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Effectiveness of Conventional and Electronic Health Educational Campaign on Breast Self-Examination Practice Among Adult Women in Oyo State

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Abstracts: *This study investigated effectiveness of conventional and electronic health educational campaign on Breast self-examination practice among adult women in Oyo State. This study adopted quasi-experimental design, using two interventional approach: convectional teaching medium and Electronic teaching medium. Multi-stage sampling techniques was employed in the selection process, where two rural and urban communities were selected across three senatorial districts in Oyo State, to give six urban and rural areas. Each educational campaign group had 213 participants, therefore the two groups in total had 426 participants. Validated questionnaire was adopted for data collection. Data were analyzed using descriptive statistics. Hypotheses were tested using paired and independent t-test. Statistical significance was set at $p < 0.05$. Hypotheses tested revealed that, there is a significant difference in conventional and electronic group* knowledge *($p < 0.05$),* attitude *($p < 0.05$);* Self-efficacy *($p< 0.05$) and* practice *($p< 0.05$)* respectively. *This study concluded that, participants from convectional groups had better knowledge, attitude, Self-efficacy and practice of BSE compare to Electronic group.*

Keyword: effectiveness, conventional, electronic, campaigns, practice, breast self-examination

INTRODUCTION

Regular examination of the breasts among women, help timely detection of any changes that may occur (Jemebere, 2019). This is in line with the facts that, recent global initiatives pioritised need

for improved and affordable preventive strategies, rather than wait until complications before taking steps. In view of the fact that, achieving the sustainable development goals (SDGs) is a priority in developing countries like Nigeria, which have not fared well in the achievement of previous global agenda, like millennium development goal on health, the need to begin to consider a change in strategy is imperative. This is because the effectiveness of the existing strategies is been questioned by increasing number of breast related diseases (Jumbo, 2019; Ashtarian et al., 2020). Since breast cancer which is preventable if women adhere to routine breast self-examination (BSE), is one of the most prominent diseases causing a significant number of mortalities in the globe (Ashtarian et al., 2018), it is therefore expedients that mode of campaign be re-examined to improve knowledge and practice of BSE. However, despite the fact that BSE is easy and cheap, the rate of practice have been said to be low and varies across developing countries (Ashtarian et al., 2020). According to Kıssal and Kartal, (2019), educators need to critically evaluate the effectiveness of breast cancer education and re-examine the content of any training for effectiveness. Since women can detect breast lump by examining the breast, it is important that they are adequately informed, to boost their self-efficacy in the practice of BSE for timely detection of any change in the breast tissue for early presentation. Disseminating adequate information using right strategy will adequately impart women towards observing and identifying symptoms before the disease starts to spread c. Breast self-examination (BSE) refers to an examination of human breast by self towards early detection of abnormalities in the tissue. Akram *et al.,* (2017) explained that, BSE involves inspecting the breasts with hands to source for lumps, cusps, changes in the skin and nipples of the breasts (Kıssal & Kartal, 2019).

The practice of breast self-examination has been reported to be low among Nigerian women (Hanson et al., 2019). The major reason for the low practice is attributed to lack of appropriate knowledge (Agbonifoh, 2016). However, it is heart-warming to note that, government bodies at various levels as well as non-governmental organization (NGO) have not relented on breast Cancer preventive measure campaign, where campaign prioritised. Educational intervention on BSE increases women's understanding about breast cancer. It also built their confidence to practice of BSE (Tuyen et al., 2019). This however calls for need to critically assess the efficacy of various health educational methods towards improving BSE practice. Okeke (2018) maintained that "media awareness campaigns should be seen as the cornerstone for health communication interventions." The study failed to include the educational strategies adopted. Also, Jumbo (2019), explained that, most efforts made to improve health behaviour of women towards achieving preventive practices of breast cancer come in form of campaigns, which serve as a mechanism through which messages are communicated by health experts through various media. Also, Pradhan et al., (2017) reported that some women perceived that breast self-examination is embarrassing, wrong and immoral.

From the fore going, it is evident that, several studies have been conducted on prevention of cancer of the breast, some of which critically investigate the breast-self examination (Akpanekpo, 2017; Abeje et al., 2019). However, most of these studies are descriptive in nature, which would not out rightly be effective for policy formulation. This is because descriptive studies are opinion and may

not necessarily reflect the true picture of individual actions. More so, recent studies conducted on breast self- examination are focused on knowledge, attitude and perception (Udoh et al. 2020; Asmare et al., 2022), without a critical review of strategies for information dissemination, which should be most appropriate for policy reform. Also, it is evident that, the above studies are either lopsided in choice of campaign strategies or variables under study. Yet, information about breast cancer is essential for early detection, diagnosis and treatment for better outcomes. Based on the above, the researcher considers it necessary to examine the impact of conventional and electronic educational- interventions on perceived self-efficacy and practice of breast self-examination among women in Oyo State.

LITERATURE/THEORETICAL UNDERPINNING

Breast self-examination is commonly conducted on a monthly frequency. Breast self-examination is commonly performed around the 7th to 10th day of the menstrual cycle, with the objective of detecting the early stages of breast tumours or cancer. The aforementioned study conducted by Wubareg and Liyew (2021) has demonstrated that this particular approach has a positive impact on treatment outcomes and prognosis. The process involves women undertaking a comprehensive assessment of their breasts, in which they evaluate for possible physical irregularities, such as discharge, breast enlargement, skin surface inflammation or indentation, and abnormalities in the nipples, among other signs. According to the World Health Organisation (2018), it is advised that women should contemplate including breast self-examination as a regular practise commencing at the age of 20. The dissemination of knowledge regarding the possible benefits of regular monthly breast self-examinations among women holds significant importance. The utilisation of breast self-examination is seen as a valuable and feasible option in rural regions where obtaining clinical breast examination (CBE) may provide difficulties. According to Dagne *et. al* (2019), the utilisation of this technology remains effective in facilitating the timely identification of breast cancer, so enabling prompt treatment measures that have the potential to prolong the lives of women and mitigate their distress. Breast Self-Examination, Clinical Breast Examination, and Mammography are universally endorsed as diagnostic modalities for the timely identification of breast cancer. Nevertheless, the limited availability of diagnostic resources, especially for women residing in low-resource and rural regions, underscores the importance of equipping women with breast self-examination (BSE) as a primary screening approach (Terfa *et. al*, 2020).

Hassan *et.al* (2017) have identified multiple instructional methods for teaching BSE that can be effectively conducted within a time span of 10-15 minutes. These tactics involve the utilisation of pamphlets, video tapes, slide tape programmes, videos, lectures, group discussions, and individualised breast education through demonstration. Conducting a sequential breast examination is a self-care practise that entails the utilisation of accurate and comprehensive information, a proactive and positive attitude towards effectively and consistently performing BSE, and the assessment of a woman's acquired skills through a demonstration. As stated by Aminisani *et. al* (2016), the efficacy of passive modalities, such as pamphlets and video

recordings, is comparatively less substantial when compared to the interactive approach of one-to-one instruction, which requires active involvement from the client through return demonstration.

The majority of individuals exhibit erroneous behaviours in relation to BSE. These behaviours include negligence, procrastination, indifference, lack of time, fear of discovering abnormalities, lack of confidence in their ability to perform BSE correctly, and anxiety. These reasons contribute to their failure to adhere to recommended BSE practices. Although there exists a considerable amount of knowledge and a generally positive attitude towards BSE, the training imparted to these students has been demonstrated to lack effectiveness (Ossai *et. al*, 2019). Ohaeri and Aderibigbe (2019) did a cross-sectional analysis to investigate the knowledge, attitude, and practice of BSE among women in Iran. The results indicated that a considerable percentage of Iranian women (n = 170; 65.1%) reported abstaining from doing BSE. The insufficient engagement observed can be attributed to a lack of information regarding the appropriate implementation of BSE. The observed low compliance can be ascribed to the opinion held by specific individuals that they are not susceptible to breast cancer (Ezema *et. al*, 2021). In a similar manner, Witte (2020) provided evidence indicating that women who owned an elevated perception and self-assurance regarding their competence to conduct BSE demonstrated a significantly higher propensity to consistently engage in BSE. Rivera-Franco *et. al* (2018) reported results that indicate a positive association between self-assurance and adherence to BSE among women of Mexican American descent. This study provides evidence in favour of the idea that the acceptance of BSE is influenced by both knowledge and confidence, as these factors are fundamental aspects of an individual's perception.

METHODOLOGY

This study adopted quasi-experimental research design. The need for this study was based on the fact that, the study is bent on investigating cause-effect relationship in a concomitant variation pattern. This study sample size was 426 and participants were selected using multi stage sampling techniques. This study adopted multistage sampling technique to select respondents across Oyo State. The study adopted a validated Breast Self-Examination Scale as described by Doshi et al., (2012). The scale consisted of five sections. The reliability of the questionnaire (BSEQ) was 0.8. Breast Self- Examination was measured by 5 parts questionnaires. (1) Socio-demographic Characteristics Questionnaire, (2) BSE Knowledge Scale, (3) BSE Attitude Scale, (4) BSE Perceived Self-Efficacy scale and (5) BSE Practice Scale. The aspect of the demographic characteristics was analysed using frequencies (f) and percentages as well as mean, aspect of descriptive statistics. Data related to research questions were also analysed using frequencies (f) and percentages as well as mean, aspect of descriptive statistics, chart was used to summarise the result for each variable.

RESULT/FINDINGS

Table 1: Demographic Characteristics of Respondents

Variable	Frequency (n=426) Convection (n=213)	Percentage (100%)

	Electronics (n=213)	
Age		
Below 20 years	31	7.3
20- 39 years	196	45.8
40- 59 years	139	32.8
60-79 years	58	13.6
80 years and above	2	.5
Marital status		
Single	57	13.4
Cohabiting	7	1.6
Married	328	77.0
Separated	34	8.0
Religion		
Christianity	216	50.7
Islam	200	46.9
African traditional religion	10	2.3
Educational attainment		
Non-formal education	80	18.8
Primary	86	20.2
Secondary	140	32.9
Tertiary	100	23.5
Informal education	20	4.7
Occupation		
Full house wife	40	9.4
Civil servant	47	11.0
Self employed	212	49.8
Health workers	52	12.2
Private company's employee	12	2.8
Others	63	14.8
Locations		
Urban	213	50.0
Rural	213	50.0
Monthly Income		
Below #10,000	49	11.5
#10,000- #30,000	289	67.8
#31, 000- #60,000	61	14.3
#61,000- #99,000	8	1.9
#100,000 and above	19	4.5

Table 1 above present results on demographic, on age, below a tenth (7.3%) were below 20 years, below half (45.8%) were 20-39 years, close to a third (32.8%) were 40-59 years, over a tenth (13.6%) were 60-79 and 0.5% were 80 years and above. On marital status, over a tenth (13.4%) were single, 1.6% were cohabiting, majority (77.0%) were married and below (8.0%) were separated. On religion, half (50.7%) practice Christianity, almost half (46.9%) practice Islam and just 2.3% practice any of the African traditional religion. On education attainment, almost a fifth (18.8%) had non-formal education, a fifth (20.2%) had primary education, almost a third (32.9%) had secondary education; below a quarter (23.5%) attended tertiary education and only 4.7% had Informal education. On occupation, almost a tenth (9.4%) were full house wife, over a tenth (11.0%) were civil servants, almost a half (49.8%) were self-employed and over a tenth (12.2%) were health workers, 2.8% were Private company's employee and 14.8% were into various occupation. On Location, both rural and urban were half (50.0%). On monthly income, over a tenth (11.5%) earn below #10,000, majority (67.8%) earn between #10,000- #30,000, over a tenth (14.3%) earn #31, 000- #60,000, 1.9% earned #61,000- #99,000 and 4.5% earned #100,000 and above.

Table 2: Paired Samples Test showing difference in knowledge on BSE between Conventional and Electronic Group

	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Convention	1.60	.491	9.536	212	.000
Electronic	1.20	.402			

Table 2 above presents paired samples test showing difference in knowledge on BSE between conventional and electronic groups. Results revealed that, there is a significant difference in the knowledge of conventional and electronic groups on breast self-examination (t_{212}= 9.536; p-value= .000). This is an indication that, there is a significant difference in the knowledge of conventional and electronic group on breast self-examination was upheld. This is also evident in the differences in the mean for convention (1.60) and electronic group (1.20). This implies that, respondents from convention group have high level of knowledge compared to those from electronic group.

Table 3 Paired Samples Test showing difference in Attitude towards BSE between Conventional and Electronic Groups

	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Convention	1.57	.497	12.121	212	.000
Electronic	1.09	.292			

Table 3 above presents paired samples test showing difference in attitude towards BSE between conventional and electronic groups. Results revealed that, there is a significant difference in attitude towards BSE of conventional and electronic group on breast self-examination (t_{212}= 12.121; p-value= .000). This is an indication that, there is a significant difference in attitude towards BSE of conventional and electronic group on breast self-examination was upheld. This is also evident in the differences in the mean for convention (1.57) and electronic group (1.09). This implies that, respondents from convention group have more positive attitude towards BSE compared to those from electronic group.

Table 4 Paired Samples Test showing difference in BSE Perceived Self-Efficacy between Conventional and Electronic Group

	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Convention	1.58	.495	4.693	212	.000
Electronics	1.37	.483			

Table 4 above presents paired samples test showing difference in perceived self-efficacy of BSE between conventional and electronic group. Results revealed that, there is a significant difference in the perceived self-efficacy of conventional and electronic group on breast self-examination (t_{212}= 4.693; p-value= .000). This is an indication that, there is a significant difference in the perceived self-efficacy of conventional and electronic group on breast self-examination was upheld. This is also evident in the differences in the mean for convention (1.58) and electronics group (1.37). This implies that, respondents from convention group have high level of perceived self-efficacy compare to those from electronic group.

Practice of BSE between Conventional and Electronic Groups

Table 5 Paired Samples Test showing difference in Practice of BSE between Conventional and Electronic Groups

	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Convention	1.50	.501	10.415	212	.000
Electronic	1.12	.328			

Table 5 above presents paired samples test showing difference in practice of BSE between conventional and electronic group. Results revealed that, there is a significant difference in the practice of BSE of conventional and electronic group on breast self-examination (t_{212}= 10.415; p-value= .000). This is an indication that, there is a significant difference in the practice of BSE of conventional and electronic group on breast self-examination was upheld. This is also evident in

the differences in the mean for convention (1.50) and electronic groups (1.12). This implies that, participants from conventional group have high practice of BSE compared to those from electronic group.

DISCUSSION

The study revealed that some respondents below 18 years old were at risk of breast cancer. This is due to the fact that, some 18 years or 19 years were found to have breast lump and other breast diseases. This result is at variance with Obaji et al., (2013) who found that breast cancer occurs in women from age 20 years and above. The probable reason for this is that, lifestyles are changing and have contributed to risk factors for breast cancers. Agbonifoh (2016) held that, lifestyles are major factors contributing to breast cancer. More findings revealed that, majority of the respondents are married, which could either facilitate or serve as a barrier to breast self-examination. In the context that, marriage brings more responsibility (as seen in the responses on occupation), which subsequently reduce the time they have to care for self and thereby could reduce practice of BSE. Obaji et al., (2013) found that, BSE is affected by responsibilities and occupation.

Education has been a major factor that promotes practice of BSE over time. Aside that education gives access to information; it also ensures understanding of the importance of preventive strategies. This study further revealed that, majority of the respondents were educated such as had primary education, secondary education and higher education. However, below a quarter of the respondents had tertiary education; this is an indicator that, only a few of the respondents would have prior knowledge of BSE, especially as English is our lingual franca and language policies have not been widely accepted across schools in Nigeria. This also brings to note that, method of information dissemination should be those supported by a population who are not much educated (like conventional methods). This result is against Jabeen et al., (2018) who found that, upon adjusting age, marital status, family history and education, group A (p=0.001) remained significant, while the level of education (p=0.116) became non-significant. In this part of the world several factors determine family type individual belongs. Some of these factors include, religion, background among others. This study revealed that, close to half of the participants belong to polygamy. This implies that, most of the participants are at risk of poor practice of BSE. Amannah and Ugwu (2018) affirmed that, major reason why women do not comply with BSE is due to lack of privacy which is one factor particular to those polygamists. This also explained the influence of large family size and higher number of children recorded in this study.

Finding revealed that, there is a significant difference in the knowledge of conventional and electronic groups on breast self-examination. Ebirim et al., (2015) found that, there is a statistically significant relationship between knowledge of risk factors for breast cancer and practice of BSE ($\chi 2 = 31.17$, $P < 0.001$), source of information on BSE and practice of BSE ($\chi 2 = 86.75$, $P < 0.001$) and the age of the respondents and practice of BSE ($\chi 2 = 75.94$, $P < 0.001$). This implies that, knowledge of respondents on BSE between conventional and electronic groups differs. This corroborates with the previous results which show that, knowledge of respondents from

conventional group is better compared to those from electronic group. The probable reason to this is that, the intervention was conducted using code mixing and interpreted in native dialects across the selected areas. Mousavi et al., (2018) discovered that instructors have a helpless act of BSE, both in strategy and timing regularly in the light of a reasonable information on cancer of the breast. Also, Woiloro et al., (2020) found that, main source of information on breast cancer and BSE were media.The plausible reason to this is that, the electronic intervention was conducted using code-mixing, which seem more favourable to respondents from urban areas.

Finding revealed that, there is a significant difference in the attitude of conventional and electronic groups towards breast self-examination. This implies that, attitude of respondents toward BSE between conventional and electronic group differs, Ibrahim et al., (2016) discovered. There was a statistically significant difference between pre and post- educational program. This corroborates with the previous results which show that, attitude of respondents from convectional group is better compared to those from electronic group. Amannah and Ugwu (2018) found that, majority of women are yet to imbibe the habit of engaging in early detection measures. The probable reason for this is that, the attitude does not really differ when considered across locations. There was an evident in the results presented in table 4.9 where only slight above half had good attitude towards BSE and very few have good attitude among electronic group.

More results revealed that, there is a significant difference in the perceived self-efficacy of conventional and electronic groups towards breast self-examination. This implies that, perceived self-efficacy of respondents toward BSE between conventional and electronic groups differs. This corroborates the previous results which show that perceived self-efficacy of respondents from conventional group is better compared to those from electronic group. The probable reason to this is that, the perceived self-efficacy do not really differ when considered across locations. This was evident in the results presented in table 4.10 where only slight above half had good attitude towards BSE and very few have good perceived self-efficacy among electronic group. This is in line with Ezema et al., (2021) who found that, women with a moderate level of Breast Cancer (BCa) fear were 0.56 times less likely to use mammogram than women with a low level of BCa fear.

Findings revealed that, there is a significant difference in the practice of BSE among conventional and electronic group. This implies that, the practice of BSE between conventional and electronic group differs. This corroborates the previous results which show that, practice of BSE from conventional group is better compared with those from electronic group. Mousavi et al., (2018) found that, 52% of women before did Breast Self-Examination and had poor knowledge on breast cancer. Lack of knowledge on how to perform BSE was cited as the main reason for not practicing BSE. Kalayu et al (2017) also found that, few of the participants (28.3%) had performed BSE before. Also Boafo and Tetteh (2019) found that about a quarter (23.4%) of their participants performed BSE at least once every month, despite 75.3% believing that checking the breast every month helps in early detection of breast cancer.

CONCLUSION

The consistent rise in global prevalence of cancer of the breast, is more evident in developing nations like Nigeria. Therefore, there is a need to ensure appropriate preventive measure is put in place such as embracing practices capable of promoting timely detection. Among all screening techniques available for early detection, Breast Self-Examination (BSE) is the most affordable in Nigeria. This study has revealed how various methods of information dissemination affect practice of BSE among women subjected to different educational campaign medium. This is an indication that there is need for review of existing programme designed to ensure dissemination of appropriate health information on prevention of breast cancer in Nigeria. This study concluded that, adult women from convectional groups had better knowledge, attitude, self-efficacy and practice of BSE compare to those from electronic group. This invariably shows that, the method of health educational campaign on Breast self-examination practice need to be improved upon. Also policy makers should ensure the creation of more breast imaging units and it would be necessary to include screening BSE in the National Health Insurance Scheme.

Implication to Research and Practice

This study highlighted the need for healtworkers to implement measures that would significantly promote strategic transition from electronic health educational campaign to conventional health educational campaign, especially with regards to breast self-examination towards prevention of breast cancer morbidity and mortality. Based on the findings of the study, the conventional method of information dissemination is mostly preferred and more effective to increase knowledge, improve attitude, enhance self-efficacy and promote good practices of breast self-examination among women. The sudden adoption of electronic health educational campaign may not be well effective, taking into consideration the literacy level of women, especially those from rural settings coupled with the level technological application. Therefore, nursing body in Nigeria should be able advise the government towards regulating medium of information dissemination and strategic transition from electronic to convection, especially among other allied health workers like community health workers, village health workers and health volunteers, since they are closer to the masses in the rural areas. Based on the findings which show higher knowledge within the conventional group and especially in the rural areas, nurses posted to these areas should not do away with the use of local mobilization and communication methods.

Future Research

There is need for downward review of age used in previous research to cater for contributions of intending factors such as lifestyle or environmental factors. Therefore recent research in the field of health science should endeavour to do downwards review of minimum age range of participants used in their study.

REFERENCES

Abeje, S., Seme, A., and Tibelt, A. (2019). Factors associated with breast cancer screening awareness and practices of women in Addis Ababa. *Ethiopia British Medical Centre Women's Health*.19(1):1–8.

Agbonifoh, J. A. (2016). Breast Self-examination practice among female students in a tertiary institution. *Journal of Education & Practice, 7*(120)

Akpanekpo, E. I. (2017) Knowledge, attitude and practice of breast self-examination (BSE) among female undergraduates in the University of Uyo, Southern Nigeria. *Environmental Journal of Public Health*. 2:6–11.

Akram, Q. A., Naseer, A. and Hussain, S. (2017). *Assas-Band*, an Affix-Exception-List Based Urdu Stemmer. Proceedings of the 7th Workshop on Asian Language Resources, ACL-IJCNLP, pages 40–47, Suntec, Singapore, 6-7.

Amannah, P. I. and Ugwu, C. (2018). Evaluation of women attitude to breast cancer campaign: A study of Akwa Residents. *IMSU Journal of Communication Studies*, 2(1) 35-55

Aminisani, N., Fattahpour, R. Dastgiri, S., Asghari-Jafarabadi, M. and Allahverdipour, H. (2016). Determinants of breast cancer screening uptake in Kurdish women of Iran. *Health Promot Perspect*, 6(1):42–46.

Ashtarian, H., Khezeli, M., Saeidi, S. and Zangeneh, A. (2020). The Effect of Model Based Health Education on Performing Breast Self-Examination in Women. *J Basic Clin Health Sci;* 1:15-21

Asmare, K, Yeneaba, B., and 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

Boafo, I. M., and Tetteh, P. M. (2020). Self-Efficacy and Perceived Barriers as Determinants of Breast Self-Examination among Female Nonmedical Students of the University of Ghana. *Int Q Community Health Educ.*;40(4):289–297.

Dagne, A.H., Ayele, A.D., and Assefa, E.M. (2019). Assessment of breast self-examination practice and associated factors among female workers in Debre Tabor Town public health facilities, North West Ethiopia, 2018: cross-sectional study. *PLoS One.*;14(8): e0221356.

Ebirim, C., Nwoke, A., Onyeka, I., Amadi, A. and Nwufo, R. (2015). Knowledge and Practice of Breast Se lf-Examination among Female Undergraduates in South-Eastern Nigeria. Health, 7, 1134-1141

Ezema, R.N., Igbokwe, C., Iwuagwu, T., Agbaje, O., Ofuebe, J., Abugu, L., Eze, D. and Wamanyi, Y. (2021). Association of Sociodemographic Factors, Breast Cancer Fear, and Perceived Self-Efficacy with Breast Cancer Screening Behaviors among Middle-Aged Nigerian Women. *Breast Cancer: Basic and Clinical Research*. 15: 1–13

Etumnu, E.W and Mbiereagu, E. (2021). Influence Of Breast Cancer Awareness Campaigns On the Practice Of Breast Self-Examination Among Women In Owerri Municipal. *IMSUJCS* 4(1) 232-240

Hanson, V. F., El-Kadri, R. G, A., and 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):46-62.

Hassan, M.R., Ghazi, H.F., Mohamed, A.S. and Jasmin, S. J. (2017). Knowledge and practice of breast self-examination among female non-medical students in university Kebangasaan Malaysia (UKM) in Bangi. *Malaysian Journal of Public Health Medicine* 17, 51-58.

Ibrahim, K. M., Hosni, H. A. and Peterson, P. (2016). Grasses of Egypt. Smithsonian Inst. Sch. Press, Smithsonian Contrib. to Botany, 103

Jumbo, C. N. (2019). Level of exposure and perception of media campaigns on breast self-examination by women in Owerri, Imo State, Nigeria. *Novena Journal of communication*, 10(1), 205-213

Kalayu, B., Miskir, A., Belayneh, A., Gebru, G., Ruth, D., Semeneh, A., Teshome, W., Abdurrahman, M. and Wassie, N. (2017). Practices of Breast Self-Examination and Associated Factors among Female Debre Berhan University Students, *International Journal of Breast Cancer*, Article ID 8026297, 6. https://doi.org/10.1155/2017/8026297

Kıssal, A. and Kartal, B. (2019). Effects of Health Belief Model-Based Education on Health Beliefs and Breast Self-Examination in Nursing Students. *Asia Pac Journal Oncol Nursing*, 6:403-10.

Mousavi, F., Etumnu, E.W and Mbiereagu Shojaei, P., and Homasan, S. (2018). Health Beliefs as Predictors of Breast Self-Examination Behavior. *J. Clin med*. 4(2).

Obaji, N.C., Elon, H. A.,Agwu, U.W., Nwigwe, C.A.,Ezeonu, P. O. and Umeora, .U. J.(2013). Awareness and practice of breast self-examination among market women in Abakaliki, South East Nigeria. *Ann Med Heath Sci Res*, 3(1): 7-12.

Ohaeri , B. and Aderigbigbe, M. (2019). Knowledge and use of breast self-examination and mammogram among women of reproductive age in Oyo State Secretariat, Ibadan, Oyo State, Nigeria. *European Journal of Midwifery*. 7(3) : 52-60

Okeke, N. E. (2018). Influence of mass media campaigns on breast cancer knowledge among women in Enugu State. *Global Journal of Arts, Humanities and Social Sciences*, 6(4) :16-43.

Ossai, E., Azuogu, B., Ogaranya, I., Ogenyi, A., Enemor, D. and Nwafor, M. (2019). Predictors of practice of breast self-examination: A study among female undergraduates of Ebonyi State University, Abakaliki, Nigeria. *Niger J Clin Pract*. 22(3):361-85

Pradhan, S. S., Shrestha, R., Parajuli, P., Khagi, R. B. and Bhandari, B. (2017). Knowledge, attitude and practice regarding breast self -examination among female health personnel. *Journal of Kathmandu Medical College*.6(4):156-60.

Rivera-Franco, M. M. and Leon-Rodriguez, E. (2018). Delays in breast cancer detection and treatment in developing countries. Breast Cancer.12:1178223417752677

Terfa, Y., Kebede, E. B. and Akuma, A O. (2020). Breast Self-Examination Practice among Women in Jimma, Southwest Ethiopia: A Community-Based Cross-Sectional Study.

Tuyen, D. Q., Dung, T.V., Dong, H.V., Kien, T.T., and Huong, T. T. (2019). Breast self-examination: knowledge and practice among female textile workers in Vietnam. Cancer Control.26(1):1073274819862788.

Udoh, R. H., Tahiru, M. and Kuupiel, D, (2021). Women's Knowledge, Attitude and Practice of Breast Self-Examination in sub-Saharan Africa: *A scoping review Archives of Public Health*.

Woiloro, L.A., Lubego, B.E., Arficho, T.T., Diramo, T.S., Erjino, D.S. (2021). Predictor of Breast Self-Examination and Breast CancerRisk Perception among Female Students of WCU, Using Health Belief Model.*J Women's Health Care* 10:517.

World Health Organisation (2018). Breast Cancer [Internet]. Geneva: World Health Organisation; [updated: 2023 April 20]. Available from: https://www.who.int/cancer/prevention/diagnosis-screening/breast-cancer/en/

WHO (2020). WHO Report on Cancer: Setting Priorities, Investing Wisely and Providing Care for All.

Wubareg, S and Liyew, M. (2021). Breast self-examination practice among women in Africa: a systematic review and Meta-analysis. *Arch Public Health.* 79: 149. 21.