



(RESEARCH ARTICLE)



Awareness of breast self-examination among females in selected secondary schools in Ibadan north local government area, Oyo state, Nigeria

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Abstract

Breast cancer remains a significant public health concern globally, with early detection through breast self-examination (BSE) crucial for improved prognosis. This study assessed the awareness of breast self-examination among female students in selected secondary schools within Ibadan North Local Government Area of Oyo State, Nigeria.

A descriptive cross-sectional approach was used to evaluate the level of awareness of BSE among 308 female students aged 12-20. Structured questionnaires were used to collect data from the respondents on socio-demographics, awareness, knowledge, attitude, perception and practice of BSE. Purposive sampling technique was used to select the respondents while data collected was analyzed using descriptive and inferential statistics.

The findings of this study suggest that, on average, the respondents have a moderate level of knowledge about Breast Self-Examination (BSE), with a mean knowledge score of 2.86 out of a possible 5 (± 1.14) and only around 28.9% of respondents reported practicing BSE, while similar percentages expressed confidence in performing BSE and doing it regularly on a monthly basis. The findings of this study show that there is a gap between knowledge and practice, despite the fact that some of the respondents have some level of awareness and understanding about BSE, the actual practice among respondents is low.

Conclusion: Based on the findings, it is recommended that comprehensive health education programs be integrated into school curriculum to raise awareness and enhance the practice of BSE among female students. Additionally, community-based awareness campaigns and partnerships with healthcare providers can further reinforce the importance of regular screening and early detection of breast cancer.

Keywords: Breast Self-Examination; Awareness; Female Students; Secondary Schools; Early Detection; Health Education

1. Introduction

According to the National Breast Cancer Organization, Breast self-examination is an early detection tool that uses a combination of physical and visual examinations of the breasts to check for signs and symptoms of breast cancer. The aim of a breast self-examination is to enable the individual become familiar with the way the breasts usually look and feel, which is also known as breast self-awareness. Breast self-awareness will help to identify any changes or abnormalities in the breasts, such as a new lump or skin changes [1]. The technique of breast self-examination involves a systematic examination of one's own breasts to identify changes in size, shape, texture, or the presence of lumps. This

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includes: Visual Inspection, Palpation in Standing Position, Palpation in Lying down Position, Nipple Check, Axillary (Underarm) Examination [2]. The American Cancer Society recommends performing breast self-examination once a month. Ideally, this should be done a few days after the end of menstrual period when breasts are less likely to be tender or swollen. Establishing a consistent routine is crucial for detecting subtle changes over time. Regular self-examinations enhance familiarity with one's breasts, making it easier to identify new or unusual developments [3].

Breast cancer is a global health concern, affecting women across continents and socioeconomic backgrounds [4]. The global landscape for breast self-examination awareness varies, with developed countries often having higher awareness rates due to extensive health education programs. In less developed regions, including parts of Africa, limited access to healthcare services and cultural factors contribute to lower awareness and adherence to BSE. Global efforts to address breast cancer emphasize the need for awareness campaigns to encourage regular self-examinations as part of a broader strategy for early detection and improved outcomes [5].

In Africa, breast cancer is a growing public health challenge. Factors such as inadequate healthcare infrastructure, cultural beliefs, and limited awareness contribute to late-stage diagnoses and increased mortality rates. Breast self-examination awareness campaigns in Africa aim to bridge gaps in knowledge, addressing cultural sensitivities and promoting the importance of individual breast health. While progress has been made, disparities still exist among African nations, emphasizing the need for targeted interventions and education to improve awareness and practice of BSE [6].

Nigeria, as a populous African country, faces unique challenges in breast cancer awareness. The healthcare system's limitations, coupled with cultural misconceptions surrounding cancer, impact the timely detection of breast abnormalities [7]. Despite ongoing efforts to increase awareness, a comprehensive understanding of the status of breast self-examination awareness in Nigeria is essential.

Breast self-examination plays a vital role in promoting breast health awareness among young girls. While breast cancer is often associated with older age groups, it's crucial to instill the habit of self-examination early on. Young age doesn't guarantee immunity from breast issues. Regular self-examination of breast helps in early detection of any changes or abnormalities, which is critical for prompt medical intervention. Early detection significantly improves the chances of successful treatment and recovery [8].

Performing regular breast self-examination allows young girls to become familiar with the normal look and feel of their breasts. This familiarity makes it easier to notice any unusual changes such as lumps, skin changes, or nipple abnormalities. Breast self-examination empowers young girls to take control of their health. By actively participating in monitoring their own bodies, individuals gain a sense of control and responsibility over their wellbeing, fostering a proactive mindset towards health maintenance [9]. Teaching young girls about breast self-examination serves as an educational tool. It not only imparts knowledge about breast health but also promotes a sense of responsibility regarding self-care and preventive measures [10].

While breast cancer risk increases with age, some young girls may have a higher risk due to family history or genetic factors. Regular self-exams can help identify individuals with higher risks early on, prompting them to seek professional advice and possibly undergo additional screening tests [11]. Encouraging breast self-examination among young girls contributes to a cultural shift in how health is perceived. It promotes the idea that maintaining health is an active, ongoing process that starts at a young age, rather than something to address only when problems arise.

Introducing breast self-examination as a routine establishes a foundation for a lifetime of health-conscious habits. Just like other preventive health measures, incorporating BSE into one's routine reinforces the importance of regular check-ups and proactive health maintenance [12]. Regular self-examination can also help alleviate anxiety associated with the fear of the unknown. Knowing one's body and being familiar with normal variations can reduce unnecessary worry and empower young girls to differentiate between common changes and potential concerns [12].

Neglecting breast self-examination (BSE) can have serious consequences, as early detection of breast abnormalities may be delayed, leading to potential health risks as early detection improves breast cancer outcome and survival, which are the cornerstone of a breast cancer control programme [13]. Early-stage breast cancer often presents with no symptoms or subtle changes that may go unnoticed without regular monitoring. Delayed detection can result in the disease progressing to more advanced stages, making treatment more challenging and potentially less effective [14]. When breast cancer is detected at an advanced stage, treatment options may become more limited. Early detection allows for a broader range of treatment options, including less aggressive interventions and a higher likelihood of successful outcomes [15].

Advanced breast cancer may lead to more severe complications, such as lymph node involvement, metastasis to other organs, and a higher likelihood of recurrence. The severity of complications is closely tied to the stage at which the cancer is diagnosed. Early detection significantly improves survival rates for breast cancer [16]. Regular self-exams contribute to catching abnormalities at an early, more treatable stage, increasing the chances of successful treatment and long-term survival. Delayed detection and diagnosis can have profound emotional and psychological consequences. The shock and distress associated with a more advanced cancer diagnosis can take a toll on mental well-being, affecting the individual's overall quality of life [17]. Advanced-stage cancer often requires more extensive and costly treatments, including surgeries, chemotherapy, and radiation therapy. Delayed detection can result in increased healthcare costs both for the individual and the healthcare system as a whole. Depending on the stage and treatment required, breast cancer treatments may impact fertility and overall quality of life. Delayed detection may limit fertility preservation options and result in more aggressive treatments with potential long-term side effects [18].

Early-stage breast cancer often allows for breast-conserving treatments, such as lumpectomy, preserving a significant portion of the breast. Late-stage detection may necessitate more extensive surgeries, potentially leading to the removal of the entire breast (mastectomy). Medical advancements continually improve breast cancer treatments. Early detection ensures individuals can benefit from the latest advancements in targeted therapies, immune-therapies, and personalized treatment approaches [19].

The assessment of awareness of breast self-examination (BSE) among females in selected secondary schools in Ibadan North Local Government Area of Oyo State presents a critical public health concern. Limited awareness of BSE can lead to delayed detection of breast abnormalities, potentially leading to more advanced stages of breast cancer at diagnosis. This issue is particularly relevant in Nigeria, where breast cancer is a leading cause of cancer-related mortality among women [20]. The following are the research questions that drive this study:

- What is the level of awareness and knowledge about Breast Self-Examination (BSE) among female students in selected secondary schools in Ibadan North Local Government Area Oyo State, Nigeria?
- What are the attitudes and perceptions of female students towards BSE in selected secondary schools in Ibadan North Local Government Area Oyo State?
- What is the level of practice of Breast Self-Examination among female students in Ibadan North Local Government Area Oyo State?

2. Materials and methods

This study was a descriptive cross-sectional study. Purposive sampling technique was used to select senior secondary school female students from Abadina College and Immanuel College, Ibadan, Oyo State. A total of 308 female senior secondary school students were purposively selected for the study.

- **Study Design:** Descriptive Cross-sectional Study
- **Study Location:** This was in Abadina College and Immanuel College, Ibadan, Oyo State.
- **Study Duration:** November 2023 to May 2024.
- **Sample Size:** 308 Respondents
- **Sample Size Calculation:** Sample size was determined using Taro Yamane formula developed in 1967. 280 was actually obtained, 10% attrition rate was added to make 308.
- **Subject and Selection Method:** Purposive Sampling Technique was used to select senior secondary school females in Abadina College and Immanuel College, Ibadan, Oyo State.

Instrumentation: A 31-item questionnaire was used to obtain data for this study. The questionnaire was developed by modifying structured questions during literature review. It has four sections:

2.1. Section A: Socio-demographic data

This consists of 8 questions used to elicit socio-demographic features. The question under this section is: age, ethnicity, name of school, level of education, family setting, mother level of education, father level of education, position in the family.

2.2. Section B: Knowledge and awareness of breast self-awareness

This consists of 5 questions that was used to elicit the participants awareness and knowledge of breast self-examination procedure.

2.3. Section C: Attitude and Perception towards breast self-examination

This consists of 5 questions used to know the participants attitude and perceptions towards breast self-examination.

2.4. Section D: Practice of Breast Self-Examination

This consists of 13 questions that was used to ascertain the participants level of awareness regarding breast self-examination.

2.5. Inclusion Criteria

The inclusion criteria were female students within a specific age range (11-20years) who were currently attending secondary school in the selected schools.

2.6. Exclusion Criteria

- Male students
- Female students who did not give their consent to the study.
- Female students who are ill.
- Female students who are not currently enrolled in senior secondary school.

2.7. Procedural Methodology

An ethical approval was obtained from the ethical review committee of the University of Ibadan/University College Hospital, Ibadan for approval of this study with IRB Number: UI/EC/24/0135. Approval to collect data was also gotten from the Ibadan North local Government Universal Basic Education Commission. Written consent was obtained from the participants above 18 years of age and a parental or guardian consent and assent was obtained for participants younger than 18 years. The anonymity of the participants was ensured using codes instead of personal identifiers in data analysis and reporting. The voluntary nature of the participation was emphasized and participants were allowed to withdraw at any stage without consequences. Participants were enlightened following data collection. Data was collected over a period of 2 weeks.

2.8. Statistical Analysis

Quantitative data collected using the structured questionnaire was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive data which included means, standard deviation and percentages were used to summarize and present the results. Chi square tests was used to determine the relationship between level of education and awareness of breast self-examination among female students and also the relationship between age and practice of self-breast examination among female students at 0.05 level of significance.

3. Result

Table no 1 show that more than half (62%) of the respondents were within 11-15years of age while 1% were within 16-20years. About 47.7% were in SS1 class while 26% were in SS2. Majority (80.8%) of the respondents were from monogamous family while 19.2% were from polygamous family. More than half (57.1%) of the respondents' fathers had tertiary education while 2.6% had no formal education. Also, 49.4% of the respondents' fathers had tertiary education while 2.9% had no formal education.

Table 1 Socio-demographic characteristics of respondents

S/N	Variables		Frequency	Percentage (%)
1.	Age (Years)	11-15	191	62%
		16-20	117	38%
		Total	308	100.0
2.	Educational level	SSS 1	147	47.7%
		SSS2	80	26%
		SSS3	81	26.3

		Total	308	100.0
3.	School name	Abadina College, U.I	176	57.1%
		Immanuel College, Orita U.I	132	42.9%
		Total	308	100.0
4.	Ethnicity	Yoruba	255	82.8%
		Igbo	35	11.4%
		Hausa	5	1.6%
		Others	13	4.2%
		Total	308	100.0
5.	Family Setting	Monogamous	249	80.8%
		Polygamous	59	19.2%
		Total	308	100.0
6.	Position in the family	First	90	29.2%
		Second	92	29.9%
		Third	58	18.8%
		Last	52	16.9%
		Others	16	5.2%
		Total	308	100%
7.	Father's educational level	No formal education	8	2.6%
		Primary education	14	4.5%
		Secondary education	110	35.7%
		Tertiary education	176	57.1%
		Total	308	100%
8.	Mother's educational level	No formal education	9	2.9%
		Primary education	20	6.5%
		Secondary education	127	41.22%
		Tertiary education	152	49.4%
		Total	308	100%

Table 2 shows that about 62% of respondents were aware of breast self-examination (of which 35.1% heard about BSE from school while 6.8% heard from friends), while 5.2% responded with 'I don't know'. Majority of the students (88.3%) had the knowledge that female gender should routinely perform BSE while 1.3% responded that male gender should routinely perform BSE. About half (49.7%) of the students had the knowledge of BSE should be done monthly while 4.5% responded that BSE should be done bi-weekly. Also, about 44.2% of respondents knew that 'Palpate with palm and minimum of three fingers' is the palpating procedure for BSE while 13.6% had no response (unknown) to the palpating procedure for BSE.

Table 2 Knowledge and awareness about Breast Self-Examination (BSE)

Variables		Frequency	Percentage (%)
Have you ever heard of breast self-examination?	Yes	191	62%
	No	101	32.8%
	I don't Know	16	5.2%
	Total	308	100.0
If yes, through what means did you hear of breast self-examination?	Social Media	50	26.2%
	Parents	47	24.6%
	Radio	14	7.3%
	School	67	35.1%
	Friends	13	6.8%
	Total	308	100.0
Gender that should routinely perform breast self-examination (BSE)	Female	272	88.3%
	Male	4	1.3%
	Both Male and Female	18	5.8%
	Unsure	14	4.5%
	Total	308	100.0
Age that breast self-examination should begin	8-15 years	165	53.6%
	16 years and above	128	41.6%
	Unsure	15	4.9%
	Total	308	100.0
How often should breast self-examination be done?	Monthly	153	49.7%
	Weekly	58	18.8%
	Daily	62	20.1%
	Bi-weekly	14	4.5%
	Unsure	21	6.8%
	Total	308	100.0
Palpating procedure for breast self-examination is?	Palpate with palm and minimum of three fingers	136	44.2%
	Palpate with a stethoscope	58	18.8%
	Palpate with a stethoscope	72	23.4%
	Unsure	42	13.6%
	Total	308	100.0

Fig 1 shows that the mean knowledge score of respondents on breast self-examination was 2.86 ± 1.14 . About two-third of respondents (66.2%) had good knowledge while 33.8% had poor knowledge of breast self-examination.

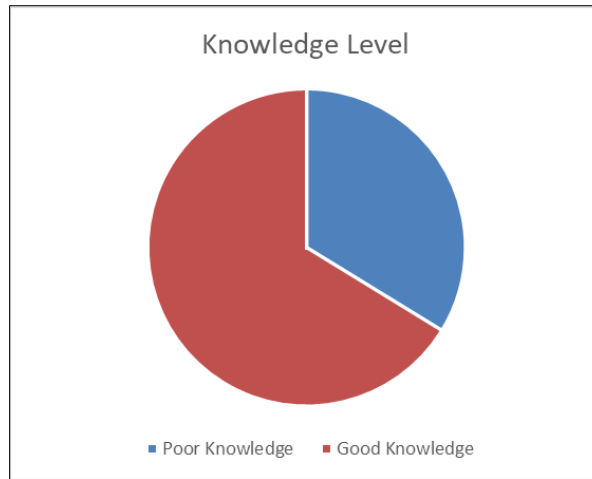


Figure 1 Knowledge Level of respondents on BSE

Table 3 shows that majority of the respondents seemed to perceive that breast self-examination is necessary for early detection of breast cancer, breast self-examination should be made mandatory for all females, and early detection of breast cancer with breast self-examination can save the life of a woman. On the other hand, majority of the respondents had low perception on the role of BSE in exposing them to breast cancer and that BSE is a waste of time and resources.

Table 3 Attitude and Perception Toward Breast Self-Examination

Variables	SA	A	U	D	SD	Mean	Sd	Decision
Breast self-examination is necessary for early detection of breast cancer	109 (35.4%)	118 (38.3%)	43 (14.0%)	16 (5.2%)	22 (7.1%)	3.90	1.157	High perception
Breast self-examination should be made mandatory for all females	137 (44.5%)	122 (39.6%)	23 (7.5%)	15 (4.9%)	11 (3.6%)	4.17	1.006	High perception
Performing breast self-examination may expose me to breast cancer	36 (11.7%)	50 (16.2%)	60 (19.5%)	88 (28.6%)	74 (24.0%)	2.63	1.321	Low perception
Breast self-examination is a waste of time and resources	32 (10.4%)	54 (17.5%)	44 (14.3%)	91 (29.5%)	87 (28.2%)	2.52	1.340	Low perception
Early detection of breast cancer with breast self-examination can save the life of a woman	130 (42.2%)	79 (25.6%)	44 (14.3%)	28 (9.1%)	27 (8.8%)	3.83	1.302	High perception

Note: N=308; SA=Strongly Agree; A=Agree; U=Unsure;D=Disagree; SD=Strongly Disagree; sd=standard deviation; Decision; Weighted average = 3.41

Table 4 shows that the practice level of BSE by respondents was low, as more than half (65.6% - 77.7%) did not practice any of the variable assessing the practice of BSE. Basically, about 28.9% of respondents practiced BSE, 29.9% responded 'Yes' that 'I can perform BSE confidently' while 27.9% responded 'Yes' to 'Do you do a monthly BSE regularly'. About 26.9%, 26.6% and 26.3% responded 'Yes' to 'I do BSE while bathing', 'I feel the armpit when I perform BSE' and 'I use both hands to palpate the breast in alternate manner' respectively.

Table 4 Practice of Breast Self-Examination

Variable (N = 308)	YES n (%)	NO n (%)
Do you practice breast self-examination (BSE)?	89 (28.9)	218 (71.1)
I can perform BSE confidently	92 (29.9)	216 (70.1)
Do you do a monthly BSE regularly	86 (27.9)	222 (72.1)
I perform BSE without clothes on	84 (27.3)	224 (72.7)
I perform BSE in front of the mirror	69 (22.4)	239 (77.7)
I use the correct part of my fingers when I perform BSE	106 (34.4)	202 (65.6)
I would be able to detect an abnormality in my breast during BSE	105 (34.1)	203 (65.9)
I do BSE while bathing	83 (26.9)	225 (73.1)
I feel the armpit when I perform BSE	82 (26.6)	226 (73.4)
I raise one hand above my head when doing BSE	84 (27.3)	224 (72.7)
I use both hands to palpate the breast in alternate manner	81 (26.3)	227 (73.7)
In performing BSE, I press the breast firmly	101 (32.9)	207 (67.2)
I touch the entire breast during BSE	105 (34.1)	203 (65.9)

Table 5 shows the association between level of education and awareness of breast self-examination among female students. The result shows that the association calculated is 7.990 and p-value is 0.092, which is greater than 0.05. The null hypothesis (H₀) that states “There is no significant relationship between level of education and awareness of breast self-examination among female students”, was accepted while the alternative hypothesis (H₁) was rejected. Based on the result below, there is no significant relationship between level of education and awareness of BSE among female students ($X^2=7.990$, $p=0.092$) is true.

Table 5 Association between awareness of BSE practice and respondents’ level of education

Socio-demographic Characteristics		Awareness of BSE			x ²	p-value
		No	I don’t know	Yes		
Educational level	SS1	55	11	81	7.990	0.092
	SS2	24	1	55		
	SS3	22	4	55		

Table no 6 shows a significant relationship between age and practice of self breast examination among female students ($X^2=4.323$, $p=0.115$). Therefore, it is safe to conclude that the null hypothesis: There is no significant relationship between age and practice of self-breast examination among female students.

Table 6 Association between BSE practices and age of respondents

Socio-demographic Characteristics		Do you practice breast self examination(BSE)?		x ²	p-value
		No	Yes		
Age (in years)	12-15	142	49	4.323	0.115
	16-18	74	40		
	19-20	3	0		

		I can perform BSE confidently			
		No	Yes		
Age (in years)	12-15	139	52	3.397	0.183
	16-18	74	40		
	19-20	3	0		
		Do you do a monthly BSE regularly?			
		No	Yes		
Age (in years)	12-15	149	42	8.821	0.012*
	16-18	71	43		
	19-20	2	1		

p<0.05

4. Discussion

The findings of this study reveal that the sample primarily consists of female secondary school students, with a significant portion aged between 11 to 15 years. The distribution across classes shows a majority in SS1 and SS2. Regarding family structure, a larger percentage comes from monogamous families. Additionally, a considerable proportion of both fathers and mothers have attained tertiary education, though a small percentage has no formal education. These socio-demographic characteristics provide valuable insights into the demographics of the respondents and can inform future studies or interventions targeted towards this group.

The findings on knowledge and awareness about Breast Self-Examination (BSE) indicate that a significant portion of the respondents are aware of BSE, with the majority acquiring this knowledge from school or friends. Interestingly, the data highlights that there's a high level of awareness among the students about the necessity for females to perform BSE routinely, while only a small percentage stated that males also need to perform Breast Self-Examination. Moreover, about half (49.7%) of the respondents are aware that BSE should be conducted monthly, indicating a reasonable understanding of how often BSE should be conducted. However, there seems to be some uncertainty regarding the palpating procedure for BSE, with a considerable proportion being unsure of the correct procedure. These findings align with a study conducted by [21] aimed to investigate the knowledge, attitude, and practice of BSE among female secondary school students (SSS) in Ibadan, Nigeria. The study found that of the 348 respondents only 9.5% had good knowledge of Breast Cancer and BSE. Major sources of information were Radio/TV (82.5%) and health workers (81.6%). These findings underscore the importance of comprehensive education and awareness campaigns to ensure accurate knowledge and understanding of BSE among adolescents [22].

The findings of this study also suggest that, on average, the respondents have a moderate level of knowledge about Breast Self-Examination (BSE), with a mean knowledge score of 2.86 out of a possible 5 (± 1.14). Interestingly, a significant majority, approximately two-thirds of the respondents, demonstrate good knowledge of BSE. However, it's worth noting that about one-third of the respondents have an inadequate knowledge regarding BSE. Overall, while there's a positive trend with a majority having good knowledge, addressing the minority with poor knowledge is crucial for promoting breast health and early detection practices [23].

The findings on the attitude and perception of respondents toward Breast Self-Examination (BSE) reveal a mixed perspective. On one hand, the majority of the respondents perceive BSE as necessary for the early detection of breast cancer, believe it should be mandatory for all females, and acknowledge its potential to save lives. These attitudes reflect a positive understanding of the importance of BSE in breast health and cancer prevention.

However, on the other hand, the data also indicates that a significant portion of the respondents have low perception regarding the role of BSE in exposing them to breast cancer and perceive it as a waste of time and resources.

This finding is similar to that of a study conducted by [24] using a cross-sectional study on 240 participants in Ekiti state, Nigeria to evaluate the level of awareness and practice of BSE among senior secondary school girls. It was found that 15 (3.8%) respondents said the procedure is time wasting while 82 (20.5%) respondents said the procedures were strenuous 199 (49.8%) strongly disagree that performing breast self-examination may expose them to breast cancer.

Individuals with poor knowledge are one time less likely to do breast self-examination while in terms of attitude, those with unfavorable attitudes are one time less likely to do breast self-examination. This suggests a disconnection between the understanding of the importance of BSE for early detection and some negative perceptions about its efficacy or utility. These findings highlight the importance of addressing misconceptions and negative attitudes toward BSE through targeted education and awareness campaigns. Emphasizing the role of BSE in early detection and empowering individuals with accurate information can help improve attitudes and perceptions, ultimately encouraging more regular and effective practice of BSE among the target population.

The data regarding the practice of Breast Self-Examination (BSE) among respondents indicates a concerning trend of low engagement with BSE. A significant majority, ranging from 65.6% to 77.7%, did not practice any of the variables assessing the practice of BSE. Specifically, only around 28.9% of respondents reported practicing BSE, while similar percentages expressed confidence in performing BSE and doing it regularly on a monthly basis. Additionally, a relatively small percentage of respondents reported engaging in specific behaviors associated with BSE, such as performing it while bathing, feeling the armpit during examination, and using both hands to palpate the breast alternately. These findings are similar to a study by [25], aimed to assess knowledge and practice of Breast Self-Examination among female secondary school students in Owerri Education Zone 2 of Imo state. The findings of the study revealed among others that rural and urban female secondary school students possessed low knowledge of circle and lines methods of breast self-examination in Owerri Education Zone 2 of Imo State. It was also observed that circle and lines methods of breast self-examination are rarely practiced among rural and urban female secondary school students in Owerri Education Zone 2 of Imo State.

These findings underscore a gap between knowledge and action, as despite having some level of awareness and understanding about BSE, the actual practice among respondents is low. Addressing barriers to BSE practice, such as lack of confidence, knowledge gaps, or misconceptions, is crucial to promoting regular and effective BSE routines among the target population [26] educational interventions and access to resources and support may be necessary to encourage and empower individuals to incorporate BSE into their regular self-care practices [27].

4.1. Discussion of hypotheses

- **Hypothesis One:** The hypothesis that there is no relationship between awareness of Breast Self-Examination (BSE) practice and respondents' level of education is supported by the findings presented in Table 7. Several factors could contribute to this result. It's possible that awareness of BSE is disseminated widely through various channels regardless of educational level, such as public health campaigns, school programs, or media. Additionally, other socio-demographic factors or personal experiences may have a greater influence on awareness of BSE than educational attainment alone.

Overall, while educational level may be important in shaping health knowledge and behaviors in general, it appears to have no significant association with awareness of BSE in this particular study. Further research exploring the relationship between education and other aspects of BSE, such as knowledge, attitudes, and practices, could provide additional insights into the role of education in breast health awareness.

- **Hypothesis Two:** The hypothesis that there is no relationship between Breast Self-Examination (BSE) practice and the age of respondents is supported by the findings presented in Table no 6. However, the lack of a significant relationship between respondent's age and overall practice of BSE ($\chi^2=4.323$, $p=0.115$), as well as performing BSE confidently ($\chi^2=3.397$, $p=0.183$), suggests that age alone may not be a determining factor in these aspects of BSE behavior. Other factors such as knowledge level, attitude, access to healthcare resources, and cultural influences may also play significant roles in shaping BSE practices regardless of age.

Overall, while age may influence the regularity of BSE practice, it is likely just one of several factors contributing to overall BSE behavior among respondents. Further research exploring the interplay between age and other factors affecting BSE practice could provide a more comprehensive understanding of this association.

5. Conclusion

Despite majority of the respondents' awareness of breast self-examination, there is still a gap in knowledge and action, as despite having some level of awareness and understanding about BSE, the actual practice among respondents is low.

Recommendation

Based on the findings of this study, the following recommendations are suggested:

- Schools and healthcare organizations should collaborate to develop and implement comprehensive educational programs aimed at increasing awareness about breast health, emphasizing the importance of regular BSE, and providing guidance on proper BSE techniques.
- Efforts should be made to boost self-confidence among young females regarding their ability to perform BSE effectively. Providing training sessions and resources on BSE can help empower them to take charge of their own health.
- Healthcare providers and educators should stress the importance of regular monthly BSE as part of a proactive approach to breast health. Strategies such as reminders, informational materials, and peer support can help encourage consistent BSE practice.
- Principals and Education management board should ensure that educational materials and resources on BSE are readily available and accessible to all females, including those in secondary schools. This may involve distributing pamphlets, hosting workshops, and utilizing digital platforms to reach a wider audience.
- Community leaders, parents, and local healthcare providers should work together to garner support for promoting BSE awareness and practice. Collaborative efforts can amplify the impact of educational initiatives and create a supportive environment for maintaining breast health awareness.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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