

Awareness and Practice of Breast Self Examination among Women in Different African Countries: A 10-Year Review of Literature

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Abstract

Breast self examination (BSE) is an important screening technique in detecting breast abnormalities. This procedure enables women become familiar with their breasts, thus making it easier for them to detect any changes that may occur. Routine performance of BSE is recommended for females above 20 years. This review of literature was conducted to assess the awareness and practice of BSE among women in different countries in Africa. A total of 28 out of 80 articles were reviewed from 15 African countries based on relevance. Review identification was performed through the search of Google Scholar and PubMed/MEDLINE/PubMed Central databases. Search terms used were “BSE,” “awareness,” “practice,” and “Africa.” Reference lists of identified studies were also used to find more studies. Majority of the reviewed studies showed adequate awareness, mainly from the media, but poor practice of BSE among women in various countries in Africa. A major barrier identified was inadequate knowledge of BSE technique. Although awareness of BSE was relatively high in many of the reviewed studies, the practice was low. Educational intervention program should be carried out among women in various African countries, not only to raise awareness but also to educate on the skills required to carry out BSE effectively.

Keywords: Africa, awareness, breast self examination, females, practice

INTRODUCTION

Breast cancer is currently the most common cancer among women worldwide and the second most common cancer among both sexes, making up 12.3% of all cancers (excluding nonmelanoma skin cancer) and 23% of all female cancers.¹ This shows an upward trend, as it was reported to make up 10.9% of all cancers in 2008.² Although breast cancer is thought to be a disease of the developed world, nearly 50% of breast cancer cases and 58% of deaths occur in less-developed countries.² Change in lifestyle has led to increasing incidence of breast cancer in Africa.³ The incidence of breast cancer in Africa in 2018 ranged from 27.9/100,000 in Central Africa to 48.9/100,000 in Northern Africa, with a corresponding mortality of 15.8%–18.4%, respectively.⁴

The knowledge and health-seeking attitude for breast cancer management are low in Africa,⁵ such that majority of the affected patients present late to the hospital when little or nothing can be done in terms of treatment. It has been reported that most patients with breast cancer in developing countries

present for the first time at advanced stages (III and IV).⁶ This is possibly due to lack of early detection of the disease. The diagnosis of breast cancer during the early stage has been linked to a reduction in mortality, morbidity, and cost of management of the illness.⁷ This indicates a need for increased community awareness of methods for the early detection of the disease. Early detection is usually done through screening, and screening methods include breast self examination (BSE), clinical breast examination (CBE), and mammography.⁸ Due to fewer number of experts and lack of advanced diagnostic techniques in developing countries, promoting regular BSE has been said to be the feasible screening option for early detection of breast

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cancer.⁹ However, its practice is dependent on knowledge and attitude toward breast cancer and BSE among women.¹⁰

BSE involves visualization and palpation of the breast by oneself for lumps, shape, texture, size, and contour. The purpose of BSE is for a woman to be able to identify changes in the breasts should they exist. It is carried out once monthly between day 7 and 10 of the menstrual cycle.¹¹ BSE has a positive effect on the early detection of breast cancer.⁷ About 80% of breast cancers not detected by mammography are detected by women themselves, though most often not as a part of a systematic regular self-examination, but as a part of daily activities such as showering and dressing.¹²

BSE is regarded as a valuable screening tool for breast cancer when used as an adjunct to CBE and mammography.¹³

Furthermore, it can be utilized in enhancing breast cancer awareness among women.⁸ BSE is recommended because it is inexpensive, private, painless, easy, and safe and requires no special equipment.¹⁴ It has also been shown to improve breast health awareness and thus potentially allow for the early detection of breast anomalies.^{15,16} While screening programs with mammography have been effective in high-income countries, research has shown that other strategies such as BSE are equally important in reducing mortality from breast cancer, particularly in low-resource settings.¹⁷

A study carried out among female secondary school teachers in Ilorin, Nigeria, West Africa found that awareness of BSE was high (95.6%), though its practice was relatively low (54.8%).¹⁸ Studies conducted in other regions of the world

Table 1a: Characteristics of retrieved articles from Nigeria, West Africa

Serial number, author, years, country	Objectives of the study	Methodology	Summary of results
1. Gwarzo <i>et al.</i> , 2009, Nigeria ²¹	To assess the knowledge and practice of BSE among female undergraduate students in Ahmadu Bello University, Zaria	Descriptive cross-sectional study among 221 female university students selected using systematic random sampling method	Level of awareness was 87.7%, while only 19.0% reported examining their breast monthly. Practice of BSE was significantly associated with family history of breast cancer ($P < 0.05$)
2. Agboola <i>et al.</i> , 2009, Nigeria ²²	To assess KAP of BSE among female health workers in Sagamu	Cross-sectional survey among 115 female health professionals of Olabisi Onabanjo University Teaching Hospital, Sagamu	A total of 81.8% of doctors, 56.5% of laboratory scientists, and 41.4% of nurses knew the correct timing and frequency for performance of BSE. Monthly practice of BSE was 30%, 68.2%, and 78.3% among nurses, doctors, and laboratory scientists, respectively
3. Bellgam and Buowari 2012, Nigeria ²³	To inquire about the practice of BSE among women in Rivers State, Nigeria	A cross-sectional study was conducted in three local government areas of River State, using self-administered questionnaire for 691 respondents	Level of awareness of BSE was 39.65%, while 28.94% practiced it. Awareness and practice of BSE were associated with level of education of respondents
4. Yakubu <i>et al.</i> , 2014, Nigeria ²⁴	To investigate the KAP of BSE among female nurses in Aminu Kano Teaching Hospital, Kano	Descriptive cross-sectional study among 102 female nurses selected using simple random sampling method	Awareness and positive attitude toward BSE were 100%. Majority 91.2% reported practicing BSE. However, only 41.2% practiced BSE monthly. There was an association between working in a surgical ward and the practice of BSE
5. Tobin and Okeowo 2014, Nigeria ²⁵	To assess the practice and perception toward BSE among secondary school teachers in Benin City	A cross-sectional study was conducted among 300 female secondary school teachers in a selected LGA in Benin City	All 100% had heard of BSE, while 79.3% had ever practiced it out of which only 19% practiced it monthly. Ignorance about the usefulness of BSE was identified as a barrier to the practice of BSE
6. Amoran and Toyobo 2015, Nigeria ²⁶	To examine the factors influencing BSE awareness and practice among women in Ogun State	Cross-sectional study of 495 women selected through multistage sampling method	About 58.2% had awareness of BSE, while 24.4% had ever performed it, and only 5.3% carried it out on monthly basis. Barriers to BSE were perception of not being at risk and lack of knowledge of how to perform BSE (47.6%)
7. Ogunbode <i>et al.</i> , 2015, Nigeria ²⁷	To determine the prevalence and factors determining the practice of BSE in Nigerian women attending a tertiary outpatient clinic	Descriptive baseline cross-sectional study among 140 Nigerian women attending a tertiary outpatient clinic	Overall, self-reported prevalence of BSE practice was 62.1%, out of which only 12.6% performed it monthly. The highest prevalence was among older women, 76.2%; married women, 65.6%; and women with tertiary education, 68.9%; civil servants, 78.1%; women with previous history of breast disease, 68.2%; and women with family history of breast disease, 63.6%

BSE – Breast self examination; KAP – Knowledge, attitude, and practice; LGA – Local government area

have also shown poor attitude toward BSE and poor practice, despite good knowledge.^{19,20}

With the increasing morbidity and mortality from breast cancer in Africa, there is a need to explore the awareness and practice of BSE in different countries in Africa. The objective of this literature review was to assess the awareness and practice of BSE in African countries within a 10-year period.

METHODOLOGY

A comprehensive and systematic search was carried out using PubMed/MEDLINE/PubMed Central, and Google Scholar. Search terms were “BSE” AND “awareness” AND “practice” AND “Africa” and African countries such as Nigeria and other countries. Reference lists of included studies were also scanned to identify additional relevant articles. For inclusion criteria, the reviewed articles had to be full paper articles published in the English language from January 2009 to January 2019, directly focusing on awareness and practice of BSE. Articles from all parts of Africa were included in the review. A total of 80 articles on BSE among women in African countries were initially assessed. Thirty articles did not have

direct relevance to the focus of the review and were removed. Twenty-two articles were also subsequently excluded on grounds of duplication of information from the same countries or unavailability of the full texts. Twenty-eight full-text articles from 15 African countries were finally reviewed [Figure 1].

RESULTS

Based on the inclusion criteria, a total of 28 descriptive surveys were retrieved, and the data extracted are summarized in Tables 1a–d. The review covered 15 countries in West, Central, East, North, and South Africa. A total of 7 (25.0%) of the studies were conducted in Nigeria, 3 (10.7%) in Ethiopia, Ghana, and Cameroon, and 2 (7.2%) in Egypt, respectively. Ten other studies (35.7%) were also included in the review from each of the following countries: South Africa, Botswana, Uganda, Tanzania, Senegal, Eritrea, Rwanda, Sudan, Morocco, and Zambia. Majority of the reviewed studies showed adequate awareness, mainly from the media, but poor practice of BSE among women in various countries in Africa. A major barrier identified was inadequate knowledge of BSE technique.

Table 1b: Characteristics of retrieved articles from other West/Central African Countries

Serial number, author, years, country	Objectives of the study	Methodology	Summary of results
8. Gueye <i>et al.</i> , 2009, Senegal ²⁸	To evaluate the knowledge and the practice of the BSE by female population in Senegal	A cross-sectional study where 300 patients coming for a medical or surgical consultation were interviewed	Only 42.7% had knowledge about BSE and 29% practiced it regularly. This knowledge and practice were significantly influenced by educational level and income
9. Opoku <i>et al.</i> , 2012, Ghana ³	To determine the population-based rates of reported breast cancer screening practices among Ghanaian women in Accra and Sunyani	A cross-sectional study using both quantitative method on 474 women and qualitative method on 25 respondents	Poor knowledge of breast cancer and screening methods. BSE practice among the women was 32%. Practice was influenced by level of education
10. Kudzawu <i>et al.</i> , 2016, Ghana ²⁹	To determine the knowledge and practices of BSE among market women at Makola shopping mall, Accra, Ghana	A cross-sectional study among 170 female traders. Eight in-depth interviews were also conducted	Awareness of BSE was 93%, but only 27% practiced BSE as recommended due to lack of knowledge of basic skills to do BSE
11. Fondjo <i>et al.</i> , 2018, Ghana ³⁰	To evaluate and compare knowledge, attitudes, and practice of BSE among female secondary and tertiary school students in Ghana	Descriptive cross-sectional study among 1036 students in a secondary and tertiary school	Awareness of BSE was 90.9%, only 54.5% had good knowledge of BSE. Only 8.1% practiced BSE monthly
12. Suh <i>et al.</i> , 2012, Cameroon ¹⁵	To describe Cameroonian women's knowledge of BSE and assess their impression on the practice of BSE	A cross-sectional survey was conducted in a volunteer sample of 120 consenting women in Buea, Cameroon	Awareness level about BSE was 74.1%. Only 36.7% recognized breast examination as a breast cancer prevention method, while 59.2% claimed to know how to perform BSE with 35% reportedly practicing it monthly
13. Nde <i>et al.</i> , 2015, Cameroon ¹⁶	To evaluate the KAP of BSE among female undergraduates in Buea, Cameroon	Cross-sectional study among 166 female university students	Despite awareness of BSE of 73.5%, only 9.0% had knowledge on how to perform BSE, while 3.0% performed it regularly. Lack of knowledge about BSE was mentioned as the main reason for not practicing it
14. Sama <i>et al.</i> , 2017, Cameroon ¹⁴	To determine the knowledge and practice of BSE among teachers in a Cameroon school	Cross-sectional study among 345 students in a teachers college	A total of 143 (41.5%) had heard about BSE and 55 (15.9%) ever practiced it

BSE – Breast self-examination; KAP – Knowledge, attitude, and practice

Table 1c: Characteristics of retrieved articles from East African Countries

Serial number, author, years, country	Objectives of the study	Methodology	Summary of results
15. Morse <i>et al.</i> , 2014, Tanzania ³¹	To assess breast cancer knowledge, screening practices, and educational preferences among outpatients at Tanzanian Government-supported hospitals	A convenience sample of 225 adult women presenting for outpatient care at reproductive and child health clinics of three government-subsidized hospitals	Awareness among respondents was 56%. Of these, 25.4% practiced BSE regularly, 34.1% practiced it occasionally, and 40.5% never practiced it
16. Segni <i>et al.</i> , 2016, Ethiopia ¹¹	To assess the KAP of BSE amongst female health science students of Adama Science and Technology University	A cross-sectional study on 368 study respondents using self-administered questionnaires	Good knowledge score about BSE was exhibited by 8.7% of respondents, while 39.4% had ever done BSE, with only 9.4% practicing it monthly
17. Birhane <i>et al.</i> , 2017, Ethiopia ³²	To assess the practice and associated factors of BSE among female Debre Berhan University students in Ethiopia	Cross-sectional study among 420 university students	Only 64.0% of respondents were aware of BSE, while 28.3% carried out BSE. Lack of knowledge on how to perform BSE was identified as the main reason for poor practice
18. Abay <i>et al.</i> , 2018, Ethiopia ³³	To assess BSE examination practice and associated factors among women aged 20-70 years attending public health institution of Adwa town, North Ethiopia	Facility-based cross-sectional study among 400 women attending health facilities of Adwa town, North Ethiopia	Only 44.5% had heard about BSE, while 6.5% of the respondents had ever done BSE and 6.25% did it regularly. Having perceived confidence to do BSE and having perceived susceptibility to breast cancer were significantly associated with practice of BSE
19. Kifle <i>et al.</i> , 2016, Eritrea ³⁴	To assess the level of knowledge and practice of BSE among female college students in Eritrea	A cross-sectional study was conducted on 380 respondents using self-administered questionnaires	Only 48.9% of the students had awareness about BSE and 11.7% practiced it. The main reasons for not practicing were lack of knowledge (34%), the belief that there was no problem with their breast (26.4%), and they did not think they should be examined (12.5%)
20. Ndikubwimana <i>et al.</i> , 2016, Rwanda ³⁵	To assess the level of early sensitization and education of adolescent high school girls in Rwanda about breast cancer and BSE	A prospective cross-sectional study on 239 girls aged 17-20 years	Self-inspection of the breast was carried out by 52% of the students, while 24% ever palpated their breasts
21. Obaikol <i>et al.</i> , 2010, Uganda ³⁶	To explore the practice of BSE among female university students in a sub-Saharan university	A cross-sectional descriptive study on 320 female students	Out of the 320 students, 81.5% were aware of BSE, 30% had ever performed BSE, 14% performed it regularly, and 8% knew the correct monthly timing
22. Ramson 2017, Zambia ³⁷	To determine the KAP of BSE among women in Roan township in Luanshya, Zambia	Cross-sectional study which enrolled 351 women. Data were collected using self-administered questionnaire	Only 41.6% had awareness about BSE. Main source of information was television (34%). Only 28.2% actually practiced BSE of which only 12.0% did it correctly

BSE – Breast self-examination; KAP – Knowledge, attitude and practice

DISCUSSION

Prevention remains a fundamental factor in the fight against breast cancer. Screening and early detection play important roles in the treatment and prognosis of breast cancer. BSE is a screening method that can be performed by women themselves. It is inexpensive and accessible and is, therefore, a good screening method for resource-poor settings, where mammography is not readily available.^{14,44}

This review showed that though many of the studies reported a relatively high level of awareness of BSE in different countries in Africa, adequate practice was generally low. The review cut

across different occupational groups in different countries in Africa.

Several studies assessed the awareness and practice of BSE among female students. Awareness was reported to be high in Nigeria, Ghana, Uganda, and Sudan.^{21,30,36,38} In contrast to this, reviewed articles in Ethiopia and Eritrea showed relatively lower levels of awareness, as only 64.0% and 48.9% of students were aware of BSE, respectively.^{32,34}

Practice levels of BSE across countries were reported to be generally poor. The highest level of regular BSE practice among students, (66.7%) was reported among medical students

Table 1d: Characteristics of retrieved articles from North and South African Countries

Serial number, author, years, country	Objectives of the study	Methodology	Summary of results
23. Idris <i>et al.</i> , 2013, Sudan ³⁸	To determine the knowledge and practice of Sudanese medical students regarding BSE	A descriptive cross-sectional study was done on 200 students aged 18-29 years	Awareness of BSE was 86%, with mass media being the major source of information, and health workers being the least source of information. Two-thirds of the respondents reported performing BSE
24. Boulos and Ghali 2013, Egypt ³⁹	To identify knowledge and practice of BSE among female students at Ain Shams University, Egypt	A descriptive cross-sectional study among 543 consenting female students using a self-administered questionnaire	Only 8.8% had knowledge of the correct timing for BSE and 1.3% reported performing it monthly. The most common reason for poor practice was lack of knowledge on how to perform it (47.7%) and lack of interest (45%)
25. Bayumi 2016, Egypt ⁴⁰	To identify the knowledge about BSE and assess the practice of BSE among female college students in Assuit, Egypt	A descriptive study conducted at the university on 240 students	Awareness level of the students on BSE was 87.9%. The main source of information was the media as reported by 36.7% of the students. Furthermore, 57.9% of them knew the right way to carry out BSE and 15.8% practiced BSE monthly
26. Conde <i>et al.</i> , 2018, Morocco ⁴¹	To study the practice of BSE in women in Morocco	A cross-sectional observational study that was conducted in July 2011 on 1444 women based on early detection programs in basic health centers	Information on BSE was mainly through the media (28%), and 56.9% of the respondents practiced BSE. Practice was associated with level of education
27. Ramathuba <i>et al.</i> , 2015, South Africa ⁴²	To assess knowledge, attitudes, and breast cancer screening practice among women aged 30-65 years residing in a rural south African community	A descriptive cross-sectional study on 150 participants	Although 37.5% knew the correct timing to perform BSE, only 3 (2.0%) knew that BSE was a breast cancer screening method. Eight (6.3%) had practiced one of the breast cancer screening methods during their lifetime
28. Tieng'O <i>et al.</i> , 2011, Botswana ⁴³	To assess the KAP of breast cancer examination among women attending a health facility in Gaborone	A cross-sectional study carried out on 375 women attending a health facility in Botswana	Majority, (85.3%) knew that BSE was a method for early detection of breast cancer. Overall, knowledge of BSE was 74.7% with 37% practicing monthly. The most common reason given by those who did not practice was lack of knowledge on how to do it

BSE – Breast self-examination; KAP – Knowledge, attitude, and practice

in Sudan,³⁸ with the lowest levels, (1.3%) being reported among female university students in Egypt.³⁹ Stressing the benefits of BSE may help in improving the practice of this simple procedure.

Health workers in some of the reviewed articles had adequate knowledge of BSE. Agboola *et al.* reported that more doctors had correct knowledge of BSE, followed by medical laboratory scientists and then nurses. However, only a third of the nurses practiced BSE, while more laboratory scientists (78.3%) practiced BSE than doctors (68.2%).²² Another study reported that all nurses in Aminu Kano University Teaching Hospital, Nigeria, were aware of BSE; however, only about two-fifths of them practiced BSE regularly.²⁴ Female health workers, especially nurses who have longer contact time with clients, in addition to carrying out BSE on themselves, are expected to educate and encourage clients on practice of BSE.

The practice of BSE in the general populace varied among women in different countries. A study in Ethiopia reported a very low level of practice among the general populace, with only 6.25% doing BSE regularly,³³ while in Cameroon, another study reported that 35% of respondents regularly practiced BSE though 74.1% had heard about it.¹⁵ In Nigeria, a study

reported a 39.65% awareness of BSE, with 28.94% practice among this category of women.²³ This was low compared to the level of awareness among students and health workers in other studies in the same country.^{21,22} In South Africa, only 2% of the studied rural women recognized BSE as a screening method for breast cancer, even though more than a third knew how to do BSE correctly.⁴²

The highest levels of awareness of BSE (100%) among the reviewed articles were reported among nurses and teachers in Nigeria,^{24,25} while the highest monthly practice level (78.3%) was reported in Nigeria among female laboratory scientists.²¹ Similarly, the lowest level of BSE awareness (39.65%) was reported among women in Rivers State, Nigeria,²³ while the lowest level of monthly practice (1.3%) was reported among female university students in Egypt.³⁹

The media was reported to be the major source of information on BSE in several of the reviewed studies.^{37,38,40,41} Some reviewed studies reported that increasing age, tertiary education, previous breast disease, and family history of breast disease were associated with higher knowledge and practice of BSE.^{26,27,33} This suggests that having perceived susceptibility to breast disease increased the likelihood of practice of BSE.



Figure 1: Flow chart showing article extraction method

The most common barrier to practice of BSE reported by many of the studies in this review was lack of knowledge of BSE technique.^{16,26,29,32,34} Efforts must be put in place to overcome this barrier through intensive health education programs, preferably involving the media.

CONCLUSION

The overall picture from this literature review shows that the level of awareness about BSE among women from studies in different African countries is relatively high; however, the level of practice is low, even among health workers in some of the studies. Since a major reason stated for low practice was lack of knowledge and skill on how to perform BSE, in addition to awareness programs, educational interventions which teach the step-by-step practice of BSE is necessary to increase the practice of BSE in Africa.

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Conflicts of interest

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