Breast Self-Examination Practice Among Female Secondary School Students In Osogbo, Western Nigeria

I.N. Usman, S.O. Olanrewaju, and S.O. Usman

Abstract—BACKGROUND: Breast cancer is the most common invasive cancer affecting women worldwide. It comprises 22.9% of invasive cancers in women and 16% of all female cancers. It affects about 12% of the women population worldwide. In Nigeria, about one breast cancer death is reported in every 25 cases identified and the practice of breast self-examination has been reported to range from 19% to 43.2%. This cross sectional study assessed the knowledge, attitude and practice of breast self-examination (BSE) among female secondary school students in Osogbo Metropolis. **METHODS:** A total of 400 respondents were selected using multistage sampling technique. Data were collected using pre-tested self-administered semi structured questionnaire, analyzed using Statistical Package for Social Sciences and presented using appropriate tables and charts. Level of significance set at < 0.05 . **RESULTS:** The mean age $\pm$ SD is 14.77 ± 1.46 years. 390 (97.5%) respondents reported that they have heard of breast cancer while 235 (58.8%) respondents stated that they have heard of breast self-examination (BSE). 15 (3.8%) respondents said the procedures is time wasting while 82 (20.5%) respondents said the procedures were strenuous. 199 (49.8%) strongly disagree that performing breast self-examination may expose them to breast cancer. Individuals with poor knowledge are one time less likely to do breast self-examination (OR = 1.245, CI = 0.647 - 2.394) while in terms of attitude, those with unfavorable attitude are one time less likely to do breast self-examination (OR = 1.025 CI = 0.949 -1.107). **CONCLUSION:** This study revealed a larger proportion of respondents have heard about breast cancer and breast self-examination but with inadequate knowledge of the correct procedures of breast self-examination (BSE) thereby resulting into poor attitude & practice of breast self-examination (BSE). This challenge therefore indicates an urgent need for continuous awareness and sensitization programs in the communities.

Keywords — Knowledge, Attitude, Practice, Breast.

I. INTRODUCTION

Breast cancer is an uncontrolled growth of abnormal cells in the milk producing glands of the breast or in the ducts that deliver milk to the nipples. Breast cancer is the most common invasive cancer affecting women worldwide. It comprises 22.9% of invasive cancers in women and 16% of all female cancers [1]. It affects about 12% of the women population worldwide [2]. Report on the incidence of breast cancer reveals that one out of every eight women in the world stands a chance of having the disease in her life time [3]. In the developing countries, the rate of breast cancer is reportedly higher than developed countries [4]. Approximately half of the breast cancer cases and 60% of the

deaths are estimated to take place in developing countries [5]. The high incidence of breast cancer necessitates the need for early detection which enhances early initiation of treatment thereby reducing mortality. The various diagnostic measures for early detection of breast cancer include breast self-examination (BSE), clinical breast examination (CBE) and mammography [6].

Breast self-examination (BSE) is a screening method that people perform the procedures on their own in an attempt to detect early breast cancer. Breast self-examination is easy to perform and cheap but despite these the rate of practice of breast self-examination is low and varies in different countries. Studies have cited the reasons for the low practice of breast self-examination which is as a result of inadequate knowledge of breast self-examination, lack of time, lack of self-confidence in their ability to perform the technique correctly, fear of possible discovery of a lump, and embarrassment associated with handling of the breast [7]. Breast self-examination is often carried out once in a month, between the 7th and 10th day of the menstrual cycle, to detect breast cancer at the early stages of growth thereby ensuring a better prognosis when treated [8]. The method involves the woman herself looking at and feeling each breast for possible development of lumps, discharge other than breast milk, swelling of the breast, skin irritation or dimpling, nipple abnormalities (such as pain, redness, scaliness, or turning inward). In Nigeria, the practice of breast self-examination has been reported to range from 19% to 43.2% [9].

A study of BSE done among female students of the University of Ibadan, Ibadan reported that 82.5% of students have heard of BSE, 53.2% of them knew what BSE is used for while only 25% practice BSE regularly and 30% practice BSE infrequently [10]. A research on the knowledge, attitude and practice of respondents about breast self-examination among female secondary school teacher in a rural community in Oyo State showed that 54% of the respondent had poor knowledge, 48% had poor attitude and 62% demonstrated a poor practice [11].

In a study done by Yakubu and others on knowledge, attitude, and practice of breast self-examination among female nurses in Aminu Kano teaching hospital, Kano, Nigeria stated that 100% respondents unanimously agree that BSE is useful and 84.3% of the respondents responded that they can encourage BSE to others [12]. Sani *et al* stated in their research on influence of educational level on knowledge and practice of breast self-examination among

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women in Sokoto, Nigeria that 65% of the respondents practiced BSE while 35% did not practice BSE and among the 65% of the respondents that practiced BSE, only 52.7% practiced BSE monthly [13]. A research done on Knowledge, attitude and practice of breast self-examination among female undergraduate students in the University of Buea stated that 41% of the respondents in the study had ever performed BSE, 29.5% have performed BSE within the past 12 months. Only 3% had performed BSE regularly (10-12 times) within the past 12 months [14].

II. SPECIFIC OBJECTIVES

- To determine the knowledge of breast self-examination (BSE) among female secondary school students in Osogbo Metropolis.
- To evaluate the attitude of breast self-examination (BSE) among female secondary school students in Osogbo Metropolis.
- To assess the practice of breast self-examination (BSE) among female secondary school students in Osogbo Metropolis.

III. METHODS

This descriptive cross-sectional survey was carried out in Osogbo Metropolis, the capital of Osun state, South-West Nigeria. The study population consists of female secondary school students in selected secondary schools.

A semi-structured questionnaire was used to seek information about the socio-demographic characteristics of the female students, knowledge, attitude and practices of breast self-examination by female secondary school students on breast self-examination. Ethical approval to carry out the study was obtained from the ethical review committee of Ministry of Health, Abeere, Osun State. A multi-stage sampling technique was used to select the adolescent girls from the selected schools in Osogbo metropolis.

Sample Size Estimation

Sample size calculation was done using Leslie Fischer's formula, for population >10,000 with a 5% or 0.05 degree of precision and 95% confidence interval. There seems to be no data available as regards the proportion of female secondary school students practicing breast self-examination in Osogbo Metropolis, but a study on Breast self-examination practice among female senior secondary school students in Abuja, reported 34.6% (15). The Leslie Fischer's formula for sample size when population is > 10,000 is:

$$n = Z^2PQ/d^2$$

Where:

n = minimum sample size,

Z = standard normal deviation at 95% confidence interval which is 1.96,

d = degree of precision or error margin which is 5% (taken

P = proportion of the target population from previous studies (estimated at 34.6% which is $34.6/100 = 0.35$),

Q = alternate proportion (1-P) which is $1-0.346=0.65$

$$n = \frac{(1.96)^2 (0.35)(0.65)}{(0.05)^2} = 349$$

Adding a 5% attrition rate, the minimum sample size (n) = $5/100 \times 349 = 17$

Therefore, minimum sample size (n) is $349 + 17 = 366$.

STATISTICAL ANALYSIS

Data was statistically analyzed using Statistical Package for Social Sciences (SPSS) version 23.0 software. All data were expressed as Mean $\pm$ Standard Deviation (SD). Statistical test of significance were performed by Chi- Square test. Level of significance was set with p-value less than 0.05.

IV. RESULTS

SOCIO-DEMOGRAPHIC DATA

400 respondents participated in the study and the mean age $\pm$ SD is 14.77 ± 1.46 . Based on the level of education of respondents, 84 (21.0%) are in SSS1, 105 (26.3%) are in SSS2 while 211(52.8%) are in SSS3. In term of the type of school of the respondents 349 (87.3%) are from private schools while 51 (12.8%) are from public school. Age category of the respondents shows that 300 (75.1%) are between 13-15 years, 93 (23.4%) are between 16-18years, and 7 (1.8%) are 19 above. As regards the position of the respondents in their family, 143 (35.8%) reported that they were first born, 106 (26.5%) were second born 83 (20.8%) were third born, 53 (13.3%) were last born of their family while 15 (3.8%) respondents chose others.

SOCIO-DEMOGRAPHIC & TREATMENT DATA

Variables	Frequency	Percentage (%)
Ethnicity of respondents		
Yoruba	390	97.5
Igbo	9	2.3
Hausa	1	0.3
Total	400	100.0
Religion of respondents		
Christianity	228	57.0
Islam	172	43.0
Total	400	100.0
Level of education of respondents		
SSS1	84	21.0
SSS2	105	26.3
SSS3	211	52.8
Total	400	100.0
Type of school		
Private	349	87.3
Public	51	12.8
Total	400	100.0
Age in categories		
13- 15 years	300	75.1
16 – 18 years	93	23.4
19 and above	7	1.8
Total	400	100.0
Family setting		
Monogamous	346	86.5
Polygamous	54	13.5
Total	400	100.0
Mother level of education		

No formal education	13	3.3
Primary	50	12.5
Secondary	235	58.8
Tertiary	102	25.5
Total	400	100.0
Father level of education		
No formal education	12	3.0
Primary	26	6.5
Secondary	232	58.0
Tertiary	130	32.5
Total	400	100.0
Position in the family		
First	143	35.8
Second	106	26.5
Third	83	20.5
Last	53	20.8
Others	400	100.0

KNOWLEDGE ABOUT BREAST CANCER DISEASE (N = 400)

Variable	Frequency	Percentage (%)
Have you ever heard of breast cancer disease		
Yes	390	97.5
No	10	2.5
Total	400	100.0
Can breast cancer develop from the breast tissue		
Yes	336	84.0
No	64	16.0
Total	400	100.0
Symptoms of breast cancer disease		
Breast lump	92	23.0
Constant pain in part of the breast/ Armpit	67	16.8
Nipple Changing position/ shape or becoming inverted	3	0.8
One breast becoming larger or lower	9	2.3
Rash on/ around nipple	7	1.8
Thickening different from the other breast tissue	6	1.5
All of the above	79	19.8
No idea	137	34.3
Total	400	100.0
Risk factors for breast cancer disease		
Age	8	2.0
Obesity	20	5.0
Biological sex	12	3.0
Diet	5	1.3
Lack of child bearing	5	1.3
Lack of breast feeding	24	6.0
Genetics	22	5.5

Higher levels of hormones	17	4.3
Alcohol Consumption	11	2.8
Radiation exposure	6	1.5
All of the above	35	8.8
No idea	190	47.6
Total	400	100.0

KNOWLEDGE ABOUT BREAST SELF-EXAMINATION PROCEDURE (N=400)

Variable	Frequency	Percentage (%)
Have you heard of breast self-examination?		
Yes	235	58.8
No	165	41.3
Total	400	100.0
Gender that should routinely perform breast self-examination (BSE)		
Female (Correct answer)	284	71.0
Male, Both male and female (Incorrect answer)	116	29.0
Total	400	100.0
Age that breast self-examination (BSE) should begin		
8 -15years (correct)	382	78.5
16 years and above (Incorrect)	18	21.5
Total	400	100.0

KNOWLEDGE ABOUT BREAST SELF-EXAMINATION PROCEDURE (N=400)

Variable	Frequency	Percentage (%)
How often breast self-examination (BSE) should be done		
Monthly (Correct answer)	142	35.5
Other responses (Incorrect answer)	258	64.5
Total	400	100.0
Palpating procedure for breast self-examination (BSE)		
Palpate with palm and minimum of three fingers (Correct answer)	94	23.5
Other responses (Incorrect answer)	306	76.5
Total	400	100.0

Figure 1: Summarized Knowledge On Breast Self-Examination

Out of 400 respondents, 128 (32.0%) have adequate knowledge on breast self-examination while 272 (68.0%) have inadequate knowledge on breast self-examination as represented in figure 1 below.

ATTITUDE TOWARDS BREAST SELF-EXAMINATION

Unsure	91 (24.2)
Disagree	134 (33.5)
Strongly disagree	239 (59.8)
Total	400 (100.0)
Early detection of breast cancer with breast self-examination can save the life of a woman	
Strongly agree	261 (65.3)
Agree	119 (29.8)
Unsure	11 (2.8)
Disagree	9 (2.3)
Strongly disagree	0 (0.0)
Total	400 (100.0)

Figure 2: Summarized Attitude Towards Breast Self-Examination

The pie chart below shows the respondents attitude towards breast self-examination in this study. Out of the 400 respondents, 366 (91%) have a favourable attitude towards breast self-examination while 34 (9%) have an unfavourable attitude towards breast self-examination.

Attitude towards breast self-examination (n=400)

Variable	Frequency (%)
Breast self-examination is necessary for early detection of breast cancer	
Strongly agree	259 (64.8)
Agree	132 (33)
Unsure	7 (1.8)
Disagree	1 (0.3)
Strongly disagree	1 (0.3)
Total	400 (100.0)
Breast self-examination should be made mandatory for all females	
Strongly agree	225 (56.3)
Agree	140 (35.0)
Unsure	17 (4.3)
Disagree	14 (3.5)
Strongly disagree	4 (1.0)
Total	400 (100.0)
Performing breast self-examination may expose me to breast cancer	
Strongly agree	14 (3.5)
Agree	20 (5.0)
Unsure	36 (9.0)
Disagree	131 (32.8)
Strongly disagree	198 (49.5)
Total	400 (100.0)
Breast self-examination is against my religious/cultural belief	
Strongly agree	7 (1.8)
Agree	12 (3.0)
Unsure	23 (5.8)
Disagree	132 (33.0)
Strongly disagree	226 (56.5)
Total	400 (100.0)
Breast self-examination is a waste of time and resources	
Strongly agree	61 (16.2)
Agree	43 (11.4)

PRACTICE OF BREAST SELF EXAMINATION (BSE)

Practice of breast self-examination (BSE) (n=400)

Variable	Frequency (%)
Ever performed breast self-examination	
Yes	109 (27.3)
No	291 (72.8)
Total	400 (100.0)
Performed breast self-examination in the past six months	
Yes	78 (19.5)
No	322 (80.5)
Total	400 (100.0)
If yes what are the reasons why breast self-examination was performed in the past six months (N=78)	
To examine my breast regularly to prevent breast cancer	47 (60.3)
Because breast cancer is in my family history	4 (5.1)
I just feel like doing it	27 (34.6)
Total	78 (100.0)
If no what are the reasons why breast self-examination was not performed in the past six months (N=322)	
I do not have time for it	26 (8.1)
I don't have any symptoms of breast cancer	49 (15.2)
I don't know how to do it	167 (51.9)

I don't think it is necessary	20 (6.2)
I feel shy	6 (1.9)
I'm healthy	36 (11.2)
I'm scared of being diagnosed with breast cancer	8 (2.5)
It may be painful	10 (3.1)
Total	322 (100.0)

PRACTICE OF BREAST SELF EXAMINATION (BSE)

Variable	Frequency (%)
Age you started performing breast self-examination (109)	
8.0	1 (0.9)
10.0	6 (5.5)
11.0	2 (1.8)
12.0	35 (32.1)
13.0	24 (22.0)
14.0	18 (16.5)
15.0	11 (10.1)
16.0	5 (4.6)
17.0	4 (3.7)
18.0	3 (2.8)
Total	109 (100.0)
Last time you performed breast self-examination (N=109)	
Between 3 to 6 months ago	21 (19.3)
Between 6 & a year ago	17 (15.6)
Less than a month ago	59 (54.1)
More than a year	12 (11.0)
Total	109 (100.0)
Period of menstrual cycle breast was examined (N=109)	
After Menstruation	42 (38.5)
Before Menstruation	20 (18.3)
During Menstruation	10 (9.2)
No particular time	37 (33.9)
Total	109 (100.0)
How often you perform breast self-examination in a year (N=109)	
Anytime	21 (19.3)
Daily	33 (30.3)
Weekly	19 (17.4)
Monthly	29 (26.6)
Yearly	7 (6.4)
Total	109 (100.0)
Methods of breast self-examination often practiced (N=109)	
During shower	33
On the bed lying down	18
Standing in front of the mirror	54
All of the above	4
Total	109 (100.0)

PRACTICE OF BREAST SELF EXAMINATION (BSE)

Variable	Frequency (%)
Steps of breast self-examination followed in front of the mirror (N=58)	
Place hand on hip, press down & make the chest muscle tense	6 (10.3)

Raise the arm above/ behind the head	21 (36.2)
Squeeze each nipple gently for any discharge	22 (37.9)
Start with arms at sides	7 (12.1)
All of the above	2 (3.4)
Total	58 (100.0)
Steps of breast self-examination followed during shower (N=37)	
Start by raising an arm behind your head	10 (27.0)
Use the pad of the hand to examine the breast	12 (32.4)
Use soapy hand to press firmly on the breast against the chest wall	8 (21.6)
All of the above	7 (18.9)
Total	37 (100.0)
Steps of breast self-examination followed on bed while lying down (N=22)	
Lie down on the back & be comfortable	7 (31.8)
Place a pillow under the shoulder of the side to be examined	3 (13.6)
Use the lip of the hand to examine the breast	8 (36.4)
All of the above	4 (18.2)
Total	22 (100.0)

Figure 3: Summarized Practice On Breast Self-Examination

The pie chart below shows the respondents practice of breast self-examination in this study. Out of the 400 respondents, 44 (11%) have good practice of breast self-examination while 356 (89%) have poor practice of breast self-examination.

PREDICTORS OF PRACTICE OF BREAST SELF-EXAMINATION

According to the table below, individuals with poor knowledge are one time less likely to do breast self-examination ($P < 0.05$, OR = 1.245, CI = 0.647-2.394) while in terms of attitude, those with unfavourable attitude are one time less likely to do breast self-examination. ($P < 0.05$, OR = 1.025 CI = 0.949 -1.107).

Variable	Statistical significance	Odds ratio	Confidence interval	
			Lower level	Upper level
Good knowledge with reference to				
Poor knowledge	0.511	1.245	0.647	2.394
Favourable attitude with reference to				
Unfavourable attitude	0.963	1.025	0.949	1.107

V. DISCUSSION

This research outcome has shown that 58.8% of the respondents have heard about breast self-examination (BSE)

and 27.3% of the respondents have ever performed BSE while only 19.5% of the respondents performed BSE in the past six months. This is similar to a previous study reported in Abuja that 56.4% of the respondents knew about BSE and 10.1% of the respondents have ever performed BSE [15] but it is in contrast to Assuit, South Egypt study that revealed that 87.9% of the respondents reported to have heard about Breast Self-Examination (BSE) [16]. Related to this is a study done at University of Ibadan, Nigeria which described that 82.5% have heard of BSE and only 11% female individuals practice the procedure regularly (10).

It was observed in this study that having heard about BSE does not necessarily imply to high performance rate of breast self-examination (BSE). The poor practice of BSE among the respondents in this study was because they do not know how to perform the procedure and perhaps they appear not to also know the specific period to perform breast self-examination. However, 84.3% of the respondents stated that they would like to know more about breast self-examination (BSE) and its procedure, which implies that young adolescent girls are eager to learn more about breast self-examination (BSE) which will enhance positive attitude and behaviour towards the practice of breast self-examination (BSE) at an early stage of life.

Findings of this study indicated that 27.3% of the respondents practiced BSE, but only 19.5% performed breast self-examination in the past six months. This illustrated that a very low percentage of the female secondary school students were really practicing BSE. In disparity to this study, there is high level of practice of BSE among women of about 65.3% in a research done at Sokoto Nigeria (13).

The peak proportion of the respondents obtained their first information from their school whereas the least source of information on BSE was obtained from the church. Contrast observations about the respondents' first information were stated in a research held among female secondary school teachers in Ilorin, Nigeria where 29.9% of those studied indicated that the information were obtained from the television. This may be as a result of insufficient health education by health workers to females on BSE (8).

Furthermore, only 19.5% respondents were aware that the correct period of menstrual cycle for breast self-examination was after menstruation while 13.0% respondents examined their breasts at any time they felt like. This does not agree with a previous research outcome on breast self-examination among female undergraduates in Enugu which revealed that 62% respondents declared that they examined their breasts after menstruation while 54.6% examine their breasts at any time they felt like [17]. The poor knowledge on the methods and timing of breast self-examination might be because the respondents were not taught the procedures of BSE as this does not necessarily fall into the syllabus of any of the main courses the respondents or in other cases, little attention paid to such topics by school instructors because this area of study in general is not taken as seriously as one would expect.

The educational status has significant effect on knowledge on BSE in which the respondents' level of education may determine their knowledge on BSE. This was in agreement to a BSE study among women in Sokoto Nigeria in which there was significant relationship between the educational level and the knowledge of BSE among those respondents (13). Respondents in the higher level of education were older in age and possibly taught the

procedure of BSE (who to routinely perform BSE, age to start BSE, how often BSE have to be done, procedures for BSE, signs and risk factors of BSE, among others) by their teachers. This is similar to a previous study done among female secondary school students in which the higher level of education determines the knowledge on BSE [15].

The age of the respondents is significantly associated with the practice of BSE which is likely due to the fact that respondents with adequate knowledge on BSE will definitely practice BSE as they will be aware of the importance of early detection of breast cancer in reducing mortality rate and worsening of the disease. This is similar to other study done among young adolescent girls in Abuja, Nigeria [15] and as well in concordance with the research on the influence of educational level on knowledge and practice of breast self-examination among women in Sokoto [13]. Knowledge on BSE is insignificantly associated with the attitude of BSE which is likely due to the fact that respondents with adequate knowledge on BSE does not implies that the respondents will have a good behaviour towards BSE practice. This is similar to the outcome reported by the Authors of a research carried out on knowledge, attitude and practice of breast self-examination among female undergraduate students in the University of Buea, who reported that 51.4% admitted that they were not afraid to detect breast cancer while 26.5% were afraid. 88% of the respondents approved that BSE was important and useful in the early detection of breast cancer [14].

VI. CONCLUSION

This study revealed a larger proportion of respondents have heard about breast cancer and breast self-examination but with inadequate knowledge of the correct procedures of breast self-examination (BSE) thereby resulting into poor attitude & practice of breast self-examination (BSE). This challenge therefore indicates an urgent need for continuous awareness and sensitization programs in the communities, as well as the review of high school subject curriculum to include breast self-examination (BSE) teaching and practice & general sexual and reproductive health programs.

There is need for the development of more efficient educational programs aiming at demonstrations of the correct procedures of breast self-examination (BSE) so as to enhance early detection of breast cancer and proffer prompt treatments to reduce the mortality rate of the breast cancer.

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VIII. FINANCIAL & NON-FINANCIAL COMPETING INTEREST

The authors declare no financial or non-financial competing interest.

IX. CONFLICT OF INTEREST

Authors declare they have no conflict of interest.

X. REFERENCES

- [1] World Health Organization (WHO). Breast Cancer, prevention and control, Geneva. 2016. Available: <http://www.who.int/cancer/detection/breastcancer/en/index1.html>.
- [2] A. McGuire, J.A. Brown, C. Malone, R. McLaughlin, and M.J. Kerin (2015). 'Effects of age on the detection and management of breast cancer', *Cancer*, 7(2), pp. 908–29. doi: 10.3390/cancers7020815.
- [3] American Cancer Society. Cancer Facts & Figures 2015. Cancer Facts Fig 2015. 2015;1–9.
- [4] C. Desantis, J. Ma, L. Bryan, and A. Jemal (2014). Breast cancer statistics, 2013. *Cancer Journal of Clinicians*, 64, pp. 52-62.
- [5] J. Ferlay, H.R. Shin, F. Bray, D. Forman, C. Mathers, and D.M. Parkin (2014). Estimates of worldwide burden of cancer in 2008. *International Journal of Cancer*, 127, pp. 2893-2917.
- [6] G Ertem, and A. Kocer (2010). Breast self-examination among nurses and midwives in Odemiş district in Turkey. *Indian Journal of Cancer*, 46 (3), pp. 208-213.
- [7] O. Karayurt, D. Ozmen, and A.C. Cetinkaya (2008). Awareness of breast cancer risk factors and practice of breast self-examination among high school students in Turkey. *BMC Public Health*, 8, pp. 359.
- [8] F.O. Kayode, T.M. Akande, and G.K. Osagbemi (2005). Knowledge, Attitude and Practice of Breast Self -Examination among Female Secondary School Teachers in Ilorin, Nigeria. *European Journal of Scientific Research*, 10 (3), pp. 42-47.
- [9] U.M. Gwarzo, K. Sabitu, and S.H. Idris (2009). Knowledge and practice of breast self-examination among female undergraduate students of Ahmadu Bello University Zaria, northwestern Nigeria. *Annals of African Medicine*, 8(1), pp. 55-58.
- [10] Chioma, and S.R.N. Asuzu (2007). Knowledge, attitude and practice of breast self-examination among female students of the University of Ibadan, Nigeria. *Pakistan Journal of Social Sciences*, 4 (3), pp. 400-402.
- [11] J.O. Faronbi, and J. Abolade (2012). Breast self-examination practices among female secondary school teachers in a rural community in Oyo State, Nigeria. *Open Journal of Nursing*, 2(2), pp. 111-115.
- [12] A.A. Yakubu, M.A. Gadanya, and A.A. Sheshe (2014). Knowledge, attitude, and practice of breast self-examination among female nurses in Aminu Kano teaching hospital, Kano, Nigeria. *Nigerian Journal of Basic and Clinical Sciences*, 11, pp. 85-88.
- [13] A.M. Sani, F. Naab, and L. Aziato (2016). Influence of educational level on knowledge and practice of breast self-examination among women in Sokoto, Nigeria. *Journal of Basic and Clinical Reproductive Sciences*, 5, pp.100- 106.
- [14] F.P. Nde, J.C.N. Assob, T.E. Kwenti, A.L. Njunda, and T.R.G. Tainenbe (2015). Knowledge, attitude and practice of breast self-examination among female undergraduate students in the University of Buea. *BMC Research Notes*, 8, pp.43.
- [15] A.R. Isara, and C.I. Ojedokun (2011). Knowledge of breast cancer and practice of breast self-examination among female senior secondary school students in Abuja, Nigeria. *Journal of Preventive Medicine and Hygiene*, 52, pp. 186-190.
- [16] B.H. Abou. Breast Self-Examination (BSE) (2016). Knowledge and Practice among Female Faculty of Physical Education in Assuit, South Egypt. *Journal of Medicine, Physiology and Biophysics*, 25, pp. 1-8.
- [17] M. Onyeka, D. Hakeem, and I. Adu (2015). An appraisal of the knowledge, attitude and practice of breast self-examination among university female nursing undergraduates and the factors that affect their practice of BSE. *African Journal of Nursing and Midwifery*, 2 (7), pp.565-570.

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