JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

ASSESSING AWARENESS OF HEALTH IMPLICATIONS OF BREAST SELF-EXAMINATION (BSE) AMONG FEMALE HEALTHCARE PROFESSIONALS' AT NATIONAL HOSPITAL ABUJA (NHA), NIGERIA

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Abstract: Breast cancer remains a major global health concern and one of the leading causes of cancer-related mortality among women. Breast self-examination (BSE) is a simple, cost-effective, and non-invasive method for early detection. Despite its importance, gaps persist in the knowledge, awareness, and proper practice of BSE, particularly in low-resource settings. Healthcare professionals play a critical role in promoting breast cancer awareness and early detection, making it essential to evaluate their understanding and practice of BSE. This study assessed the awareness, knowledge, and practice of BSE among female healthcare professionals at the National Hospital, Abuja (NHA). Specifically, it aimed to determine their level of awareness regarding breast cancer and BSE, evaluate their knowledge of the correct techniques and timing for BSE, and assess their understanding of breast cancer risk factors and symptoms. A cross-sectional descriptive survey design was used. A sample of 165 female healthcare professionals was selected using Taro Yamane's formula and a multi-staged sampling technique. A self-structured questionnaire served as the data collection tool. Data were analyzed using SPSS version 26, applying descriptive statistics and chi-square tests for associations. Findings showed that all participants (100%) were aware of BSE, with 98.2% routinely checking for changes in breast shape, size, and texture. However, 52.7% lacked adequate knowledge of the correct postures for effective examination. While awareness is high, a gap exists in proper practice. The study recommends targeted educational initiatives and practical training sessions to improve both knowledge and technique, thereby enhancing early detection and outcomes.

IndexTerms **- Awareness, Breast Self-Examination, Health Implications, Female Healthcare Professionals, Breast Cancer.**

I. INTRODUCTION

Breast cancer is a complex, long-term disease whose etiology, pathophysiology, and cure are yet to be fully understood by scientists and researchers across the globe (Austin et al., 2021). Nevertheless, it is recognized as a group of distinct malignancies that develop in the mammary glands (Feng et al., 2018). Ductal carcinoma in situ (DCIS) is a **non-invasive** form of breast cancer, while invasive ductal carcinoma (IDC) represents the most common **invasive** type. Lobular carcinoma in situ (LCIS), is another non-invasive variant, is relatively less common (Ullah, 2019). Sarcomas such as phyllodes tumors and angiosarcomas are among the rarest forms of breast cancer.

Regardless of its type or complexity, available evidence suggests that early detection of malignant tumors significantly improves health outcomes in individuals diagnosed with breast cancer (Vaz-Luis et al., 2017). Early detection has been linked to improved health-related quality of life (HRQOL) for patients (De Ligt et al., 2019), reduced mortality rates (Bonilla et al., 2017), and a lower burden of care on both families and national healthcare systems (Wu & Lee, 2019).

As a result, various interventions have been developed to promote early detection of breast cancer. Breast self-examination (BSE) is one such intervention and has been found to be effective in identifying changes that may warrant clinical evaluation (Ogunkorode et al., 2017). However, several studies report that awareness of BSE remains suboptimal, especially among women in developing countries like Nigeria (Dinegde & Xuying, 2017).

BSE is a screening technique that enables individuals to examine their breast tissue for any visual or physical changes in size, texture, or consistency (Kudzawu et al., 2016). Although various factors may contribute to breast changes, research suggests that BSE can play a vital role in early diagnosis, thereby increasing the chances for effective treatment and survival (Udoh et al., 2020; Zhang et al., 2020).

Breast cancer remains the most frequently diagnosed cancer among women and continues to pose a global health threat (World Health Organization [WHO], 2020a). Recent estimates indicate approximately 2.1 million new cases globally (Global Cancer Observatory, 2018; WHO, 2020a). It is also the leading cause of cancer-related deaths among women, with about 1 in 38 women projected to die from the disease (American Cancer Society, 2019).

In Nigeria, breast cancer prevalence statistics remain limited due to inadequate record-keeping and reliance on informal healthcare systems, which often exclude patients from national data (Jedy-Agba, 2012). Nevertheless, available reports suggest a prevalence rate of 22.7% and a mortality rate of 16.4%, making it the most common and deadliest cancer among Nigerian women (Global Cancer Observatory, 2018; WHO, 2020b). Research by Amin et al. (2019) confirms a higher mortality rate in resource-poor countries like Nigeria, while Troeschel et al. (2019) find that African women have lower survival rates than their Eurasian counterparts.

One likely explanation for these high mortality rates is the late stage at which patients often present with tumors (Awofeso et al., 2018; Adejumo et al., 2019). Studies indicate that early diagnosis significantly improves survival outcomes (Jedy-Agba et al., 2017; Olarewaju et al., 2019). Therefore, routine BSE is strongly recommended for all women as a means of facilitating early detection and timely intervention (American Cancer Society, 2019).

What distinguishes breast cancer from many other forms of cancer is that it affects an externally visible organ, making early detection through visual and physical inspection more feasible (Habu et al., 2017). BSE empowers women to become familiar with their own breasts, enabling them to notice and report any unusual changes promptly (Weber & Kelly, 2014). Many breast cancer survivors report that they sought medical attention upon noticing a new lump. Hence, understanding normal breast shape, size, and texture is essential for timely identification of abnormalities.

Despite the proven benefits of BSE, knowledge gaps persist—particularly regarding the correct techniques and postures required for effective self-examination. These gaps are prevalent even among Nigerian women (Udoh et al., 2020; Zhang et al., 2020). This is concerning, especially for women in the healthcare sector who are expected to model and promote preventive health behavior.

Against this backdrop, this study investigates the level of awareness and understanding of BSE among female healthcare professionals at the National Hospital, Abuja, Nigeria. Specifically, the study aims to assess their knowledge, frequency of practice, and recognition of its health implications.

II. MATERIALS AND METHODS

This study adopted a descriptive cross-sectional survey design to evaluate the awareness and health implications of breast self-examination among female healthcare professionals at National Hospital, Abuja. The hospital is a tertiary healthcare institution with an 850-bed capacity and is equipped with state-of-the-art facilities for emergency and critical care. It comprises various clinical departments staffed by experts across numerous specialties.

The target population 281 all-female healthcare professionals at National Hospital, Abuja, aged between 20 to 60 years. The accessible population was defined as those who were present during the period of data collection. Inclusion criteria were limited to female healthcare professionals, while non-medical female staff was excluded from participation. The population was stratified into professional categories. Clustering was then performed based on age groups (20–60 years), followed by purposive sampling to select participants. The sample size of 165 was calculated using Taro Yamane's formula (n = 165).

Data were collected using a structured, self-administered questionnaire. This method facilitated anonymous and standardized responses, enhancing the reliability and interpretability of the findings. The questionnaire was reviewed for clarity and relevance prior to administration. Ethical approval was obtained NHA/EC/102. Informed consent was secured from all participants, and they were assured that all information provided would be treated confidentially and used solely for academic purposes. A total of 165 questionnaires were distributed to eligible participants over a two-month period (mid-February to mid-April 2025). Participation was voluntary, and completed questionnaires were collected anonymously to ensure data integrity. Data were analyzed using the Statistical Package for the Social Sciences (SPSS), Version 26.0. Descriptive statistics such as frequencies and percentages were used to summarize the data. Chi-square tests were applied to test associations and a p-value less than 0.05 was considered statistically significant.

Table 1 gives information on socio-demographic age distribution, religion, marital status, and educational qualification of respondents. A total of 26 respondents (15.8 %) were aged between 20 and 29 years, while 86 (52.1%) were between 30 and 39 years and a total of 32% (n=53) respondents were between 40 and 60 years of age. Majority of the respondents (n=118) 71.5% were Christians while 28.5% of respondents (n=47) were Muslims. Similarly, 91% (n=150) of the participants were married; the lowest number of respondents 3 amounting to (1.8%) were widowed or divorced, while 12 respondents (7.3%) were single. Majority of participants had at least a tertiary education, 17% (n=28) obtained post-graduate qualification. This suggests that all the participants recruited for this study were adequately educated and possessed tertiary education.

Table 1: Socio-Demographic Characteristics of Respondents

Variable	Frequency (n=165)	Percentage (%)
Age group		
20 – 29	26	15.8
30 – 39	86	52.1
40 – 60	53	32.1
Religion		
Christianity	118	71.5
Islam	47	28.5
Marital Status		
Single	12	7.3
Married	150	90.9
Widowed/Divorced	3	1.8
Educational Qualification		
Tertiary	137	83.0
Postgraduate	28	17.0

Source: Field Survey, 20255

Table 2 reveals the respondents response on the sources of awareness of Breast Self-Examination practice, sources of awareness and breast cancer awareness in the community. All the respondents (n=165) 100% were significantly aware of breast self-examination and what it entails. 30.3% of respondents (n=50) source of BSE was from the media platforms, while 13.3% respondents (n=22) was through workshops and seminars. The lowest 6.1% (n=10) was from the internet. Majority of the respondents 30.9% (n=51) heard of BSE through other sources, such as peers, churches, school etc. However, 100% (n=165) reported that breast cancer awareness within their respective communities 'was mostly insufficient.

Research Question 1: To what extent are female healthcare professionals at the National Hospital, Abuja, aware of breast self-examination?

Table 2: Awareness of BSE

Variable	Frequency (n=165)	Percentage (%)
Awareness of BSE		
Yes	165	100
No	0	0
Source of Awareness		
Hospital	32	19.4
Media	50	30.3
Internet	10	6.1
Seminar	22	13.3
Others (peers, school, etc)	51	30.9
Breast Cancer Awareness in the community		
Sufficient	0	0
Insufficient	165	100

Source: Field Survey, 2025

Table 3 provides respondent's knowledge of variables to check for during BSE. Majority of the study participants 98.2% (n=162) reported that while performing BSE, they usually check for unusual changes in the shape and size of the breast, 3 participants amounting to 1.8% of the total number of study participants reported that they did not check for unusual changes in shape and size of the breast while performing BSE. Similarly, 84.2% of the study participants (n=139) reported they check for inversion or retraction of the nipples while performing BSE. However, 14% of the study participants (n=23) did not check for inversion or retraction of nipples during BSE. 1.8% (n=3) were sure of what is meant to check for inversion or retraction of the nipples. This study therefore reveals that majority of respondents in this study possessed appropriate knowledge of what to check for during BSE

Research Question 2: Do female staff members of the National Hospital, Abuja, have sufficient knowledge regarding the proper methods and timing of breast self-examination?

Table 3: Knowledge of what to check for during BSE

Variable	Frequency (n=165)	Percentage (%)
Do you check for unusual changes in shape and size		
Yes	162	98.2
No	3	1.8
Do you check for inversion or retraction of the nipples		
Yes	139	84.2
No	23	14.0
Uncertain	3	1.8

Source: Field Survey, 2025

Table 4 provides details of the findings of this study in relation to the knowledge of participants on how to properly conduct BSE. As seen in the table, majority of the study participants 83% (n=137) reported that they used their fingers to perform BSE while 17 percent (n=28) utilized their entire palm in performing BSE. None of the participants used their nails and wrists to perform BSE. This indicates that majority of the participants understood the part of the hand used in performing breast self-examination.

Similarly, findings of the study indicated that 85.5% (n=141) participants agreed that BSE is best carried out while lying flat on the back. 47.3 % of the study participants (n=78) reported that BSE can be carried out with arms relaxed at the sides. 5I% of the study participants (n=84) reported that BSE can be performed while standing in front of a mirror with arms elevated above the head. This survey therefore reveals that while there is sufficient awareness that BSE can be performed while lying down, knowledge of other postures for carrying out BSE is at a suboptimal level.

Table 4: Knowledge of how to properly carry out BSE

Variable	Agree	Percentage	Disagree	Percentage
Part of hand used to carry out BSE				
Nail	0	0	165	I00
Wrist	0	0	165	100
Finger	137	83.0	28	17
Palm	28	17.0	137	83
How to check Arms raised in	84	51.0	81	49
Arms at sides in front of a mirror	78	47.3	87	49
While lying down	141	85.5	24	14.5

Source: Field Survey, 2025

Table 5 provides information on when to initiate BSE. Findings of the study indicate that 98.2% of the study participants (n-162) agreed that the best time to initiate BSE is between 7-10 days of one's menstrual cycle. Only three participants amounting to 1.8% believed that BSE could be initiated at any time. Therefore, findings of this study indicate that among female healthcare professionals of National Hospital, Abuja, there is sufficient knowledge of when to initiate BSE.

Table 5: When to initiate BSE

Variable	Frequency (n=165)	Percentage (%)
7^{th} to 10^{th} day of menstrual cycle		
Yes	162	98.2
No	3	1.8

Source: Field Survey, 2025

Table 6 indicate that majority of participants (n=128) 77.6% considered increasing age as a risk factor for breast cancer. 97% of respondents (n=160) considered family history of breast cancer as a risk factor, while having the first child at 30 years and above was equally considered as a risk factor of breast cancer by (128) 77.6% of the respondents. Majority of the participants (n=152) 92.1% reported infertility as a risk factor for breast cancer, while early menarche and late menopause were also identified by 78.8% and 89.7% of respondents, respectively.

Moreover, other risk factors for breast cancer were identified to include history of non-malignant breast lump 89.7%, use of contraceptive pills 95.8%, and lifestyle (n=100) 60.6%. Majority of the participants (n=122) 73.9% reported that there was no relationship between the size of breast and the risk of developing breast cancer. Similarly, (n=108) 65.5% of the total number of respondents reported that there was no correlation between breast cancer and high fat diet. Therefore, these findings indicate that there is limited knowledge of the risk factors of breast cancer among female healthcare professionals of National Hospital, Abuja.

Research Question 3: Do female staff at the National Hospital, Abuja, adequately informed about the risk factors and symptoms associated with breast cancer?

Table 6: Knowledge of Risk Factors for Breast Cancer

Variable	Frequency (n=165)	Percentage (%)
Increasing Age		
Yes	128	77.6
No	37	22.4
Uncertain	0	0
Family History		
Yes	160	97.0
No	5	3.0
Uncertain	0	0
Having the first child at 30 years and above		
Yes	128	77.6
No	37	22.4
Uncertain	0	0
Not having a child at all		

Yes	152	92.1
No	I3	7.9
Uncertain	0	0
Early Menarche (12 years or below)		
Yes	130	78.8
No	28	17.0
Uncertain	7	4.2
Late Menopause (55 years and above)		
Yes	148	89.7
No	17	10.3
Uncertain	0	0
History of Non-MaIignant Breast lump		
Yes	148	89.7
No	2	1.2
Uncertain	15	9.1
Contraceptive pills		
Yes	158	95.8
No	2	1.2
Uncertain	5	3.0
Use of Alcohol		
Yes	52	31.5
No	13	7.9
Uncertain	100	60.6
Lifestyle		
Yes	165	100
No	0	0
Uncertain	0	0
Breast Size		
Yes	0	0
No	122	73.9
Uncertain	43	26.1
High fat diet		
Yes	47	28.5
No	108	65.5
Uncertain	10	6.0

Source: Field Survey, 2025

Table 7: Presents the findings of this study in relation to the knowledge of the signs and symptoms of breast cancer. All the study participants s (n=l65) agreed that lump in the breast is one of the main symptoms of breast cancer. Equally, all the respondents 100% (n=165) agreed that breast discharge could be a sign of breast cancer. Nipple inversion and weight loss similarly received (n=100) 60.6% agreement from the respondents, while 67.3% (n=111) of the total number of respondents reported that chest pain, breathlessness and lump under the uncertain may be symptoms of breast cancer. 50.9% of the respondents (n=84) consider pain as symptoms of breast cancer, while only 31.5% (n=52) of respondents considered discoloration of the breast as symptom of breast cancer. Therefore, these findings suggest that there is a suboptimal knowledge of the symptoms of breast cancer among female healthcare professionals of the National Hospital, Abuja

Table 7: Features of Breast Cancer

Variable	Frequency (n=165)	Percentage (%)
Lump in the breast		
Yes	165	100
No	0	0
Discharges		
Yes	165	100
No	0	0
Pain or sore in the breast		
Yes	84	50.9
No	78	47.3
Uncertain	3	1.8
Discoloration of the breast		
Yes	52	31.5

No	13	7.9
Uncertain	100	60.6
Weight loss		
Yes	165	100
No	0	0
Chest pain		
Yes	111	67.3
No	29	17.6
Uncertain	25	15.1
Nipple inversion		
Yes	165	100
No	0	0
Lump under armpit		
Yes	111	67.3
No	29	17.6
Uncertain	25	15.1
Breathlessness		
Yes	111	67.3
No	29	17.6
Uncertain	25	15.1

Source: Field Survey, 2025

III. RESULTS AND DISCUSSION

All participants in this study (n = 165) demonstrated complete awareness of breast self-examination (BSE) and how it is performed. This aligns with findings by Awogbayila et al. (2023), who observed high BSE awareness among market women in Nigeria, and Labrague et al. (2020), who noted similarly high awareness among healthcare workers and students. Likewise, Udoh et al. (2020) reported that over 70% of healthcare professionals possessed adequate knowledge of BSE, confirming the association between occupational exposure and increased awareness.

A notable contributing factor to this high level of awareness may be the educational background of participants. All respondents held at least a tertiary qualification, with 17% possessing postgraduate degrees. Despite this, only 19.4% reported learning about BSE in the hospital setting. Instead, many cited alternative sources such as the internet, media, peers, and academic institutions, reflecting trends highlighted by Azhar et al. (2023) and Zhu et al. (2024), who identified digital platforms as major sources of BSE information among women in Asia.

However, the findings contrast with earlier studies such as Garg (2016) and Ahmed et al. (2018), which reported low BSE awareness in low-income and less educated populations. These discrepancies could be due to participant profiles—while the current study focused on educated healthcare workers, those prior studies included women across various literacy levels and socioeconomic backgrounds. Similarly, Mustafa (2024) noted low awareness among young women in urban Pakistan, likely influenced by cultural and educational disparities.

While 98.2% of participants knew what to look for during BSE, procedural knowledge was less consistent. Though 83% correctly identified the use of fingers for palpation, only 47.3% recognized that checking in front of a mirror with arms at the sides is an appropriate posture. This finding echoes Fondjo et al. (2018), who found that while over 90% were aware of BSE, only 41% practiced it correctly using mirror inspection.

Regarding timing, most participants understood BSE should be performed between the 7th and 10th day of the menstrual cycle, with only 3% unaware. This marks a notable improvement compared to earlier studies like Birhane et al. (2017) and Dadzi and Adam (2019), where many women lacked awareness of optimal timing. The current difference may stem from the study's sample being composed of more highly educated healthcare workers.

Despite the high levels of BSE awareness and procedural understanding, gaps remain in knowledge of breast cancer risk factors. While some participants identified early menarche and aging as risks, many failed to recognize alcohol consumption and obesity as contributing factors. This aligns with Alanazi et al. (2025), who reported that even among educated women; awareness of modifiable risk factors was limited. Likewise, Azhar et al. (2023) concluded that BSE practice does not always translate into comprehensive cancer literacy.

Interestingly, even among those with postgraduate qualifications in this study, knowledge of breast cancer risk factors was still insufficient. This challenges the assumption—previously suggested by Talzhibi and Feizi (2014)—that higher education equates to

better awareness. In support, Zhu et al. (2024) and Nicolis et al. (2024) emphasized that while general education enhances basic health knowledge, it does not necessarily improve understanding of nuanced risk factors without targeted health education.

Finally, Cumber et al. (2017) and Jeronimo et al. (2017) have both highlighted how poor knowledge of breast cancer signs contributes to delayed diagnosis in low- and middle-income countries. The findings of this study affirm the importance of structured, continuous health education—even among healthcare professionals—to ensure that knowledge of risk factors, symptoms, and early detection strategies is both accurate and actionable.

IV. LIMITATION OF THE STUDY

The study cross-sectional nature prevents linking cause and effect while a single study at NHA definitely makes the findings not applicable to other settings. Though stratified sampling was used, the purposive selection of participants may have introduced bias, similarly, there was no practical assessment of BSE skills, and the study lacked follow-up to track changes over time. Lastly, male healthcare workers were excluded narrowing the scope of the findings.

V. CONCLUSION

This study was conducted to evaluate the level of awareness, practices, and implications of breast self-examination (BSE) among female healthcare professionals at the National Hospital, Abuja. Using a quantitative research design and purposive sampling technique, a total of 165 participants from various hospital departments were recruited.

The findings revealed a high level of awareness regarding BSE among participants. Common sources of information included hospitals, mass media, the internet, peers, seminars, workshops, and educational institutions. Most respondents demonstrated adequate knowledge of how to perform BSE and what to look for during the examination. ajority acknowledged the importance of BSE for early detection of breast cancer, which is crucial for improving survival outcomes.

Despite these positive findings, gaps were identified. Knowledge of the appropriate postures for conducting BSE was found to be suboptimal. Furthermore, there was limited awareness of key breast cancer risk factors and symptoms among participants. This is particularly notable given the educational background of the study population, highlighting a disconnection between general health literacy and specific cancer-related knowledge.

These findings suggest the need for continuous education and targeted awareness programs within healthcare settings, even among health professionals, to ensure comprehensive knowledge of breast cancer prevention and early detection strategies.

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