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Original Research Article

Awareness and Practice of Breast Self-Examination among Female Undergraduate Students

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Abstract: Breast cancer is a prevalent form of cancer and the second leading cause of cancer-related deaths in women across the globe. Women can perform breast self-examination at home to detect any abnormalities in the breast early on, making it an affordable, easy, and effective screening technique. In this cohort study, we aimed to assess undergraduates' knowledge and practice of breast self-examination. Between February 2023 and May 2023, we used an online survey tool to collect information and structured the questions to meet our research objectives. Findings indicate that 40% of those recruited were knowledgeable about the procedure, while 60% had minimal or no knowledge. Age did not significantly impact knowledge and practice (p=0.7). Women, especially female students, must be more informed about breast cancer and encouraged to perform breast self-examination regularly. Raising awareness can be achieved through organizing workshops on breast cancer and early detection methods on university campuses, secondary schools, and even in public markets. Pamphlets may also be an effective method for promoting awareness.

Keywords: Breast self-examination, students, awareness, early detection.

INTRODUCTION

Breast cancer is a significant public health issue worldwide and the second most common cause of death yearly, affecting individuals across all classes and countries (Siegel *et al.,* 2023; Sharma *et al.,* 2010). According to Cancer Research UK and the World Health Organization, 2.3 million women were diagnosed with breast cancer, resulting in 685,000 deaths globally. In the last five years alone, 7.8 million women were diagnosed with breast cancer, making it the most prevalent type worldwide.

Studies have demonstrated that there exist significant epidemiological disparities in the incidence of breast cancer between women in developed and developing countries. Multiple risk factors, such as menopause, oral contraceptive usage, cigarette smoking, and a family history of breast cancer, have demonstrated various associations with breast cancer in black and white women (Momenimovahed & Salehiniya, 2010). In Africa, breast cancer fatalities reached 74,072, with an estimated 168,690 cases reported in 2018 alone (Sharma *et al.,* 2010)

Breast cancer screening methods medical professionals recommend include BSE, clinical breast examination, and mammography (Breast Cancer UK). BSE, which stands for breast self-examination, is a simple and cost-effective technique that women can perform at home to detect breast abnormalities (Noreen *et al.,* 2016; Dadzi *et al.,* 2019). It is highly effective in detecting early signs of breast cancer. Detecting breast abnormalities early is crucial in treating breast cancer and can significantly reduce the associated mortality and morbidity. Considering the challenges in accessing cancer diagnosis and treatment in developing countries, preventive measures that aim to reduce the occurrence of breast cancer are much needed.

Breast self-examination and mammograms are the customary methods employed by clinics to detect breast cancer (American Cancer Society, 2016). Unfortunately, many women, including students struggling in harsh economic conditions, cannot afford advanced technologies like mammograms. This makes breast self-examination a more cost-effective option for detecting abnormalities. Therefore, our goal was to assess the awareness and knowledge of BSE among university students in South-South Nigeria.

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MATERIALS AND METHODS

Study design

A study was conducted on a cohort of 50 female students randomly selected from various faculties and age groups at Niger Delta University. The information was gathered using an online survey tool between February 2023 and May 2023. This was an appropriate data collection method as most students are well-versed in technology, and online research is convenient (Menon *et al.,* 2020). The survey questions were designed to investigate the research objectives, and the statistical analysis was carried out using GraphPad Prism software version 8.5.1.

Limitations of the study

It is essential to acknowledge that this study represents a specific cohort and may not accurately reflect the perspectives of all female students at the university. However, it offers crucial insights into BSE practices within this particular context.

RESULTS

The participants in this study were all undergraduate students aged between 19 and 28, which is a typical age range for such individuals. It was found that all participants were aware of breast cancer, but only 10% of them knew that men could also develop this condition. The age distribution of the participants is presented in Table 1.

Table1: Age distribution of respondents

| Age ranges	Number recruited	%
19-21	21	42
22-24	10	20
>25	19	38
Total	**50**	**100**

According to Figure 1, only 40% of recruited participants had adequate knowledge about breast self-examination, while the remaining 60% had minimal or no knowledge about the procedure. Figure 2 indicated no significant difference in the knowledge and practice of BSE among the faculties.
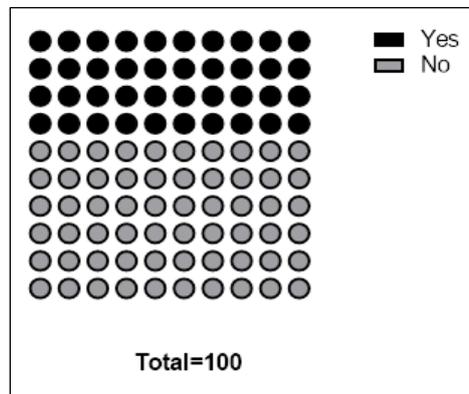
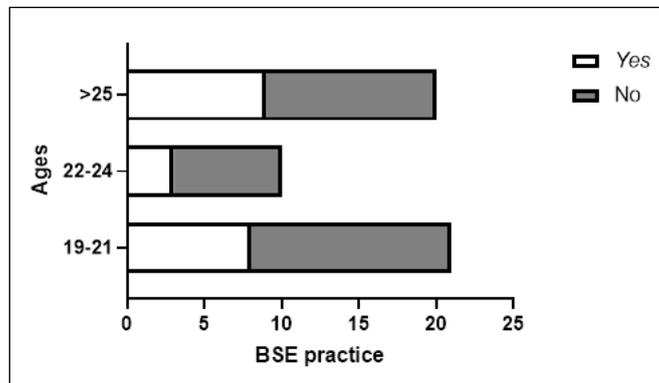
Figure 1: Knowledge of breast self-examination

A dot plot showing 60% of students lack BSE knowledge (grey dots) while 40% are
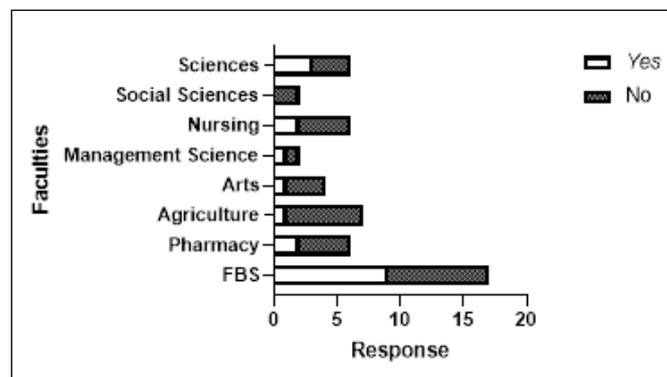
Figure 2: Comparison of breast self-examination knowledge among the faculties

The analysis of knowledge and practice of BSE among the faculties did not yield a significant result when analyzed using the Chi-square test, with a p-value of 0.6.

Based on the feedback from the participants, it appears that the practice of breast self-examination is consistent across all age groups (figure 3). There seemed to be no correlation between a student's age and their level of knowledge and practice regarding BSE.


**Figure 3: The practice of BSE among the age groups**

Participants' response on BSE shows no significant difference found in breast self-examination practice among age groups (p-value=0.7, chi-square analysis).

According to Table 4, most students (over 60%) strongly advocate for daily BSE practice. However, around 20% of students only recommend it monthly. Additionally, more than 40% of students (as shown in Figure 5) expressed uncertainty about the effectiveness of early detection through BSE in improving survival rates. Therefore, educating and raising awareness among students about the significance of regular BSE for early detection and prevention of breast cancer is crucial.
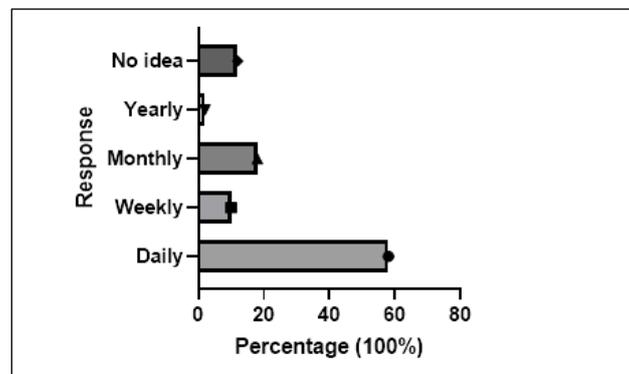
Figure 4: Knowledge of the frequency of breast self-examination
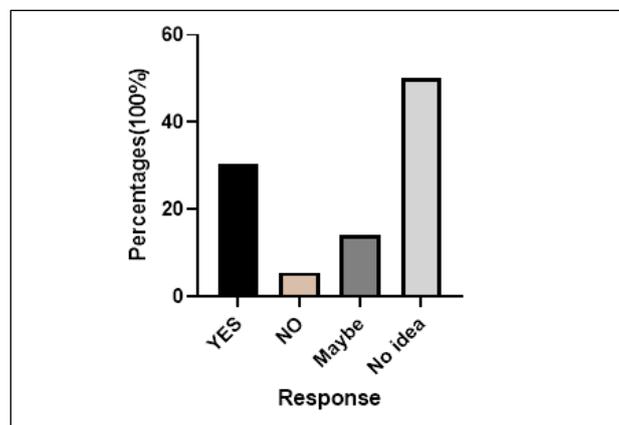
Figure 5: Does early detection improve the chance of survival?

DISCUSSION

Breast self-examination is an effective way for women to detect any lumps early, significantly increasing chances of survival and improving overall health outcomes. However, it is unfortunate that older and younger women may not be well-informed about this technique (Monticciolo *et al.,* 2021). In today's technology-driven world, many people have learned about breast cancer from various sources, especially social media. However, only a tiny percentage of them, around 10%, know that breast cancer can also affect males.

According to the survey results, a surprising 60% of people have insufficient knowledge about BSE despite being aware of breast cancer. This highlights a concerning lack of information on social media platforms about BSE, depriving young girls of the chance to learn this crucial and easy-to-learn technique. Although the comparison between faculties did not yield statistically significant results, students lacking a medical background were more disadvantaged. While those in the medical-allied faculties will eventually be taught, female students in other faculties may not have the same access. According to a study (Morgan *et al.,* 2012) conducted by Sudan International University, there was a notable difference between medical and non-medical students regarding knowledge levels. However, the results of this study contradict this finding. Despite the initial findings, further research is needed to understand these groups' differences better.

Female students need to prioritize their breast health by regularly practising BSE. Detecting any abnormalities in the breasts and recognizing breast cancer early is crucial; this simple technique can help achieve that. The university commission should consider introducing elective courses that cover various aspects of women's health to increase awareness. This would help bridge the gap of knowledge that currently exists. Studies have shown that providing educational materials to young girls can significantly improve their understanding of breast cancer and BSE (Amosu *et al.,* 2021; Ibitoye *et al.,* 2021).

According to Udoh *et al.*'s systematic review of breast self-examination (BSE) knowledge among women in sub-Saharan African countries, there are varying levels of knowledge and practising BSE can still be challenging. This study's results support the previous findings. It is worth noting that while a significant number of individuals in Ethiopia (54.5%) are aware of BSE, the percentage of those who practice the technique is relatively low (13.1%) (Dinegde *et al.,* 2020). In Akure, Nigeria, it was found that 60% of adolescent girls possess knowledge about BSE (Ibitoye *et al.,* 2021), while in Ibadan, Nigeria, only 9.5% of female secondary students were observed to have good knowledge and practice of BSE (Ogunkayode *et al.,* 2021). However, in this study, compared to the Ibadan study, it was observed that 40% of the participants had an understanding of BSE, possibly because they were undergraduates and their levels of knowledge varied. Having mentors who talk about BSE could contribute to high awareness about BSE in Akure. Mentors who discuss BSE may have contributed to the increased awareness levels in Akure. Further research is necessary to understand the reasons behind such differences.

According to this study, there was no significant link between BSE awareness and age in female students. This indicates that older women may not be well-informed about the technique, which could hinder their ability to educate their daughters. This reinforces the importance of having mentors. It is recommended for women aged 50 to 74 years to undergo mammograms every two years. Women between the ages of 40 to 49 are advised to discuss with their healthcare provider when to start and how often to get mammograms (Monticciolo *et al.,* 2021). Breast self-examination (BSE) is crucial for women between 20 and 30 as they may not undergo routine clinical examinations and mammography. All women aged 20 and above should conduct BSE every month, preferably 5-7 days after their menstruation or on the same day every month if they are postmenopausal (Pippin, 2020).

This study revealed that just 20% of participants were knowledgeable about the frequency of breast self-examinations (BSE). Interestingly, this statistic contrasts with a survey of female students in Egypt (Boulos & Ghali, 2014), where only 8.8% knew when to perform a BSE. One possible explanation for this discrepancy is the varying access levels to technology and online resources, which may impact knowledge acquisition in this decade. It is concerning that a significant portion of the participants, over 40%, were unaware of the crucial impact early detection has on increasing the chances of survival. This lack of knowledge could potentially contribute to the limited implementation of this practice. Research has shown that educating adolescent girls on breast cancer and breast self-examination can be particularly effective in underdeveloped nations, leading to improved knowledge and better outcomes (Sadoh *et al.,* 2021).

CONCLUSIONS AND RECOMMENDATION

Breast cancer screening is a vital process that involves examining women for early disease indications. Detecting breast cancer in its early stages makes it more manageable and increases the chances of recovery. According to our study, there is a low level of awareness regarding breast cancer and breast self-examination (BSE) among various faculties and age groups. It seems that female students lack knowledge about BSE, which could be due to cultural taboos, limited access to healthcare resources, and insufficient information about the procedure. Overcoming these barriers can increase awareness and encourage regular self-examinations among students. Raising awareness

among mothers and partnering with foreign organizations to offer free or affordable mammography screenings can help improve public awareness.

List of Abbreviations
BSE: Breast self-examination
WHO: World Health Organization

REFERENCES

- American Cancer Society. (2016). Breast Cancer; What is breast cancer?. *American Cancer Society*, 1-127.
- Amosu, A. M., & Akpo, M. O. (2021). Effect of an educational intervention on knowledge and perceptions of breast self-examination among adolescent female students in Delta State, Nigeria. *IFE PsychologIA: An International Journal*, *29*(1), 11-18.
- Boulos, D. N., & Ghali, R. R. (2014). Awareness of breast cancer among female students at Ain Shams University, Egypt. *Global journal of health science*, *6*(1), 154.
- Breast cancer (who. int) https://www.who.int/news-room/fact-sheets/detail/breast-cancer [Accessed May 2023]
- Cancer Research UK. Breast Cancer Statistics. 2021. Available from: https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/breast-cancer [Accessed May 2023
- Dadzi, R., & Adam, A. (2019). Assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana. *PLoS One*, *14*(12), e0226925.
- Dinegde, N. G., Demie, T. G., & Diriba, A. B. (2020). Knowledge and practice of breast self-examination among young women in tertiary education in Addis Ababa, Ethiopia. *Breast Cancer: Targets and Therapy*, 201-210.
- Ibitoye, O. F., & Thupayegale-Tshwenegae, G. (2021). The impact of education on knowledge attitude and practice of breast self-examination among adolescents girls at the Fiwasaye girls grammar school Akure, Nigeria. *Journal of Cancer Education*, *36*, 39-46.
- Menon, V., & Muraleedharan, A. (2020). Internet-based surveys: relevance, methodological considerations and troubleshooting strategies. *General Psychiatry*, *33*(5).
- Momenimovahed, Z., & Salehiniya, H. (2019). Epidemiological characteristics of and risk factors for breast cancer in the world. *Breast Cancer: Targets and Therapy*, 151-164.
- Monticciolo, D. L., Malak, S. F., Friedewald, S. M., Eby, P. R., Newell, M. S., Moy, L., ... & Smetherman, D. (2021). Breast cancer screening recommendations inclusive of all women at average risk: update from the ACR and Society of Breast Imaging. *Journal of the American College of Radiology*, *18*(9), 1280-1288.
- Morgan, A. A., Alsidigue, D., Abuzaid, F. A., & Alhaj, A. M. A. (2021). Knowledge of Breast Self–Examination among Females Students in Sudan International University. *International Journal of Multidisciplinary Research and Publications, 3* (1)2, 63-68,
- Noreen, M., Murad, S., Furqan, M., Sultan, A., & Bloodsworth, P. (2015). Knowledge and awareness about breast cancer and its early symptoms among medical and non-medical students of Southern Punjab, Pakistan. *Asian Pacific Journal of Cancer Prevention, 16*(3).
- Ogunkayode, J.A., & Ajuwon, A.J. (2021). Knowledge, Attitude, and Practice of Breast Self-Examination among Female Secondary School Students in Ibadan, Nigeria. *Archives of Basic and Applied Medicine,* (9) pp.5-11
- Pippin, M. M., & Boyd, R. (2020). Breast self-examination. NCBI Bookshelf
- Sadoh, A. E., Osime, C., Nwaneri, D. U., Ogboghodo, B. C., Eregie, C. O., & Oviawe, O. (2021). Improving knowledge about breast cancer and breast self-examination in female Nigerian adolescents using peer education: a pre-post interventional study. *BMC Women's Health, 21*(1)1-9.
- Sharma, G. N., Dave, R., Sanadya, J., Sharma, P., & Sharma, K. (2010). Various types and management of breast cancer: an overview. *Journal of Advanced Pharmaceutical Technology & Research, 1*(2), 109.
- Siegel, R. L., Miller, K. D., Wagle, N. S., & Jemal, A. (2023). Cancer statistics, 2023. *CA: A Cancer Journal for Clinicians, 73*(1), 17-48.
- Udoh, R.H., Tahiru, M., & Ansu-Mensah, M. (2020). Women's knowledge, attitude, and practice of breast self-examination in sub-Saharan Africa: a scoping review. *Arch Public Health*, 78-84.