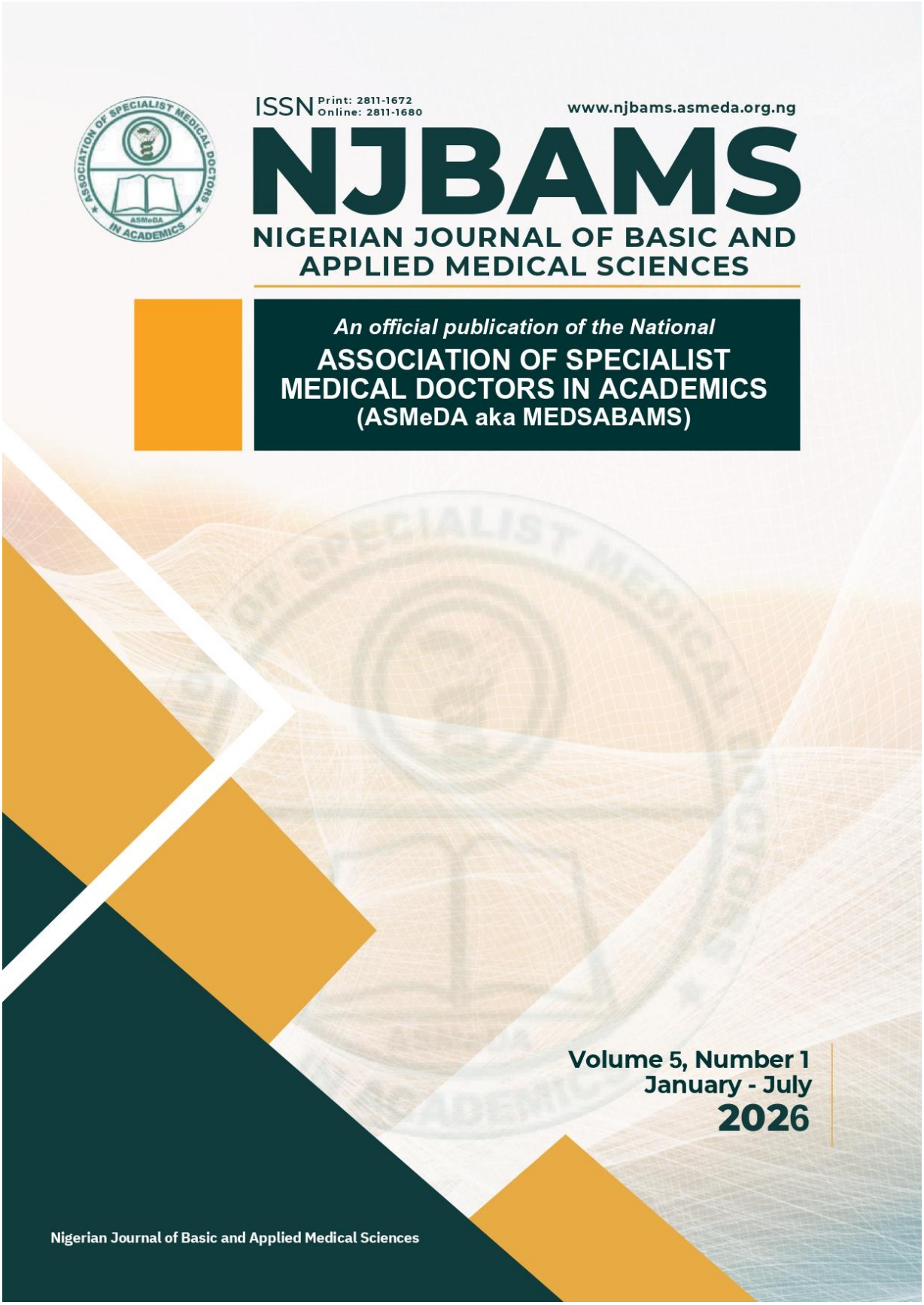

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Knowledge and Awareness of Breast Cancer Screening Methods among Patients Attending Gynae/Antenatal Clinic of Obstetrics / Gynaecology Department of a Nigerian Tertiary Hospital

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ABSTRACT

Background: Breast cancer is the most common cancer among women worldwide. It is also the most common cause of cancer-related deaths in women. Unlike many other forms of cancer, breast cancer has the advantage of being potentially detectable at an early stage, making early diagnosis and intervention possible through breast cancer screening.

Aim: The study aimed at assessing the knowledge, awareness and practice of breast cancer screening methods among patients attending the Gynae/Antenatal clinic of the O&G department of a Nigerian Tertiary Hospital.

Methods: The prospective cross-sectional study was conducted in Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto, Nigeria, from October 2024 to November 2024. A convenience sampling method was employed, the sample size calculated was 94 but was upgraded to 100. The data was analysed using Microsoft Excel and descriptive statistics (mean, frequency and percentage).

Results: A total of 100 questionnaires were distributed and 99 were returned. The majority of the respondents 56 (56.6%) were within 21-30 years, all the participants were married 99(100%), most of them 43(43.4%) were housewives, 73(73.7%) were Hausa/Fulani and 85(85.9%) practices Islam. The proportion of the participants who had heard of mammography screening is 34(34.4%), breast self-examination 74(74.8%) and clinical breast examination 40(40.4%), Only 5(5.1%) reported to have ever done mammography screening, and 61(61.6%) responded they practices BSE. 43(43.4%) know that CBE is a useful method for early detection of breast cancer, and the majority, 52(52.5%) responded it is performed by a doctor.

Conclusion: This study reveals a significant disparity in the awareness and utilization of breast cancer screening methods. While there is high awareness (74.8%) and practice (61.6%) of breast self-examination (BSE), there is notably poor knowledge and practice regarding mammography and clinical breast examination (CBE). These findings highlight an urgent need for targeted educational interventions within clinical settings to improve the uptake of professional screening modalities among women in the study centre in particular and North Western Nigeria in general.

Keywords: knowledge, awareness, breast, cancer, breast self-examination, mammography.

INTRODUCTION

Breast cancer worldwide is viewed as the main cause of cancer deaths in females, being the most commonly diagnosed cancer and accounting for 23% (1.38 million) of the total new cancer cases and 14% (458,400) of the total cancer deaths in 2008 (1). Developing countries account for around 50% of breast cancer cases and a disproportionate 60% of breast cancer mortalities (2). Unlike many other forms of cancer, breast cancer has the advantage of being potentially detectable at an early stage, making early diagnosis and intervention possible (3). Recognising the critical link between early detection and improved breast cancer outcomes, screening methods have been established to identify the disease at its earliest stages, when treatment can be most effective in reducing mortality and enhancing patient outcomes (4).

Screening methods can decrease mortality by over 25%, by detecting breast cancer early and greatly improving treatment effectiveness, while according to experts, early diagnosis can give a 97% survival rate for the patient in the first 5 years. They also suggest that women undergo regular and monthly screenings to maximize their chances of early detection and successful treatment (5). For early detection of breast cancer, three screening methods are recommended, in order of importance: mammography, clinical breast examination and breast self-examination (6). According to the American Cancer Society, women should be informed about the benefits and limitations of regular breast self-exams, beginning at age 20 (7).

The American Cancer Society also recommends Breast Self-examination (BSE) for early detection of breast cancer (8). Studies indicate that a significant number of early breast cancer cases are self-discovered(9), and that most breast tumours found at an early stage are discovered by women who regularly practice Breast Self-Examination (BSE) (10).The American Cancer Society guidelines for early detection of breast cancer recommend yearly mammograms starting at the age of forty, clinical breast examination(CBE) about every three years for women in their twenties and thirties, and every year for women at age forty and over (11). The effectiveness of breast cancer screening largely depends on the awareness, knowledge, and practices of individuals.

Awareness refers to the recognition of breast cancer as a health risk, while knowledge encompasses understanding the available screening methods, their benefits, and the appropriate age and frequency for screenings. Practices involve the actual implementation of these screening methods, such as regular mammograms or performing self-examinations (12). Breast cancer is curable if detected early and there are two major components of early detection of breast cancer: education to promote early diagnosis and screening. Most of the total deaths from the disease are accounted for in the developing world. The low survival rates in less developed countries may be explained mainly by a lack of early detection programmes, lack of adequate diagnosis and treatment facilities which results in a high proportion of women presenting with late-stage disease (13).

According to a comprehensive study in 2004, breast cancer was the leading cancer type among women worldwide and it was the leading cause of death for women globally, the second in Africa and Southeast Asia after cervical cancer while it was in the fifth place in the Western Pacific region (14). The peak incidence of breast cancer in Nigerian women is about a decade earlier than in Caucasians, with a significantly higher proportion – approximately 57% of cases occurring in women under the age of 50 (15). Unfortunately, a significant majority (70%) of Nigerian women with breast cancer present at a late stage, at which point treatment is of little benefit, resulting in minimal or no benefit from therapy (15).

Moreover, a study conducted by Mohammed et al., in 2022 (16) among final-year female students of a faculty in a Nigerian University revealed that there is inadequate knowledge of breast cancer and its screening methods. In view of the above, research gaps like how often ladies check on their breast medically and the study participants' awareness to avoid late-stage presentation of breast cancers as they are breastfeeding or about to be breastfeeding mothers are sought for. This study aims to assess the current level of knowledge and awareness of breast cancer screening methods among patients attending gynaecology/antenatal in the Obstetrics & Gynaecology (O & G) department of Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto.

MATERIALS AND METHOD

Ethical Clearance

An application for ethical approval was submitted to the health research and ethical committee of UDUTH, ethical clearance was approved with approval number UDUTH/HREC/2024/1451/V1. Consent forms were distributed to the participants

informing them that participation is voluntary and all answers provided are strictly confidential.

Research Design
A qualitative prospective cross-sectional study design.

Study Area
The study was conducted in the gynaecology/antenatal clinic of the O&G department UDUTH Sokoto, Nigeria.

Source of data
Primary source of data.

Study Population
All patients attending the gynaecology/antenatal clinic of the O&G department UDUTH during the study period.

Sample Size Determination
Sample size was calculated using Taro Yamane's formula for finite population which is given by: $n=N/1+N(e)^2$ (17)
Where:
n= Required sample size under study
N= Total population under study
e= Margin of error denoted by 0.05
Total population under study= 122 (Mohammad et al 2022 (16))
n=122
n=122/1+ 122(0.0025)
n= 122/1+0.305
n=93.48
n= 94.

Sampling method
A convenient sampling.

Selection Criteria
Inclusion Criteria
All patients attending the gynaecology / antenatal clinic of the O&G department UDUTH for antenatal check-up within the study period.
Exclusion Criteria
All patients attending the gynaecology/antenatal clinic for a purpose other than antenatal care, e.g, papsmear.

Instrument for Data Collection
A semi-structured questionnaire which was adopted and modified from Madubogwu et al. in 2017 (18) was used as an instrument for the data collection.

Data Collection Procedure
The questionnaire was distributed to the patients attending the gynae/ antenatal clinic for antenatal check-up, the contents of the questionnaires were explained to the patients and translated to the most common language spoken by almost all in the study area (hausa) for those who don't understand English. The Questionnaires were returned a few hours after the distribution; 100 questionnaires were distributed but 99 were returned.

Data Analysis
The obtained data was analysed with descriptive statistics (mean, frequency, percentage and charts) and Microsoft Excel.

RESULTS

A total of 100 questionnaires were distributed among the patients attending the Gynaecology/antenatal clinic of the O&G department UDUTH and 99 were returned. The response rate of the participants is 99%. The questionnaire consisted of four sections; Socio-demographic characteristics of the respondents, Knowledge, practice and awareness of Mammography, Knowledge, awareness and practice of breast self-examination (BSE), and Knowledge, awareness and practice of clinical breast examination (CBE). From the socio-demographic characteristics of the respondents presented in Table 1, most of the respondents 56 (56.6%) were within the age range of 21-30 years. It also showed that the majority 43 of 99 (43.4%) of the respondents were Housewives, with the least 15 (15.2%) having other professions apart from the ones mentioned in the questionnaire. All of the respondents, 99(100%) were married.

Table 1: Socio-Demographic of Respondents showing age range of 21 – 30 with the highest frequency

Variables	Frequency	Percentage
Age(years)		
Below 20	13	13.1
21-30	56	56.6
31-40	26	26.3
41-50	4	4.0
50 above	0	0
Mean age		
total	99	100
Profession		
Housewife	43	43.4
Student	21	21.2
Civil servant	20	20.2
Others	15	15.2
Total	99	100
Marital status		

Married	99	100
Single	0	0
Widowed	0	0
Total	99	100
Tribe		
Hausa/Fulani	73	73.74
Yoruba	9	9.09
Igbo	7	7.07
others	10	10.1
Total	99	100
Religion		
Islam	85	85.86
Christianity	14	14.14
Others	0	0
Total	99	100

Table 2 shows the awareness of the respondents about mammography screening. The majority of the respondents 64(64.6%) have not heard of mammography screening.

Table 2: Respondents' awareness about mammography showing hospital as the highest source of information

Variables 1	**Yes Frequency**	**Yes Percentage (%)**	**No Frequency**	**No Percentage (%)**
Have you heard of mammography screening?	35	35.40	64	64.60
Variables 2: *What are your sources of information?				
Hospital	20	20.20		
Books	2	2.02		
Media (Internet, TV, Radio)	19	19.20		
Lecture	2	2.02		
Conference/Seminar	0	0.00		
Others	9	9.09		
Total	43	100.0 0		

(*means multiple responses were considered)

Table 3, shows the respondents' knowledge and practice of mammography, out of which, only 5(5.1%) had ever done mammography screening and the majority 94(94.95%) had never done it. The majority of the respondents 66(66.7%) did not know that mammography is a useful tool for early detection of breast cancer.

Table 3: Respondents knowledge and practice of mammography screening showing only 5% of the respondents have ever done mammography

Variables 1	**Yes (frequency)**	**Yes (%) percentage**	**No (Frequency)**	**No (%) Percentage**
Have you ever done a mammography?	5	5.10	94	95.0
Do you know that mammography screening is a useful tool for early detection of cancer?	33	33.30	66	66.7
Variables 2	**Frequency**	**Percentage (%)**		
At what age should it be started?				
Puberty	7	7.07		
From 20years	9	9.09		
At menopause	11	11.11		
From 40years	3	3.03		
No idea	69	69.7		
Total	99	100.00		
How often should it be done?				
Weekly	4	4.04		
Monthly	7	7.07		
Yearly	20	20.2		
When a lump if found from	2	2.02		

BSE and CBE		
No idea	66	66.67
Total	99	100.00
Mammography is performed by?		
Doctor	11	11.11
Radiographer	21	21.21
Nurse	3	3.03
No idea	64	64.65
Total	99	100.00
***The indications for mammography include**		
Pain in the breast	26	26.30
Lump in the breast	27	27.30
Breast engorgement	15	15.20
Itchiness and breast discoloration	12	12.12
Asymmetry of breast	8	8.08
Nipple retraction	5	5.05
No idea	61	61.62
Total	154	100.00
***Mammography is contraindicated in?**		
Pregnancy	31	31.31
Lactation	15	15.20
Infertility	3	3.03
Post mastectomy	2	2.02
No idea	62	62.63
Total	113	100.00

Table 4 shows the respondents' knowledge, awareness, and practice of BSE. Majority of the respondents 74(74.8%) have heard of BSE, while 73(73.7%) know that it's a useful method in the early diagnosis of breast cancer. Table 5 shows the respondents knowledge awareness and practice of CBE. The majority of the respondents 59 (59.6%) have not heard of CBE, and 56 (56.6%) of them don't know that it's a useful tool in the early diagnosis of breast cancer

Table 4: Respondents knowledge, awareness and practice of BSE showing 61.6% of the respondents practice BSE

Variables 1	**Yes Frequency**	**Yes (%) Percentage**	**No Frequency**	**No (%) percentage**
Have you heard of BSE?	74	74.75	25	25.25
Do you know that BSE is a useful method for early detection of breast cancer?	73	73.74	26	26.26
Do you practice BSE?	61	61.62	38	38.38
Variables 2	**Frequency**	**Percentage (%)**		
How often should BSE be done?				
Daily	6	6.06		
Weekly	9	9.09		
Monthly	43	43.43		
Yearly	1	1.01		
No idea	40	40.40		
BSE should				

be done using?		
Mammography machine	1	1.01
Ultrasound	2	2.02
Hand	76	76.77
No Idea	20	20.20

Table 5: Respondents' knowledge, awareness, and practice of CBE, showing 40.4% have heard of CBE

Variables 1	**Yes Frequency**	**Yes (%)**	**No Frequency**	**No (%)**
Have you heard of CBE?	40	40.40	59	59.6
Do you know that CBE is a useful method for early detection of breast cancer?	43	43.43	56	56.57
Variables 2	**Frequency**	**Percentage (%)**		
CBE is performed by a?				
Doctor	33	33.30		
Radiographer	8	8.08		
Nurse	6	6.06		
No idea	52	52.53		
How often should CBE be done?				
Daily	4	4.04		
Monthly	18	18.18		
Yearly	2	2.02		
No idea	75	75.76		
Total				
CBE should be done using?				
Mammography machine	9	9.09		
Ultrasound	8	8.08		
Hand	25	25.25		
No idea	57	57.58		

DISCUSSION

Lipid profiles are critical markers of metabolic and Mammography, BSE and CBE are well recognised and the gold standard for the screening of breast cancer. Knowledge, awareness and practice of these screening methods play a vital role in early detection and optimal treatment of breast cancer. The results of this study as shown in Table 2 revealed that the awareness of mammography is poor, this is similar to the study conducted in Ilorin - Nigeria (19) and Sokoto - Nigeria (16) that reported majority of the participants had poor knowledge of mammography. The similarities of the studies might be due to the age range of the participants in both studies which is not up to the recommended age for mammography screening.

Moreover, our findings on knowledge of mammography is also similar to the study conducted among women of the Qassim region in Saudi Arabia (20), which reported that among the study participants there was no adequate knowledge about breast cancer signs, symptoms, and risk factors. The result of our study is contrary to the study conducted in the Kingdom of Saudi Arabia (21) and Nnewi, Anambra state - Nigeria (18), where both studies reported that the majority of the respondents had adequate awareness of mammography as an effective tool for breast cancer screening. The dissimilarity might be due to the calibre of the study participants who are all healthcare professionals. In patients with high risk of breast cancer and up to the recommended age of the screening, lack of adequate awareness poses a risk to early detection and late presentation.

On knowledge and practice of mammography, the results of this study as shown in table 3 reported that the respondents had poor knowledge and practice of mammography, which is similar to the study conducted in the Kingdom of Saudi Arabia (21), Ilorin – Nigeria (19) and Sokoto – Nigeria (16) where it was reported that there was low knowledge and practice of mammography. The reason for the similarities might be due to the lack of awareness for the screening method itself in our study and the three studies cited. On knowledge, awareness and practice of Breast self-examination as a screening method for breast cancer this study reported that the participants had high knowledge as shown in table 4, there is high awareness of BSE and 61.62% of the respondents practice BSE, this is similar with the study conducted in South Western Nigeria (22) and in Ibadan – Nigeria (23) where the

results showed that more than half of the respondents practiced BSE. It's also similar to the study conducted in Osun State – Nigeria (12) where it was reported that above half of the participants had good knowledge and awareness of BSE.

However, the results of this study is contrary to the study conducted by Mohammed et al., 2022 in Sokoto – Nigeria (16) and Dibisa et al., 2019 in Ethiopia (24) where it was revealed that majority did not know BSE and where not aware that it is an effective tool in breast cancer screening.. Lack of proper awareness, knowledge and practice of BSE leads to delayed detection of any changes in the breast, increased mortality, late detection reduces the treatment options which in turn increases mortality and reduces the quality of life.

On knowledge awareness and practice of CBE as a tool for breast cancer screening, this study reported that there was poor knowledge, awareness and practice of CBE, this is similar to the study conducted in Ilorin – Nigeria (19), in Osun State – Nigeria (12), Sokoto – Nigeria (16) and Pakistan (25) Where it was reported that the participants were aware of it but the knowledge and practice was low. Lack of knowledge, awareness and practice of clinical breast examination poses a great risk of late detection in patients with increased risk factors and others with abnormal changes in their breasts..

Limitations

There was a language barrier as some of the participants don't understand English and as such a research assistant who translated the questionnaire into the Hausa language was used because the study location is predominantly Hausa-speaking people.

Conclusion

This study demonstrates that while patients attending the Gynae/Antenatal clinic at UDUTH possess a high level of awareness and practice regarding Breast Self-Examination, there remain a critical gap in the knowledge and utilization of Mammography and Clinical Breast Examination. Despite the fact that these patients are in regular contact with healthcare providers, only 5.1% had ever undergone a mammogram, and over 60% were unaware of mammography as a screening tool. The reliance on BSE alone is insufficient for early detection of all breast pathologies. Therefore, it is recommended that hospital-based health education programs be intensified, specifically focusing on the importance, timing, and availability of professional screening methods. Addressing these knowledge gaps is essential to reduce late-stage presentations and improve breast cancer survival rates in the region.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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