



KNOWLEDGE, ATTITUDE AND PRACTICE OF BREAST SELF-EXAMINATION IN NIGERIA: A 10 YEAR SYSTEMATIC REVIEW

Ogunmodede Eunice Oluwakemi^{1*}, Aluko J.O.² and Anorkwuru R.³

1. Department of Nursing, Bowen University, Iwo, Osun State, Nigeria.

Email: euniceogunmodede@gmail.com

2. Department of Nursing, University of Ilorin, Ilorin, Kwara State, Nigeria.

Email: joelforfavour@gmail.com

3. School of Nursing, Babcock University, Ilisan-Remo, Ogun State, Nigeria.

Email: anokwurur@babcock.edu.ng

*Correspondence author: euniceogunmodede@gmail.com

Cite this article:

Ogunmodede E.O., Aluko J.O., Anorkwuru R. (2022), Knowledge, Attitude and Practice of Breast Self-Examination in Nigeria: A 10 Year Systematic Review. African Journal of Health, Nursing and Midwifery 5(4), 139-154. DOI: 10.52589/AJHNM-GNIIRNMI

Manuscript History

Received: 9 Nov 2022

Accepted: 19 Dec 2022

Published: 29 Dec 2022

Copyright © 2022 The Author(s).

This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.

ABSTRACT: Background: Among the screening methods for the early detection of breast abnormalities that could lead to breast cancer, Breast self-examination is the basic, simplest, cost effective, self-administered and very important technique. It allows women to get acquainted with the nature of their breasts and therefore allows them to discover any deviation. Early detection goes a long way in successful treatment of BC and this is easily come by with good and adequate knowledge, good attitude towards and excellent skill to administer BSE. Consequently, we drew out the data on BSE knowledge, attitudes and practice among Nigeria women. **Methods:** A systematic review was done among studies conducted in Nigeria using Arskey and O'Malleys' framework as a guide. The databases searched include PubMed, Google, Google Scholar, Jstor, Intech Open, Proquest and PubMed Central for relevant studies on women's knowledge, attitude and practice on BSE. Studies included in the review were from thirteen states in Nigeria. The articles reviewed in this systematic review were journals published between August 2012 to July 2022, a 10-year systematic review. **Results:** Sixty-three (63) articles were firstly extracted to be eligible for review; thirty-seven (37) were excluded due to duplication of content, lack of focus on the concept and incomplete content. Another nine (9) were discarded for muddling up result with another concept and for not involving at least two of the variables, i.e., knowledge, attitude and practice of breast self-examination. The seventeen (17) articles were conducted in thirteen states of which two (2) were conducted in Osun State as well as Sokoto State and three in Oyo State while one (1) each in other ten states, namely Benin, Kano, Imo, Akwa-Ibom, Ekiti, Ebonyi, Abia, Ondo, Awka, and Lagos States. Twelve (12) studies reported evidence on BSE knowledge, attitude and practice; three (3) on knowledge and practice; and two (2) reported on attitude and practice of BSE. The findings of this study submit varying knowledge levels on BSE though—averagely good knowledge but poor practice among women in Nigeria. **Conclusion/Recommendation:** The findings from these studies show that the knowledge of BSE among women folk in Nigeria is averagely low though women's attitude seems good. Similarly, the practice of BSE among women in Nigeria is poor. Therefore, proactive measures need to be taken to increase the level of knowledge of BSE through educational programs among every category of women to reduce morbidity and mortality from breast cancer in Nigeria in the nearest future.

KEYWORDS: Knowledge, Attitude, Practice, Breast self-examination, Nigeria.



INTRODUCTION

Background

Screening for early detection and diagnosis of health conditions is an essential principle in public health. So, breast self-examination (BSE), mammography and clinical breast examination (CBE) are assumed and attested to be suitable and effective techniques of ensuring early detection of breast cancer (Iwuoha et al., 2021). BSE is singly assumed to be the most appropriate and effective strategy of ensuring early detection of breast cancer and could detect 40% of breast lesions among women if properly administered. Udeze et al. (2020) also averred that Jenkins in his study explained that wherever breast self-examination is adequately practised, about seventy to eighty (70–80) percent of breast cancer are discovered by women themselves. Having good knowledge of breast self-examination and positive attitude towards it will have a great impact on the level of practice (Olajide et al., 2021) and this will go a long way in detecting breast cancer which had widely spread among women.

Breast cancer, according to Choumessi et al. (2021), is considered the second most identified cancer among the whole world population and the commonest malignancy among women. Sadoh et al. (2021) described breast cancer to be the commonest cancer in women and Udeze et al. (2020) averred that it has become a problem all around the world; it accounted for 14% globally. Sharma (2021) reported that breast cancer accounted for 29.5% of all cancers in Africa and 33.3% annually in Nigeria, according to Ibitoye and Thupayegale-Tshwenegae (2019). Late presentation of patients at advanced stages due to late detection when little or no benefit can be derived from any form of therapy is the hallmark of breast cancer in Nigerian women (Alshahrani et al., 2019). The escalation of breast cancer has brought about innumerable chaos on women society just because they fail to detect breast cancer early with BSE which is considered the most appropriate strategy for all categories of women, and they also report breast cancer cases late even at an advanced stage in hospitals (Udeze et al., 2020). Early detection and prompt report for quick treatment on breast cancer is the basic and ultimate priority in reducing the morbidity and mortality from breast cancer (Seifu & Mekonen, 2021) and this is easily achievable through proper administration of BSE.

BSE, according to WHO (2022), is an inspection of one's breasts that women do on themselves to help increase breast awareness, by using one's eyes and hands to determine if there are any changes in the look and feel of the breasts. The practice of BSE globally, in Africa as well as Nigeria has not been encouraging though, just because the knowledge and the attitude towards it are also poor (Seifu & Mekonen, 2021). Knowledge, attitude and practice of breast self-examination are highly essential among women folk to detect breast cancer early to reduce the morbidity and mortality rate in the very nearest future (Akpanekpo, 2017). Knowledge of breast self-examination has to do with being conversant with the signs of breast cancer, the procedures and how to perform BSE (Asmare et al., 2022; DeSantis et al., 2019). With all indications from the previous studies, knowledge of BSE has a positive impact on early detection of breast cancer and may also influence the attitude and practice of BSE (John, 2018). Attitude is an established way of thinking about BSE which includes acceptance that BSE is necessary and that all women should perform it on themselves, as well as readiness to encourage other people to get involved, practice it and seek early medical care at the discovery of any abnormalities (Asmare et al., 2022). Practising BSE encompasses the act of looking to assess and palpating one's breast once a month within the 7th–10th day of menstrual cycle and be able to detect abnormalities (Sadoh et al., 2021). The practice of BSE makes the individual become familiar



with the structure of her breast and be responsible for her health since the detection of any abnormality will require seeking health care early.

Factors affecting knowledge and practice of the BSE, according to Salem et al. (2020), Tuyen et al. (2019), and Ziuo et al. (2018) were reported from different part of the world to include information about BSE, age, source of information, marital status, medical background, level of education, access to internet, level of income and attitude towards practice of BSE. Adding to the factors affecting the practice, according to Abeje et al. (2019) and Karim et al. (2019), include health education on breast cancer, BSE techniques, occupation, and family history of breast cancer.

BSE is a recommended basic approach for detecting breast abnormalities especially in the developing nations. It is easy to come by, un-invasive, simple, feasible, and convenient without the need for any intermediary (Seifu & Mekonen, 2021). Several studies have been done on the knowledge of women, their attitude as well as the practice of BSE in Nigeria, yet the results have been inconclusive and could not be generalized because it has been limited to the setting used for the research, hence this 10-year systematic review of literature and results of the studies to bring up an estimation of the level of knowledge, attitude and practice of breast self-examination in Nigeria. The data collected from this review will assist in developing an approach, policies and recommendations on improving the knowledge, attitude and practice of BSE among the old and young women in Nigeria.

METHODS

Arksey and O'Malley's framework was used to conduct this a 10-year systematic review focusing the knowledge, attitude and practice of breast self-examination among women in Nigeria. The framework, according to Arksey and O'Malley (2005) comprises: Identifying the research question, Identifying relevant studies, Study selection, Charting the data, Collating, summarising and reporting the results, and Consultation exercise. A detailed description of this study's methodology has been previously reported in the published protocol (Udoh et al., 2020).

Identifying Research Question

The general question reviewed in this study is: What is the level of knowledge, attitude and practice of breast self-examination among women in Nigeria?

The specific questions reviewed are:

- i. What is the level of knowledge of breast self-examination among women in Nigeria?
- ii. What is the attitude towards breast self-examination among women in Nigeria?
- iii. What is the evidence of practice of breast self-examination among women in Nigeria?



Identifying Relevant Literature

A comprehensive search for potentially eligible articles was conducted in the following databases to obtain relevant articles: Google, Google Scholar, PubMed, PubMed Central (Hinari), Jstor, Proquest, Ebs Cohost and Intech Open. The database search occurred in July/August 2022 with the use of the keywords such as “knowledge or awareness”, “female”, “attitude or perception”, “practice” “breast self-examination”, “women”, “female adolescents” and finally, “knowledge, attitude and practice” in Nigeria. Boolean term such as AND/OR was used to separate the keywords. Then, Medical Subject Heading (MeSH) was an included term during the keywords search in the databases. Also, the studies reviewed were carried out between August 2012 and August 2022 to extend the scope of the search. Complete arrays of literature on knowledge, attitude and practice of breast self-examination were considered; only studies conducted in the English language in Nigeria were included without restriction to study design during the database search. Then, the reference list of all the included studies for eligible articles were compiled.

Study Selection

The articles title and the abstract were assessed by reviewers, full-text review of the eligible studies was done to confirm the eligibility for inclusion. Full-text review was thoroughly done before selections were made for inclusion and exclusion. Data were eventually extracted from all articles included in the study. All articles with incomplete data and unclear information were excluded. Sixty-three (63) articles from different databases were acknowledged; thirty-seven (37) were found duplicated, not focused and lacking full content; several others were published before the chosen time which was August 2012; nine (9) articles were eventually discarded for not fulfilling at least two of the variables considered, especially practice and either knowledge or attitude, with some reporting breast cancer and breast self-examination together. Seventeen (17) articles were finally found to be eligible and included for analysis in this systematic review.

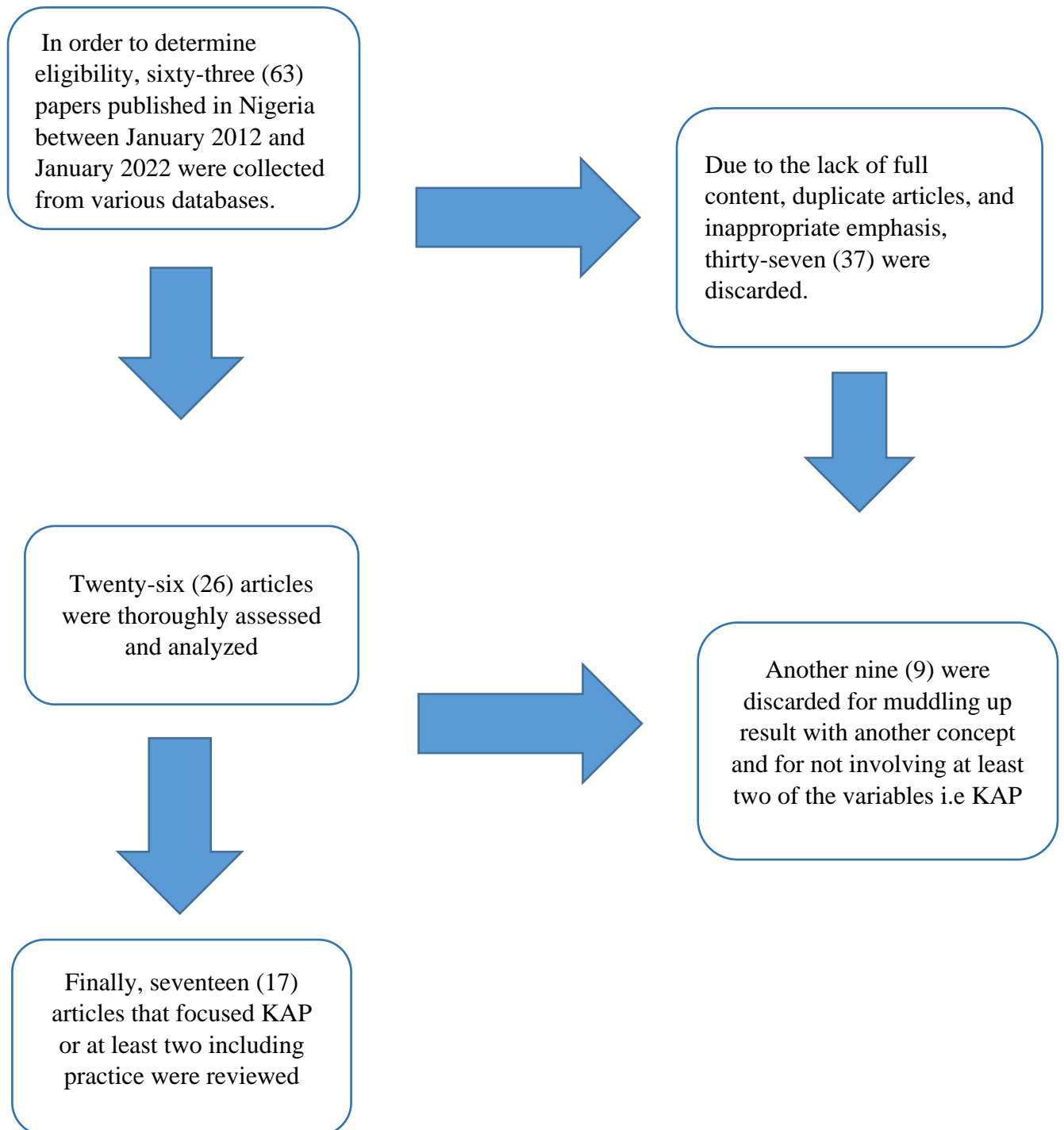


Figure 1: Article Extraction Flow Chart



Charting the Data

All the studies eligible were reviewed in detail for extraction of data on author and date, objective which comprises the broad objective of the study and the setting, design of the study, population targeted with the sample size, findings from the study and the conclusion.

Characteristics and Result of the Included Articles

The seventeen (17) studies reviewed were from different states and cities in Nigeria, two (2) of them were experimental studies, one (1) adopted Participatory Action Research (PAR) design while the remaining fourteen (14) adopted descriptive cross-sectional design. The studies were carried out among different categories of women from different settings: six (6) among undergraduate students; four (4) among secondary school girls; two (2) among the community women; one (1) among the nurses; one (1) among female teachers; two (2) among the mothers attending outpatient clinic, antenatal and immunization clinic; and the remaining one (1) was among the female workers that volunteered. Figure 1 is the steps for the selection of the included article.

Table 1: Characteristics of Articles Retrieved on Breast Self-Examination in Nigeria

Serial Number & Name of Author and Date	Objectives of the Study	Study Design	Study Population	Findings/Result of the Study	Conclusion of the Study
1. Oginni et al. (2014), Jan–April	To assess the knowledge, attitude and practice of breast self-examination in early detection of breast anomaly among female cleaners in Obafemi Awolowo University, Osun State, Nigeria.	A descriptive survey	140 volunteers were selected using the convenience sampling method.	109 (78%) had good attitude, 35 (25%) had excellent knowledge and 97 (69%) claimed performing BSE while just 25 (18%) did it monthly.	More emphasis needed to be laid on the women's education through teaching on demonstration of BSE.
2. Tobin and Okeowo (2014), May	To assess the practice and perception towards BSE among Secondary School Teachers in Benin City, Nigeria.	A cross sectional study	Among 300 female secondary school teachers in selected Local Government in Benin City.	All participants had knowledge of BSE but only 38 (12.7%) had good knowledge, attitude towards BSE was good for 240 (80%), 238 claimed practicing BSE but 24(10.1%) regularly practice breast self-examination.	Proper education on BSE will enhance the knowledge and attitude of the female teachers thereby motivating their practice.



3. Yakubu et al. (2014), July–December	To investigate the knowledge, attitude and practice of BSE among female nurses in Aminu Kano Teaching Hospital, Kano, Nigeria.	A descriptive cross-sectional study	102 female nurses were selected using simple random sampling technique.	The entire 102 female nurses were aware and have good attitude towards BSE, 93 (91.2%) had knowledge of practice, 42 (41.2%) practice monthly though none gave correct description.	More educational program due to poor proficiency needed to be propagated among nurses to enhance their BSE practice to motivate them to teach it among other women.
4. Casmir et al. (2015), September	This study was to determine the knowledge and practice of breast self-examination among female undergraduates in Owerri, Southeastern Nigeria.	A descriptive cross-sectional survey	720 undergraduate female students	512 (71.1%) had good knowledge of BSE, 696 (96.7%) agreed that BSE is beneficial to them and 410 (80.1%) had knowledge of breast cancer and thereby practiced BSE.	Educational programs should be emphasized on the benefit of BSE in early detection of breast cancer.
5. Adamu et al. (2016), June	To find out the knowledge, attitude and practice of breast self-examination among female students of a tertiary institution in Sokoto.	A cross-sectional descriptive study	80 participants were selected by stratified sampling technique.	36 (46%) had adequate knowledge of BSE, about 77 (96.5%) had a positive attitude while just about 14 (17.5%) out of 36 (45%) claimed to have good practice.	practice need to be enhanced to promote the proficiency.
6. Akpanekpo (2017), January	To determine the knowledge attitude and practice of BSE among female undergraduates in the University of Uyo, Southern Nigeria.	A cross-sectional descriptive study	350 registered female undergraduate students of University of Uyo selected using a proportionate stratified random sampling method.	Among the respondents; 274 (78.3%) of the respondents had heard of BSE and 181 (51.7%) agreed with it's important in the early detection of cancer. Only 82 (23.4%) of respondents reported performing BSE regularly.	Despite high level of awareness through different sources but few has deep knowledge which adversely affected the level of practice.



7. Olaogun et al. (2017), October	To determine the prevalence of BSE practice, the correctness of the practice steps and the knowledge of breast cancer disease among women attending secondary health facility.	A descriptive study	238 women attending Antenatal and Immunization care were selected using convenience Specialist, Ikere-Ekiti in Ekiti State.	214 (89.9%) were formally educated on breast cancer and breast self-examination, 75 (55.6%) respondents claimed to be practicing BSE while 168 (70.6%) agreed that performing monthly BSE is worthwhile and beneficial.	Despite high level of awareness, the level of practice was low. So, there is need for more health education among women to enhance knowledge of breast cancer, that of BSE and practice.
8. Sani and Yau (2018)	To find out the relationship between knowledge and practice of BSE among female workers in Sokoto, Nigeria.	A quantitative descriptive cross-sectional design	400 educated women in Sokoto were selected with the multistage sampling technique.	Only 116 (29.6%) had adequate knowledge whereas 135 (52.7%) claimed to be doing it monthly.	More teaching on BSE among women will promote regular practice and interventional programs be encouraged.
9. Hanson et al. (2019)	To find out the level of practice and barrier of BSE among women in a rural community in South-Western area of Oyo State, Nigeria.	Participatory Action Research (PAR) Design was adopted	345 participants were purposively selected cross-sectionally.	86 (24.9%) of the respondents had knowledge of BSE while 81 (23.5%) respondents had ever practiced BSE. 277 (80.3%)s had good perception towards BSE.	Educational program is to be encouraged to promote the knowledge, perception and practice of BSE.
10. Ossai et al. (2019), January	To determine the predictors of practice of breast self-examination among female undergraduates of Ebonyi State University.	A descriptive cross-sectional study	365 female students were selected using the multistage sampling technique.	278 (76.4%) were aware of BSE 202(55.3%) had good knowledge of BSE, 232 (63.6%) had performed BSE but just 58 (15.9%) do it monthly while 272 (74.6%) of those who were aware of BSE had good attitude and can encourage others to get involved.	There is need to increase knowledge of women on breast self-examination at all stages of life through health education using all available medium.



11. Ogun (2019), December	To find out the effect of educational intervention on breast self-examination among senior secondary school girls in Ibadan North-East area of Oyo State, Nigeria.	A quasi-experimental intervention al study with pre-posttest having experimental and control group	600 secondary school girls (300 per group, i.e., experimental and control) selected with the multistage sampling technique from four different schools in the Ibadan North-East area.	Pre intervention level of good knowledge in both experimental and control are 18/11 and increases to 300 and 19 consecutively; pre-intervention perception revealed 100 & 97 which increases to 300 & 134 post intervention, However, practice in experimental pre-intervention was 12 (4%) that increases 198 (66%) while control increases from 32 (10.7%) to 40 (13.3%).	The adolescents will benefit better from the BSE educational program by including it into their secondary school curriculum to enhance their knowledge and practice from early age.
12. Iwuoha et al. (2021), February	To identify the knowledge, attitude and practice of BSE among women in Abia State, Nigeria.	A cross sectional study	415 women in Aba in Abia State	331 (76%) had heard of BSE, 280(67.5%) had knowledge of breast self-examination, 304 (73.3%) had a good attitude towards BSE while 34 (28.5%) had ever practiced BSE monthly.	The conclusion of this study proved high knowledge with a good attitude but poor practice.
13. Usman et al, (2020), March	To assess the knowledge, attitude and practice of breast self-examination among female secondary school students in Osogbo, Osun State, Nigeria.	A cross sectional study	400 female secondary school students were selected through the multistage sampling technique.	272(68) had knowledge of BSE, 366(91%) has favourable attitude while 365(89%) had poor practice.	This study concluded that larger percentage had knowledge but inadequate with poor attitude resulting in poor practice.



14. Ibitoye and Thupayegale-Tshwenegae (2019), February	To assess the level of impact of education on knowledge, attitude and practice of BSE among adolescent girls at the Fiwasaye Girls Grammar School, Akure, Ondo State, Nigeria.	A quasi-experimental study with pre and post intervention	A total sample size of 300 female students were selected using the multistage clustering and simple random sampling techniques.	Pre-intervention good knowledge of BSE of 71 (25.4%) increases to 158 (56.4%) post intervention; attitude of 141 (50.4%) increases to 185 (66.1%) in post while practices of 113 (40.4%) increases to 226 (80.7%) post intervention.	Educational intervention program will go a long way in enhancing knowledge, attitude and practice of BSE among adolescents and women.
15. Madubogwu et al. (2021)	To assess the knowledge, attitude and practice of BSE among female students of Chukwuemeka Odumegwu Ojukwu University, Awka, Anambra State, Nigeria.	A cross-sectional descriptive study	284 female students of the University were selected	247 (87.0%) had ever heard about BSE but the deep understanding varies; about 158 (55.6%) ever practiced BSE and 23 (8.1%) had once discovered abnormality. 242 (85.2%) of the participants considered BSE a good practice to detect BC.	The students were well informed through social media and books. Therefore, education will go a long way in improving the understanding and enhance the skill.
16. Alabi et al. (2018), June	To assess the knowledge, attitude and practice of BSE among female teachers in selected secondary schools in Ogbomoso, Oyo State.	A cross-sectional study	A total number of 173 female teachers were sampled for the survey.	124 (71.67%) have heard of BSE, 103 (59.54%) claimed to know how to perform breast self-examination and 73(42.2%) of them performed it monthly out of which 11 discovered lumps from their breast. About 146(84.39%) have positive attitude towards performing BSE.	It becomes a necessity to properly train the female teachers so that they can effectively educate their students.



17. Lafiaji-Okuneye et al. (2022), January	To assess the knowledge and practice of breast self-examination among female undergraduates in Lagos State.	A cross-sectional study	230 female undergraduates were selected from two universities in Lagos using a simple random sampling.	206 (89.5%) has knowledge of BSE, 211 (91.7%) agreed positively with BSE as effective for early detection of breast cancer while 165 (71.7%) claimed to have ever performed BSE. Result proved that 27.9% of those with good knowledge of BSE practiced it.	Strategies to reduce the wide gap between the level of knowledge and practice of BSE in early detection of breast cancer should be advocated through all available means.
--	---	-------------------------	--	---	---

Summary and Report of the Results

All the relevant extracted data from the eligible articles were thematically analyzed. The titles were assembled and the report of the findings were summarized and presented with a focus on the knowledge, attitude and practice of BSE. Though not all the studies reviewed had the three variables; they all had the practice with either attitude or knowledge. Some of the studies interchanged attitude with perception while those that interchanged awareness with knowledge were excluded because mere awareness does not really mean a full understanding of knowledge as a concept.

STUDY FINDINGS

Eleven (11) of the seventeen (17) articles that were reviewed presented evidence on knowledge, attitude and practice (Lafiaji-Okuneye et al., 2022; Adamu et al., 2016; Ibitoye & Thupayagale-Tshwene Game, 2019, Usman et al., 2020; Oginni et al., 2014; Casmir et al., 2015; Alabi et al., 2018; Iwuoha et al., 2021; Ossai et al., 2019; Yakubu et al., 2014; Tobin & Okeowo, 2014).

Five (5) out of the twelve (12) listed above added awareness to their findings (Tobin & Okeowo, 2014; Yakubu et al., 2014; Alabi et al., 2018; Ossai et al., 2019; Iwuoha et al., 2021). Three (3) (Ogun, 2019; Hanson et al., 2019) reported on knowledge, practice and perception while Sani and Yau (2018) reported knowledge and practice alone. Finally, Akpanekpo (2019), Olaogun et al. (2017) and Madubogwu (2021) reported on awareness, attitude and practice.

Knowledge of Women on BSE

Among the seventeen (17) articles included in this systematic review that reported the evidence of knowledge of women on breast self-examination, seven (7) among those that did cross sectional survey reported high level of knowledge above average (Alabi et al., 2018; Casmir et



al., 2015; Iwuoha et al., 2021; Lafiaji-Okuneye et al., 2022; Ossai et al., 2019; Usman et al., 2020; Yakubu et al., 2014). Five (5) other survey studies reported low knowledge of below average (Adamu et al., 2016; Hanson et al., 2019; Oginni et al., 2014; Sani & Yau, 2018; Tobin & Okeowo, 2014). The two (2) experimental studies among them (Ibitoye & Thupayegale-tshwene Game, 2019; Ogun, 2019) recorded a very low knowledge among the participants before intervention, which increases above average after intervention. The remaining three articles by Olaogun (2017), Madubogwu (2021) and Akpanekpo (2017) did not report on knowledge but on awareness. The seven studies that reported knowledge of BSE above average were conducted among female nurses (Yakubu et al., 2014), community women (Iwuoha et al., 2021), secondary school girls (Alabi et al., 2018; Usman et al., 2020) and the remaining three among female undergraduates (Casmir et al., 2015; Lafiaji-Okuneye et al., 2022; Ossai et al., 2019).

The findings revealed in these reviewed studies on knowledge levels on BSE varied among women in Nigeria; therefore, further studies needed to be carried out to verify the improvement in the evidence of knowledge level of BSE in Nigeria.

Attitude toward BSE

All the articles reported a high rate of attitude towards BSE except Hanson et al. (2019), Ogun (2019), Sani and Yau (2018) that did not give any report on attitude. Tobin and Okeowo reported a positive (80%) attitudinal disposition of female teachers; Alabi et al. (2018) and Usman et al. (2020) reported a good attitude towards BSE among secondary school girls as against Ibitoye (2019) that reported a moderate attitude also among secondary school girls. Akpanekpo (2017), Ossai et al. (2019), Madubogwu (2021) and Lafiaji-Okuneye (2022) reported a high level of attitude among female undergraduates towards breast self-examination. Female nurses, according to Yakubu (2014), had a positive attitude. Also, community women according to Iwuoha (2021), women attending antenatal and immunization clinics according to Olaogun et al. (2017) as well as voluntary participants according to Oginni (2014) were recorded to have a positive attitude towards breast self-examination but Hanson et al. (2019) in their study reported female workers with a poor attitude. This review showed that women's attitude towards BSE in Nigeria is averagely good.

Practice of BSE

All the seventeen (17) articles reviewed revealed the evidence of practice of BSE; five (5) of the studies apart from the two interventional studies evidenced above 50% regular practice (Casmir et al., 2015; Madubogwu et al., 2021; Olaogun et al., 2017; Sani & Yau, 2018; Usman et al., 2020) while the two intervention studies only increased to above 50% after intervention (Ibitoye & Thupayagale-tshwene Game, 2019; Ogun, 2019). The remaining ten (10) (Adamu et al., 2016; Akpanekpo, 2017; Alabi et al., 2018; Hanson et al., 2019; Iwuoha et al., 2021; Lafiaji-Okuneye et al., 2022; Oginni et al., 2014; Ossai et al., 2019; Tobin & Okeowo, 2014; Yakubu et al., 2014) reported practice of BSE below average. The findings in this review revealed a higher percentage of low practice of BSE.



Discussion

One of the key screening methods for the early diagnosis of breast tumors, particularly in settings with limited resources such as in the underdeveloped world, is breast self-examination (Olaogun et al., 2017). This study found indications of knowledge, attitude and practice in women with regard to BSE.

This systematic review was carried out to investigate the evidence on BSE knowledge, attitude, and practice among different categories of Nigerian women between August 2012 and July 2022. The results in this study were reported from thirteen (13) different states: two (2) were conducted in Osun and Sokoto States, three (3) in Oyo State and one (1) each from other states including Lagos, Ebonyi, Anambra, Ondo, Ekiti, Kano, Abia, Edo, Akwa-Ibom and Imo States. The findings generally show that there has not been enough study on BSE knowledge, attitudes, and practices to cover Nigerian States. This is consistent with the findings of Udoh et al. (2020). The finding also showed that women in Nigeria had varying levels of understanding of BSE. It suggested further that BSE practice is still in a poor state in Nigeria and this could be contributing to the escalation of breast cancer among women.

From a study carried out among one hundred and forty (140) participants of female cleaners by Oginni et al. (2014), just 25% of the participants considered had good knowledge of BSE. Tobin and Okeowo (2014) also discovered 12.7% of three hundred (300) female secondary school teachers had good knowledge. Also, Ibitoye and Thupayegale-Tshwene Game (2019), in a study conducted among female secondary school girls, supported that there is low knowledge of BSE, which was increased from 25.4% to 56.4% after intervention. This greatly supported the need for more educational programs among different categories of women in Nigeria. The attitude of women towards BSE in the studies reviewed is averagely good but has no cumulative impact on the practice of BSE (Usman et al., 2020; Iwuoha et al., 2021; Olajide et al., 2021).

Majority, about 89.5% of two hundred and thirty (230) undergraduates that participated in a study conducted by Lafiaji-Okuneye et al. (2022), had knowledge but only 27.9% could practice BSE. The practice of BSE among all levels of women is still very low and this is associated with poor knowledge of BSE among women. This study reveals that the knowledge of BSE in Nigeria is still very low and varies significantly. These findings supported the submissions of Azubuike et al. (2014). Therefore, in-depth information, regular practice, and a positive outlook on BSE are crucial for identifying a normal breast and spotting any anomalies that are required for the early identification of BC in order to reduce morbidity and death linked to the disease.

Implication for Practice

BSE is one of the screening methods for early detection of symptoms of breast cancer; others include clinical breast examination, mammograms and some others but BSE is the basic and most available to every level of women. The findings of this review show evidence that the knowledge and attitude of BSE are average among women generally (Oginni et al., 2014) and a very low level of practice (Olaogun et al., 2017). Different perceptions of different groups of women needed to be brought together in Nigeria through training. Therefore, educational programs on KAP should be propagated to enhance KAP of BSE to encourage early detection of breast cancer and thereby reduce its morbidity and mortality.



Implication for Research

Limited publications were discovered on this review on breast self-examination; some of the eligible articles adopted cross-sectional surveys and the result found will stimulate more research studies on training Nigeria women on KAP of breast self-examination among different categories of women. This review will also help the researchers to dig deep into the factors that may be contributing to low practice of BSE among women in Nigeria. Again, it will help the researchers in the further studies to adopt a method that will include categories of women at every level and stage. The study is also limited to review of existing literature. Further clinical evidence may be needed to ascertain the current clinical reports.

CONCLUSION

This systematic study confirmed that there is a paucity of published literature on the knowledge, attitude and practice of BSE in Nigeria. Some of the studies reported a low level of knowledge, attitude and practice of breast self-examination, whereas all these are crucial in the early detection of breast cancer. Hence, this study recommends further studies on knowledge, attitude and practice to aid the identification of contextual challenges and provide evidence-based solutions to improve Nigeria women's knowledge, attitude and practice.

REFERENCES

- Abeje, S., Seme, A., & Tibelt, A. (2019). Factors associated with breast cancer screening awareness and practices of women in Addis Ababa, Ethiopia 11 Medical and Health Sciences 1117 Public Health and Health Services 11 Medical and Health Sciences 1112 Oncology and Carcinogenesis. *BMC Women's Health*, 19(1), 1–8. <https://doi.org/10.1186/s12905-018-0695-9>
- Adamu, H., Kalthum, S., Adamu, A. N., Centre, F. M., & Kebbi, B. (2016). Knowledge, Attitude and Practice of Breast Self Examination among Female Students of a Tertiary Institution in Sokoto, North-West Nigeria. *Annals of International Medical and Dental Research*, 2(4), 74–79. <https://doi.org/10.21276/aimdr.2016.2.4.23>
- Akpanekpo, E. I. (2017). Knowledge, Attitude and Practice of Breast Self Examination (BSE) among Female Undergraduates in the University of Uyo, Southern Nigeria. *Evo Journal of Public Health*, 2(2), 6–11. <https://doi.org/10.21276/ejph.1.3.2>
- Alabi, M., Abubakar, A., Olowokere, T., Okeyode, A., Mustapha, K., & Ayoola, S. (2018). Knowledge, Attitude and Practice of Breast Self-examination among Female Teachers from Selected Secondary Schools in Ogbomosho, Oyo State. *Nigerian Journal of Experimental and Clinical Biosciences*, 6, 8–12. <https://doi.org/10.4103/njecp.njecp>
- Alshahrani, S. M., Fayi, K. A., Alshahrani, S. H., Alahmari, D. S., & Bejadi, K. M. Al. (2019). Assessment Awareness of Public About Breast Cancer and its Screening Measurements in Asir Region , KSA. 10(June), 357–363.
- Arksey, H., & O'Malley, L. (2005). Scoping studies : towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32. <https://doi.org/10.1080/1364557032000119616>
- Asmare, K., Birhanu, Y., & Wako, Z. (2022). Knowledge, Attitude, Practice towards Breast Self - Examination and Associated Factors among Women in Gondar Town, Northwest



- Ethiopia, 2021 : A Community - Based Study. *BMC Women's Health*, 22(174), 1–14. <https://doi.org/10.1186/s12905-022-01764-4>
- Casmir, E. C. I., Anyalewechi, N. E., Onyeka, I. S. N., Agwu, A. C. O., & Regina, N. C. (2015). Knowledge and Practice of Breast Self-Examination among Female Undergraduates in South-Eastern Nigeria. *Health*, 07(09), 1134–1141. <https://doi.org/10.4236/health.2015.79129>
- Choumessi, T. A., Tchamba, T. G., Ngwamenter, G., & Atabonkeng, E. P. (2021). Breast Cancer and Breast Self-Examination Awareness among Undergraduate Students of the University of Bamenda, Cameroon. *International Journal of Community Medicine and Public Health*, 8(2), 581–588.
- DeSantis, C. E., Ma, J., Gaudet, M. M., Newman, L. A., Miller, K. D., Sauer, A. G., Jemal, A., Siegel, R. L., & Miller, K. D. (2019). Breast Cancer Statistics, 2019. *CA Cancer Journal for Clinicians*, 0, 1–14. <https://doi.org/10.3322/caac.21583>
- Hanson, V. F., El-Kader, R. G. A., & Ilesanmi, R. E. (2019). Practice and Barriers of Breast Self-Examination Among Women in a Rural Community in South Western, Nigeria. *International Journal of Studies in Nursing*, 4(3), 46. <https://doi.org/10.20849/ijns.v4i3.588>
- Ibitoye, O. F., & Thupayegale-tshwenegae, G. (2019). *The Impact of Education on Knowledge Attitude and Practice of Breast Self-Examination Among Adolescents Girls at the Fiwasaye*.
- Iwuoha, E. C., Ekeleme, N. C., & Uche, C. L. (2021). Knowledge, Attitude and Practice of Breast Self-Examination (BSE) among Women in an Urban City in Abia State, Nigeria. *Asian Journal of Medicine and Health*, 18(12), 17–25. <https://doi.org/10.9734/ajmah/2020/v18i1230281>
- John, R. (2018). Global cancer facts and figures 4th edition-special section, the obesity epidemic. *American Cancer Society*, 76, 1–73.
- Karim, N. K. A., Sooi, L. K., & Mangantig, E. (2019). Factors Associated with Breast Self-Examination Practice and Mammogram Breast Density among Malaysian Women. *Malaysian Journal of Medicine and Health Sciences*, 15(SUPP9), 96–101.
- Lafiaji-Okuneye, B. B., Taiwo, A. B., & Modupeola, S. F. (2022). Predictors of Breast Self Examination Among Female Undergraduates in Lagos State, Nigeria. *European Journal of Physical Education and Sport Science*, 7(6), 46–57. <https://doi.org/10.46827/ejpe.v7i6.4128>
- Madubogwu, C. I., Madubogwu, N. U., & Azuiké, E. C. (2021). Practice of Breast Self-Examination among Female Students of Chukwuemeka Odumegwu Ojukwu University, Awka. *Journal of Health Science Research*, 6(2), 10–18. <https://doi.org/10.7324/jhsr.2021.622>
- Oginni, M. O., Popoola, E. O., Irinoye, O. O., & Olaogun, A. O. (2014). Assessment of the Knowledge and Practice of Breast Self Examination among Female Cleaners in Obafemi Awolowo University Ile Ife, Nigeria. In *International Journal of Caring Sciences* (Vol. 7, Issue 1). www.internationaljournalofcaringsciences.org
- Ogun, M. (2019). Educational Intervention on Breast Self-Examination among Senior Secondary School Girls in Ibadan North East Area of Oyo State , Nigeria Research methodology. *Texila International Journal of Public Health*, 7(4), 1–17. <https://doi.org/10.21522/TIJPH.2013.07.04.Art002>
- Olajide, T. E., Amiewalam, D., Ojo, E. A., Wennie, J. S., & Leslie, T. A. (2021). Assessment of Knowledge, Attitude and Perception on Breast Self-Examination Practice among Females attending Out-patient Clinic in Babcock University. *LAUTECH Journal of*



- Nursing*, 9, 106–111.
- Olaogun, J. G., Emmanuel, E. E., Dada, S. A., Odesanmi, O. M., & Adesua, O. A. (2017). *The prevalence of practicing breast self-examination and knowledge of breast cancer disease among women attending secondary health facility*. 4(10), 3211–3217.
- Ossai, E. N., Azuogu, B. N., Ogaranya, I. O., Ogenyi, A. I., Enemor, D. O., & Nwafor, M. A. (2019). Predictors of Practice of Breast Self-examination: A Study among Female Undergraduates of Ebonyi State University, Abakaliki, Nigeria. *Niger Journal of Clinical Practice*, 22, 361–369.
- 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). <https://doi.org/10.1186/S12905-021-01466-3>
- Salem, M. A. A., Shazly, H. A. Al, Ibrahim, R. A., Kasemy, Z. A., & Abd El-Roaf, Shaimaa, Y. (2020). Knowledge, Attitude and Practice of breast self-examination among women attending primary health care facility, Menoufia. *Menoufia Medical Journal*, 33, 44–49. <https://doi.org/10.4103/mmj.mmj>
- Sani, M. A., & Yau, L. S. (2018). Relationship between knowledge and practice of breast self-examination among female workers in Sokoto, Nigeria. *Obstetrics & Gynecology International Journal*, 9(3). <https://doi.org/10.15406/OGIJ.2018.09.00323>
- Seifu, W., & Mekonen, L. (2021). Breast self-examination practice among women in Africa: a systematic review and Meta-analysis. In *Archives of Public Health* (Vol. 79, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s13690-021-00671-8>
- Sharma, R. (2021). Breast cancer burden in Africa: Evidence from GLOBOCAN 2018. *Journal of Public Health (United Kingdom)*, 43(4), 763–771. <https://doi.org/10.1093/PUBMED/FDAA099>
- Tobin, E. A., & Okeowo, P. O. (2014). Breast self examination among secondary school teachers in South-South, Nigeria: A survey of perception and practice. *Journal of Public Health and Epidemiology*, 6(5), 169–173. <https://doi.org/10.5897/jphe2014.0635>
- Tuyen, D. Q., Dung, T. V., Dong, H. Van, Kien, T. T., & Huong, T. T. (2019). Breast Self-Examination: Knowledge and Practice Among Female Textile Workers in Vietnam. *Cancer Control*, 26(1), 1–7. <https://doi.org/10.1177/1073274819862788>
- Udeze, C. N., Ezenwa, M. O., & Abamara, N. C. (2020). Effect of cancer education on the practice of breast self-examination among adult women in Nigeria. *Cogent Psychology*, 7(1). <https://doi.org/10.1080/23311908.2020.1823616>
- Usman, I. N., Olanrewaju, S. O., & Usman, S. O. (2020). Breast Self-Examination Practice Among Female Secondary School Students In Osogbo, Western Nigeria. *European Journal of Medical and Health Sciences*, 2(2), 1–7. <https://doi.org/10.24018/ejmed.2020.2.2.173>
- Yakubu, A. A., Gadanya, M. A., & Sheshe, A. A. (2014). Knowledge, Attitude and Practice of Breast Self-Examination among Female Nurses in Aminu Kano Teaching Hospital, Kano, Nigeria. *Nigeria Journal of Basic and Clinical Sciences*, 11(2), 11–14. <https://doi.org/10.4103/0331-8540.140344>
- Ziuo, F. M., Twoier, A. A., Huria, T. R., & El-Khewisky, S. F. (2018). Low Awareness about Breast Self-examination and Risk Factors of Breast Cancer in Benghazi, Libya. *Ibnosina Journal of Medicine and Biomedical Sciences*, 10, 54–59. <https://doi.org/10.4103/ijmbs.ijmbs>