive	50–100	60	100.0
2.	Negative	0–40	0	0.0

University, Najran, Saudi Arabia the study found a total of 232 students participated in the study. The study found that the majority (75.3%) of the students had good general awareness about breast cancer.[5]

Abo Al-Shiekh *et al.* conducted a study on breast cancer knowledge and the practice of BSE amongst female University students in Gaza. The findings showed that the majority (69.8%) of the students had a positive level of practice.[2]

In another study conducted by Idowu *et al.* conducted a study on Breast cancer awareness, knowledge and screening practices amongst women residents in an urban local government area of Oyo State, Nigeria. The findings showed that there was a significant association between their levels of awareness regarding breast cancer and with level of education, having tertiary education ($P < 0.001$), ever using family planning methods ($P = 0.018$), ever heard of breast cancer ($P < 0.001$), ever heard of breast examination ($P < 0.001$) and having relatives who had died with breast cancer ($P = 0.018$).[12]

The key findings of this study showed that the sociodemographic variables showed that the age range of participants is between 18 and 20 years, 21–23 years and ≥24 years, which accounted for 18 (30.0%), 37 (61.7%) and 5 (8.3%), respectively. The majority, 56 (93.3%), are unmarried, 3 (5.0%) are married, whereas 1 (1.7%) is a widow. Fourteen (23.3%) are practising Christianity. Similarly, 46 (76.7%) are practising Islam. In terms of the level of study, 100, 200, 300 and 400 all represent 15 (25%). According to the area of residence, 22 (36.7%) of the respondents are residing in rural areas, and the majority 38 (63.3%) are from urban areas. Fourty (66.7%) of the participants got their source of information through social media, 10 (16.7%) from family and friends, and 10 (16.7%) from health workers. Fourty-five (75%) of the respondents had previous awareness of breast cancer, whereas 15 (25.0%) had no previous awareness.

The results showed that, out of 60 (100%) respondents, the majority, 38 (63.3%), had moderate, 17 (28.3%) had adequate and only 5 (8.3%) had an inadequate level of awareness regarding breast cancer. Therefore, the $H_{0:1}$ hypothesis was rejected, while the $H_{1:1}$ hypothesis was accepted. This conforms with a study conducted by Lee *et al.* on Breast Cancer Awareness and Knowledge Assessment amongst Men and Women in Malaysia using a cross-sectional descriptive study. The study results revealed that the majority (76.5%) of the respondents have moderate awareness of breast cancer.[13]

The results revealed that, out of 60 (100%) respondents, all of them had positive practices towards the self-breast examination. Hence, the $H_{0:2}$ hypothesis was rejected, whereas the $H_{1:2}$ hypothesis was accepted. This conforms with a study conducted by Parle and Gupta, on breast cancer knowledge, attitude, and self-examination practices practices of physiotherapy students in India: A cross-sectional study. The study results revealed that the majority (62.6%) of the students had positive practice toward the self-breast examination.[14]

The results showed that there was a statistically significant association between their levels of awareness regarding breast cancer with their selected sociodemographic variables such as area of residence (urban) $P < 0.001$. Hence, the $H_{0:3}$ hypothesis was rejected, whereas the $H_{1:3}$ hypothesis was accepted. This conforms with a study conducted by Mohamed on Awareness and Knowledge towards Breast Cancer and BSE: A Cross-Sectional Descriptive Study

Table 6: Association between the levels of awareness of the respondents with their selected sociodemographic variables (*n*=60).

Sociodemographic variables	Level of awareness						Chi-square	*P*-value
	Adequate		Moderate		Inadequate			
	F	%	F	%	F	%		
Age								
18–20 years	4	6.7	12	20	2	3.3	2.34	0.670
21–23 years	11	1.8	24	40	2	3.3		
≥24 years	2	3.3	2	3.3	1	1.7		
Marital status								
Unmarried	16	26.7	35	58	5	8.3	0.89	0.930
Married	1	1.7	2	3.3	0	0.0		
Widow	0	0	1	1.7	0	0.0		
Religion								
Christianity	4	6.7	8	13	2	3.3	0.89	0.640
Islam	13	21.7	30	50	3	5		
Area of residence								
Rural	12	20.0	12	20.0	2	3.3	13.1	0.001[s]
Urban	4	6.7	28	46.7	2	3.3		
Level of study								
100l	6	1.0	9	1.5	0	0.0	10.8	0.090
200l	2	3.3	9	15	4	6.7		
300l	5	8.3	10	16.7	0	0.0		
400l	4	6.7	10	16.7	1	1.7		
Previous knowledge								
Yes	12	2.0	29	48.0	4	6.7	0.28	0.870
No	5	8.3	9	15	1	1.7		

s: Statistically significant

amongst Undergraduate Female Students at Cairo University, Egypt; the study results showed that there was a statistically significant association between their place of residence with their levels of awareness regarding breast cancer (P = 0.001).[15]

CONCLUSION

The results revealed that the majority of the respondents had moderate awareness regarding breast cancer, and all had positive practices toward the self-breast examination. There was a statistically significant association between their levels of awareness regarding breast cancer with their selected sociodemographic variables such as area of residence (urban).

Recommendations

Based on the study findings, the researcher recommends that a similar study be conducted on awareness of breast cancer and self-breast examination using different settings and a large sample for generalisation of the findings.

Ethical approval

Approval has been obtained from Institutional Ethical Committee, Faculty of Sciences, Federal University, Birnin Kebbi, Kebbi, Nigeria. With Ref. No.: FS/FUBK/003, which was dated on 6th, Feb. 2023.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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How to cite this article: Umar S, Abdulkarim S. Breast Cancer Awareness and Practice of Self-Breast Examination among Biochemistry Students in Federal University Birnin Kebbi Nigeria. Indian Cancer Awareness J. doi: 10.25259/ICAJ_26_2023