

A Study of Breast Cancer Awareness and Health Practices among Female Undergraduates at Nile University of Nigeria, Abuja

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Abstract

Breast cancer continues to be a significant public health challenge, particularly in low- and middle-income countries where early detection is often lacking. This cross-sectional study looked into the knowledge, attitudes, and practices surrounding breast cancer among 369 young women aged 18 to 29 at Nile University of Nigeria. Data was gathered through a self-administered questionnaire and analyzed using descriptive statistics. The results showed that while awareness of breast cancer was universal (100%), only about half (50.1%) could recognize its symptoms, and nearly half (49.9%) were unaware of the associated risk factors. On a positive note, attitudes towards screening were encouraging, 87.5% acknowledged the importance of early detection, and 90.2%

supported the idea of performing monthly breast self-exams (BSE). However, the actual practices were concerning: 39.8% had never done a BSE, and none had undergone clinical breast exams (CBE). Even though 74.5% were aware of early detection methods, only 36.9% had taken part in awareness campaigns. Social media (56.9%) and online platforms (20.3%) emerged as the main sources of information, indicating a strong opportunity for digital health education. All participants agreed on the necessity for more awareness programs. These findings reveal a disconnect between knowledge and practice, highlighting the need for a comprehensive approach that includes education, community involvement, and digital outreach. Health professionals, institutions, and

policymakers must work together to lower breast cancer mortality rates in Nigeria.

Introduction

Background

Breast cancer is the most frequently diagnosed cancer among women worldwide and remains a leading cause of cancer-related deaths (Sung *et al.*, 2020). In 2020 alone, an estimated 2.3 million women were diagnosed, and approximately 685,000 died from the disease, accounting for about one-quarter of all female cancer cases (Bray *et al.*, 2021). Although significant advancements have been made in diagnosis and treatment, late-stage detection continues to be a major challenge—particularly in low- and middle-income countries, where healthcare resources and access to early screening are often limited (Alwan *et al.*, 2022; Mohamed *et al.*, 2023). A combination of hormonal, genetic, and environmental factors contributes to the disease, which brings substantial emotional, social, and financial strain to patients and their families (Bano *et al.*, 2023).

Late diagnosis negatively impacts survival rates, especially in regions lacking awareness and organized screening programs (Raeissi *et al.*, 2017). Globally, disparities in incidence and outcomes persist: high-income countries report higher prevalence but better survival due to early detection and treatment, while developing countries face increasing incidence and mortality linked to low awareness and systemic barriers (Ferlay *et al.*, 2015; Torre *et al.*, 2015).

Awareness of breast cancer—including knowledge of risk factors, early warning signs, and available screening methods—is

essential for improving early detection and outcomes. While breast self-examinations (BSE) are not a replacement for clinical screening, they remain a practical and accessible tool for young women, particularly in resource-limited settings (Anderson *et al.*, 2018; Saeed *et al.*, 2018). Adolescence and early adulthood are critical stages for developing preventive health behaviors that can reduce long-term risk. Educating young women, especially university students, offers the opportunity to instill lasting health-conscious habits and bridge knowledge gaps often overlooked in awareness campaigns (Karayurt *et al.*, 2018; Ahmadian & Samah, 2023).

In sub-Saharan Africa, breast cancer contributes significantly to female mortality, with most diagnoses occurring at advanced stages (Azubuike & Okwuokei, 2023). Contributing factors include delayed presentation, limited screening infrastructure, inadequate health literacy, and cultural stigma (Sankaranarayanan *et al.*, 2020; Rivera-Franco & Leon-Rodriguez, 2018). In Nigeria, the situation is compounded by weak breast cancer control programs and low levels of breast health awareness (Haji-Mahmoodi *et al.*, 2022). Despite the potential of BSE and clinical breast exams (CBE) to aid early detection, young women remain underrepresented in public health initiatives.

Focusing on young women—such as university students—offers a strategic opportunity to enhance early detection behavior. At institutions like Nile University of Nigeria, students form a vital part of the population for breast cancer literacy efforts. Identifying and addressing gaps in knowledge, attitudes, and practices can inform the design of targeted

interventions and health education campaigns. As breast cancer continues to rise in Nigeria, empowering youth through awareness and education may significantly contribute to earlier diagnoses, better outcomes, and reduced mortality. This study aims to assess the knowledge, attitudes, practices, and awareness (KAP) of breast cancer among young female students at Nile University of Nigeria.

Literature Review

Studies consistently reveal poor breast cancer screening practices among women, even where awareness and knowledge levels are moderate to high. At Hail University, Almeshari *et al.* (2023) observed low engagement in breast self-examinations (BSE) and other screening methods, despite participants having average knowledge. Similarly, Elsaid, Meidan, and Tajoury (2023) reported that Libyan women seeking primary healthcare had a fair understanding of breast cancer, yet this did not result in regular screening behaviors. Ayoub *et al.* (2021) found that female pharmacists in Jordan, despite their professional background, demonstrated inadequate screening practices such as BSE, clinical breast exams (CBE), and mammography. In Pakistan, Majeed *et al.* (2021) reported that only 19.6% of women had undergone mammography. Comparable findings by Wurjine *et al.* (2019), Salih *et al.* (2016), and Alshahrani *et al.* (2019) confirmed that awareness often fails to translate into action across different populations.

In Nigeria, recent studies further support this pattern. Yusuf *et al.* (2022) found that while 97.1% of female undergraduates held positive attitudes toward breast cancer

screening, 90.3% had poor knowledge; only 52.9% practiced BSE, and just 4.6% had undergone a CBE (Omisore *et al.*, 2023). Uruntie *et al.* (2024) reported that health education significantly improved knowledge, attitudes, and BSE practices among students at a private university in southern Nigeria. In Ogun State, Effiong *et al.* (2024) highlighted that while many women adopted healthy behaviors like diet control and reduced alcohol intake, gaps in awareness still hindered broader breast cancer prevention practices. Ntekim *et al.* (2025) emphasized systemic barriers in a mixed-methods study, which revealed delayed diagnosis and care among Nigerian adolescents and young adults with breast cancer.

These studies underscore a persistent disconnect between knowledge and practice. Despite relatively high awareness and favorable attitudes, many women—especially younger demographics—fail to engage in consistent screening. Contributing factors include cultural stigma, fear of diagnosis, lack of confidence in performing BSE, and limited access to healthcare services.

However, there is still limited research focused specifically on young Nigerian women in university settings. While global and regional studies provide valuable insights, they often overlook local cultural and institutional dynamics. Young female students, such as those at the Nile University of Nigeria, represent a critical population for targeted intervention. Understanding their knowledge, attitudes, and behaviors is key to designing effective, culturally appropriate breast cancer awareness programs. With breast cancer incidence rising and early detection being

essential for survival, focused research on this group can help shape public health strategies, encourage preventive behaviors, and reduce mortality.

Methodology

This study conducted a descriptive cross-sectional survey to evaluate breast cancer awareness and health practices among female undergraduate students at the Nile University of Nigeria in Abuja. The focus was on female students aged 18 to 25 years. A total of 369 participants were chosen through stratified random sampling from various faculties within the university. Data collection involved a structured, self-administered questionnaire that covered demographics, knowledge, attitudes, awareness, and practices related to breast cancer. Experts reviewed the questionnaire for validity, and it was also tested in a pilot study, achieving a reliability score of 0.82 using Cronbach's alpha. Ethical approval was granted by the university's ethics committee, ensuring that participation was voluntary and confidentiality was maintained. Data analysis was performed using SPSS version 26, employing descriptive statistics like frequencies and percentages to summarize the findings. Chi-square and Pearson correlation tests were utilized to explore relationships between variables, with a significance level set at $p < 0.05$.

Result

Table 1 shows the breast cancer screening practices among the female respondents.

Table 1 Breast Cancer Screening Practices among Young Females

Source: Field Survey (2024)

	Frequency	Percentages
Breast Self-Examination (BSE)		
Frequency		
Once a month	10	2.7
A few times a year	76	20.6
Rarely	136	36.9
Never	147	39.8
Total	369	100.0
Last BSE Performed		
Within the past month	37	10.0
1-6 months ago	37	10.0
6-12 months ago	165	44.7
Over a year ago	130	35.2
Total	369	100.0
BSE Practice Confirmation		
Yes	369	100.0
Regularity of BSE		
Once a month	47	12.7
Once every six months	47	12.7
Once a year	109	29.5
Irregularly	166	45.0
Total	369	100.0
Clinical Breast Examination (CBE)		
No	369	100.0
Frequency of CBE		
Once a year	68	18.4
Every 2-3 years	105	28.5
Irregularly	127	34.4
When recommended by a healthcare professional	69	18.7
Total	369	100.0
Mammogram Experience		
Yes	203	55.0
No	166	45.0
Total	369	100.0

Table 1 presents the breast cancer screening habits among the women surveyed. A notable number of them indicated that they rarely (36.9%) or never (39.8%) performed breast self-examinations (BSE). Just a tiny fraction reported doing BSE monthly (2.7%) or a few times a year (20.6%). When it comes to how recently they performed BSE, only 10% had done it in the last month, and another 10% had done it within the past 1 to 6 months. The majority of participants last performed BSE between 6 and 12 months ago (44.7%) or over a year ago (35.2%), which shows a lack of consistency in their practices. Despite this, every single respondent (100%) mentioned that they had done BSE at some point. However, when it came to regularity, only 12.7% did it monthly, another 12.7% did it biannually, and 29.5% did it annually.

The largest group, making up 45%, practiced BSE irregularly, pointing to inconsistent health behaviors. None of the participants (0%) had ever had a clinical breast examination (CBE) by a healthcare professional. Yet, when asked how often they thought it should be done, opinions varied: 18.4% suggested annually, 28.5% every 2 to 3 years, 34.4% irregularly, and 18.7% said only when advised by a healthcare provider. Interestingly, 55% of respondents reported having completed a mammogram (breast X-ray), while 45% had not yet undergone this important screening procedure.

Table 2 offers valuable insights into the level of awareness of young females toward breast cancer at Nile University of Nigeria.

Table 2: Awareness of Breast Cancer Among Young Females

Source: Field Survey (2024)

Table 2 presents the awareness levels of young female students at Nile University of Nigeria regarding breast cancer. All respondents (100%) indicated they were aware of breast cancer. The leading source of their information was social media, with 56.9% citing it, followed by books and the Internet at 20.3%, university lecturers at 12.5%, friends and family at 7.6%, and healthcare professionals at 2.7%. When asked how they preferred to receive information about breast cancer, 70.2% chose social media, 17.3% favored educational programs in schools or colleges, and 12.5% liked on-campus healthcare talks.

Interestingly, all respondents (100%) also acknowledged being aware of breast cancer risk factors. In terms of recognizing symptoms, 50.1% reported being aware of the signs and symptoms of breast cancer, while 49.9% did not. A significant 74.5% were aware of early detection methods, and an impressive 95.1% understood the importance of regular screenings. Participation in awareness campaigns was noted by 36.9% of respondents, while 63.1% had not taken part in such initiatives. Additionally, 46.9% were aware of the treatment options available, whereas 53.1% were not. Remarkably, all respondents (100%) expressed a desire for more breast cancer awareness programs in their community.

	Frequency	Percentages
Awareness of Breast Cancer		
Yes	369	100.0
Sources of Information		
Social media	210	56.9
Healthcare workers	10	2.7
Friends/Family	28	7.6
Teachers at the University	46	12.5
Books/Internet	75	20.3
Total	369	100.0
Preferred Awareness Channels		
Social media	259	70.2
Healthcare talks on campus	46	12.5
Education programs in schools/colleges	64	17.3
Total	369	100.0
Risk Factor Awareness		
Yes	369	100.0
Knowledge of Signs and Symptoms		
Yes	185	50.1
No	184	49.9
Total	369	100.0
Awareness of Early Detection Methods		
Yes	275	74.5
No	94	25.5
Total	369	100.0
Importance of Regular Screening		
Yes	351	95.1
No	18	4.9
Total	369	100.0
Participation in Awareness Campaigns		
Yes	136	36.9
No	233	63.1
Total	369	100.0
Treatment Option Awareness		
Yes	173	46.9
No	196	53.1
Total	369	100.0
Need for More Awareness Programs		
Yes	369	100.0

Discussions

This study provides comprehensive insight into the knowledge, attitudes, and practices regarding breast cancer among young female students at the Nile University of Nigeria. Despite universal awareness of the disease, significant discrepancies were identified between knowledge and preventive behaviors—particularly concerning breast self-examination (BSE), clinical breast examination (CBE), and symptom recognition. Even though 100% of the participants had heard of breast cancer, their understanding varied widely. Just about half (50.1%) could identify the signs and symptoms, and fewer than half (46.9%) knew about treatment options. These findings echo the work of Asmare *et al.* (2022) and Alqarni *et al.* (2023), who found similar issues with knowledge and BSE practices among women in Saudi Arabia and Ethiopia. Effiong *et al.* (2024) also point out the ongoing gap between knowledge and behavior in Nigerian communities, highlighting the urgent need for culturally relevant interventions. Interestingly, while the respondents generally had a positive attitude toward breast cancer screening, their actual health behaviors left much to be desired. Only 2.7% reported doing BSE monthly, and none had ever had a clinical breast examination. This is particularly alarming since early detection is one of the best ways to lower breast cancer mortality rates (Anderson *et al.*, 2018; Sung *et al.*, 2020). The fact that 45% of participants practiced BSE irregularly and 39.8% never did it at all shows a clear disconnect between awareness and action. This trend is similar to what Akinola *et al.* (2021) and Alwan *et al.* (2022) found regarding screening

behaviors among university students and young adults..

Despite the lack of regular screening practices, 95.1% of participants acknowledged the importance of early detection, and all (100%) expressed a desire for more awareness initiatives. This paradox—strong theoretical support for screening but limited real-world engagement—can be understood through behavioral models.

Using the Health Belief Model (HBM), these results suggest that while perceived severity and benefits are acknowledged, perceived barriers such as embarrassment, lack of knowledge about correct BSE techniques, and limited access to professional screening services may inhibit behavior. The complete absence of clinical breast exams may reflect systemic gaps in healthcare accessibility for young, asymptomatic women, as discussed by Ntekim *et al.* (2025) and Omisore *et al.* (2023).

The Theory of Planned Behavior (TPB) provides additional insight. Though attitudes toward screening were positive, the gap between intention and behavior suggests limitations in perceived behavioral control. Participants may lack the confidence, skills, or environmental support to perform regular BSE or access professional care. Furthermore, the influence of subjective norms may deter proactive health behavior if breast cancer is not commonly discussed or prioritized in their peer groups.

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Looking at the Health Belief Model (HBM), it seems that while people understand the severity of the issue and the benefits of screening, there are some barriers holding them back. Things like feeling embarrassed, not knowing the right techniques for breast self-exams (BSE), and having limited access to professional screening services can get in the way. The complete lack of clinical breast exams might point to deeper issues in healthcare access for young women who don't show symptoms, as highlighted by Ntekim *et al.* (2025) and Omisore *et al.* (2023).

The Theory of Planned Behavior (TPB) sheds more light on the situation. Even though attitudes toward screening are generally positive, there's a noticeable gap between what people intend to do and what they do. This suggests that they might feel a lack of control over their behavior. Participants could be missing the confidence, skills, or support they need to regularly perform BSE or seek professional care. Plus, if breast cancer isn't a common topic of conversation or a priority among their friends, that could further discourage them from taking proactive steps for their health.

From the lens of Social Cognitive Theory (SCT), environmental influences like media exposure, role modeling, and peer behavior likely shape participants' awareness and practices. Interestingly, social media emerged as the leading source of information, accounting for 56.9%, and it was also the top choice for raising awareness at 70.2%. This highlights the

potential of digital health education campaigns that resonate with youth culture to enhance breast self-examination (BSE) skills and promote preventive behaviors, as noted by Uruntie *et al.* (2024). To put these findings into perspective, some empirical comparisons are worth mentioning. Mohammed *et al.* (2023) found that medical students had a higher awareness of BSE, indicating that exposure to health education can significantly boost knowledge and practices. On the flip side, Hamed *et al.* (2022) pointed out a gap between what people think they know about breast cancer symptoms and their actual recognition of them, which aligns with the current study's results.

The level of participation in awareness campaigns was relatively low at 36.9%, which suggests that the current outreach strategies might not be resonating with this audience. This finding echoes previous studies (such as Olufemi *et al.*, 2017; George *et al.*, 2019) that advocate for youth-centered and culturally relevant initiatives. To sum it up, this study reveals a classic knowledge-attitude-practice (KAP) gap. Even though participants exhibit a high degree of awareness and positive attitudes towards screening, this doesn't always lead to consistent action. To tackle this issue, we need strategic health education programs that not only impart knowledge but also build confidence, enhance access, and provide social support for preventive actions. It's essential for university health programs and national cancer initiatives to prioritize experiential learning, peer education, and professional engagement to help young women move from awareness to taking action.

Conclusion

This study from Nile University in Nigeria has revealed a concerning gap among young women when it comes to breast cancer awareness, attitudes, and health practices. While most of the participants were aware of breast cancer, many didn't fully understand the specific risk factors, early symptoms, or how to properly perform breast self-examinations (BSE). Even though they generally supported the idea of early detection and screening, their actual participation—especially in regular BSE and clinical breast examinations (CBEs)—was surprisingly low. This disconnect between knowledge and action highlights the urgent need for targeted, proactive initiatives. Interestingly, social media emerged as the primary source of information and the preferred platform for learning, yet there was a noticeable lack of engagement in structured awareness programs. Many participants also had an incomplete grasp of treatment options and how to recognize symptoms. These findings emphasize the critical need for educational programs that are not only age-appropriate but also tech-savvy, aiming to boost awareness while encouraging consistent screening practices. It's crucial to empower young women to take charge of their breast health. Bridging the knowledge–attitude–practice gap is vital for enhancing early detection and minimizing the impact of breast cancer in this group.

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