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KNOWLEDGE OF, AND ATTITUDE TOWARDS BREAST CANCER AETIOLOGY AND BREAST SELF-EXAMINATION AMONG FEMALE STUDENTS IN A TERTIARY INSTITUTION IN SOUTH WESTERN NIGERIA

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ABSTRACT:
Breast cancer (CA) is the commonest malignancy occurring in women, and constitutes a major disease burden in low income countries of the world, including Nigeria, where the mortality rates are high. A good knowledge of the etiological risk factors, coupled with the uptake of screening tests, are important in attaining prevention of breast CA and also reducing the morbidity and mortality associated with the disease. This study therefore set out to assess the knowledge and attitude of the female students of a tertiary institution in South-western Nigeria towards breast cancer etiology and breast-self-examination (BSE). This was a descriptive cross-sectional study that recruited 350 respondents using multi-stage sampling technique. The study instrument was a pre-tested, semi-structured, self-administered questionnaire. Data analysis was done using IBM SPSS version 20 and results were presented using frequency tables and charts. Chi square tests and logistic regression analyses were also done as appropriate. Majority (80.6%) of the study respondents had heard of breast cancer, 78.4% of which had poor knowledge about breast cancer etiology and about two-thirds of these had a good attitude towards BSE. Only 18 (6.4%) of the 282 respondents who had ever heard of breast CA knew how to perform BSE correctly, while only 159 (56.4%) of them had ever carried out BSE. Age, knowing anyone with breast CA, previous exposure to information on BSE, and previous clinical breast examination were found to have statistically significant association with respondents' knowledge of, and attitude towards BSE. The study respondents generally had a poor level of knowledge of breast CA etiology, older respondents showed better attitude towards BSE, and only a few knew how to perform BSE correctly. We recommend the early introduction of breast CA prevention education to female students in high school.

Keywords: Attitude, Breast, Breast Self-Examination, Cancer, Knowledge, Practice

INTRODUCTION:

Breast cancer is the commonest malignancy occurring in women, affecting about a quarter of women globally. It is reputed to be second major cause of cancer deaths among women [1], after lung cancer [2]. This underscores the lethal nature of the condition. The prevalence of breast cancer among Nigerian women and women from some of her neighboring countries is as high as 45.7% [3]. Breast cancer constitutes a major disease burden in low income countries of the world, including Nigeria, where the mortality rates are high (4). Overall in Africa, the breast cancer incidence in 2018 was 27.9 per 100,000 in Central part of Africa and 48.9 per 100,000 in the Northern part of Africa. The attendant mortality rates in the regions were 15.8% and 18.4%, respectively [5].

A good knowledge of the aetiological and risk factors, accompanied with uptake of screening, are some of the right steps in reducing the morbidity and mortality associated with breast cancer. Among the several factors that have been recognized to predispose to the development of breast cancer include genetic factor, as a result of mutation in the breast cancer genes BRCA1 and BRCA2, though the majority of women that developed breast cancer did not express this factor [6]. Other risk factors are family history (in particular, first degree relatives), age, situations that predispose to increased oestrogen, such as, early menarche, late menopause, hormone replacement therapy among others [6]. Other associated factors are alcohol intake, sedentary lifestyle or physical inactivity [7, 8]. The summary is that breast cancer is a disease with multi-factorial aetiological basis [9].

Several screening and diagnostic methods are available, some of which are very expensive, some are not so expensive, and others are free and safe. Mammography is a screening tool which is key to diagnosis, but it may not be within the reach of women in poor nations, though its application can greatly reduce the morbidity and mortality associated with breast cancer [10, 11]. As a result of poor health infrastructure and low resources, breast self-examination (BSE) has been recommended by some studies for people in low-and-middle-income-countries (LMIC), although it is also applicable and relevant in the developed countries as well [12]. Application of BSE entails visualizing the breasts in a comfortable position for size, shape, firmness and general appearance; and self-palpation of the breast for consistency, presence of nodules, discharges and tenderness [13]. This is recommended to be carried out between the 7th and 10th days of the menstrual cycle when the breasts are usually soft and devoid of the tenderness occasionally associated with the menstrual cycle [13]. BSE is usually without pain, and there is no infringement on the privacy of the individual. It is important and necessary

for women generally, especially female students in institutions of higher learning to have the correct perception of the risk factors for the development of breast cancer and the available screening methods. BSE can be done by every female, once the procedure is clearly explained, and understood.

With regards to breast cancer aetiology, it is not uncommon in some developing countries, even among educated people, to find a situation in which the cause of cancer growth is attributed to attacks from enemies. Only a few studies assessing female undergraduates' knowledge of breast CA aetiology and attitude towards BSE have been carried out in Nigeria, and such studies have been conducted among market women and women belonging to certain professional groups.

From a study in Cameroon [14], 88.1% of the undergraduates surveyed had knowledge about breast cancer, though less than a quarter of this sub-population had heard about its risk factors. A little less than half (47%) of the respondents that had heard about breast cancer had heard about BSE, and only 38.5% had ever practiced it [14]. According to a study conducted in Uganda, a very high proportion (98%) of the students had heard about breast cancer and about three-quarters practiced BSE [15]. A similar study carried out in Nigeria, though not amongst undergraduates, reported outcomes similar to those from Uganda, such as a high level of awareness (80.6%) and BSE practice was 60.1% [16]. From an Ethiopian study, 75.3% of the studied undergraduates had heard about breast cancer, 85.6% had heard about BSE and 54.1% practiced BSE [17].

Our study was done to ascertain the level of knowledge of female undergraduates in Osun State University (UNIOSUN) about breast cancer, the risk factors, their attitude towards, and practice of BSE as well the predictors.

METHODOLOGY:

Study site: This study was carried out at the Osogbo Campus of the Osun State University, Osun State South-Western Nigeria. The University is a multi-campus institution with the main campus situated in Osogbo, the state capital. The main campus houses the College of Science, Engineering and Technology (CSET), as well as the College of Health Sciences (CHS).

Study design: This was a descriptive cross sectional study assessing the perceptions of respondents on the aetiology of breast cancer, attitude to and practices of BSE.

Target population: Female undergraduates in higher institutions of learning in Osun state, Nigeria.

Study population: 100 level and 200 level female students of the two Colleges (CSET and CHS) domiciled within the Osogbo campus of Osun State University.

Sample size determination: the sample size was estimated using the Leslie Fischer's formula using prevalence obtained from a previous study [18], giving a minimum sample size of 276. However, a total of 350 questionnaires were printed and administered to 350 respondents to take care of possible attrition.

Sampling: A multi stage sampling technique across levels, departments and faculties/ within the colleges was employed to recruit participants into the study.

Data collection instrument: The research instrument was a pre-tested, semi-structured, self-administered questionnaire. A purposely designed questionnaire gleaned from many relevant previous studies with Cronbach alpha >7.5 for both the knowledge of Breast cancer and the awareness of BSE sections was used for the study. Study variables collected included socio-demographic characteristics, knowledge about aetiology of cancer of the breast as well as knowledge, attitude towards, and practice of BSE. There were twenty-two questions on knowledge of breast cancer aetiology and eight questions on attitude towards BSE

Each right answer scored as having obtained one mark and wrong answer scored as zero. Respondents who scored 50% or more of the total obtainable score in each case were considered as having good knowledge or supportive attitude, while those who had less than 50% were categorized as having poor knowledge or non-supportive attitude.

In the attached questionnaire, Questions 18A through to 18V were on knowledge while questions on attitude were from 19A to 19H.

With respect to performance of BSE, knowledge of correctness of doing the BSE procedure was assessed through four questions (Q 10 to Q 13): the frequency of performing BSE (those who chose at least once a month were adjudged correct); timing of BSE (those who chose just after menstruation/ before ovulation were adjudged correct); the parts of the breast/ chest wall examined (those who chose the four quadrants of the breast, the axillary tail and the base of the nipple were adjudged correct); and finally those who will look out for other signs apart from lumps when doing BSE (e.g. skin discoloration or dimpling, discharge or puckering of the nipple) were also adjudged to be knowledgeable. Each "correct answer" was given a score of 1, making a maximum of 4. Those that have at least 75% (3 out of 4) of the scores, were finally designated as having knowledge of performance of BSE correctly.

Ethical clearance: Ethical clearance for the study was obtained from the College of Health Sciences Health Research and Ethics Committee (CHS HREC), Osun State University. Verbal informed consent was obtained from each respondent.

Data analysis: Data collected were analyzed using the IBM-SPSS software version 20. Relevant frequency distribution tables were generated. The Chi-square test was used to demonstrate relationships between categorical variables such as knowledge and/or attitude against socio-demographic characteristics. Logistic regression models were used to identify predictors for "knowledge of aetiology of breast cancer", "attitude towards BSE" and "correct performance of BSE". Level of statistical significance was set at p-values <0.05.

RESULTS:

Table 1 shows the socio-demographic characteristics of the respondents. Majority of the respondents (244; 69.7%) were in the 15 to 19 years age group (adolescents). Mean age for all the respondents was 19.0 years (SD 1.96) and age range 15 to 24 years. About three-quarters were Christians (267; 76.3%), and most of them were from the Yoruba tribe (342; 97.7%). Majority also had parents who were highly educated, fathers and mothers, 64.0% and 56.6% respectively.

One-half of the respondents were from each of the two colleges.

Of the 350 respondents, 282 (80.6%) had ever heard (awareness) of BSE, Just a little more than half of the respondents who were aware were from the College of Health Sciences (51.4%).

The commonest source of information/ awareness about BSE was Health workers (40.1%), followed by Social Media (28%); Radio/TV (27.7%); Internet (22.3%); Family and friends (21.3%) and Print media (19.9%) (Multiple response were allowed; not shown in tables).

With regards to knowledge, only 21.6 % of respondents had good knowledge of aetiology of cancer of the breast, while 78.4% had poor knowledge. Concerning attitude, 65.6% of the respondents showed a positive attitude towards BSE compared to 34.4% that showed a negative attitude.

Performance of BSE:

Out of the 282 respondents, only 18 (6.4%) knew how to perform BSE correctly while 264 (93.6%) did not know. Also, only 159 (56.4%) of them (of those who had ever heard of BSE) had ever carried out BSE; this is equivalent to less than half (45.4%) of the total number of the respondents studied (350).

Among the 159 respondents who had ever done BSE, only 16 (10.1%) knew how to perform it correctly. Majority of the 159 respondents (118, 74.2%) did BSE monthly or more frequently, but only 20 (12.6%) of them did it during the medically recommended time for performing BSE (i.e. after menstruation and before ovulation. A little more than half of the respondents (83 i.e. 52.2%) usually examined all four quadrants, nipple and the axillary tail.

In Table 2, respondents' knowledge on aetiology of breast cancer and attitude towards BSE were cross-tabulated with selected socio-demographic characteristics and other factors. With respect to knowledge, the results showed that the association between knowledge and age, not knowing a person who had cancer of the breast, having been enlightened/ educated on breast CA, and having ever had a clinical breast examination were statistically significant. Older youths (35.2%), those who did not know a person who had cancer (25.1%), as well as those who had been enlightened/ educated on breast CA (32.2%) and those who previously had a clinical breast examination (35.6%) had better level of knowledge, compared to their counterparts. With regards to attitude, respondent's College, not knowing a person who had breast CA, having been enlightened/ educated on breast CA, and having someone who did BSE regularly had statistically significant association with attitude. Respondents from the College of Health Sciences (71.7%), those who didn't know a person who has or had cancer (69.5%), as well as those who had been enlightened/ educated on breast CA (77.0%) and those who did not know anyone who did BSE regularly (71.5%) had better attitude, when compared with their counterparts.

Table 3 shows the relationship between a number of factors and the respondents' knowledge on the correct performance of BSE, as well as actual correct performance of BSE.

Age, knowledge of breast cancer aetiology as well as attitude towards BSE were found to be significantly associated with the knowledge of correct performance of BSE. A higher proportion(12.1%) of the respondents in the 'older youths' age category had good knowledge of BSE performance as opposed to only 3.7% of the younger youths. concerning respondents' knowledge on the aetiology of breast cancer, 16.4% of those who had good knowledge also had correct knowledge on BSE performance; whereas, out of those with positive attitude towards BSE, 9.7% reported correct performance of BSE, when compared with their counterparts, none of whom knew how to perform BSE correctly.

Similar results were obtained for those who actually performed BSE, with age, knowledge of breast cancer aetiology as well as attitude towards BSE found to be associated with actual performance of BSE correctly ($p < 0.05$).

Table 1: Socio-demographic characteristics of the study respondents (n =350)

VARIABLE	FREQUENCY (%)
AGE GROUPS (years)	
15-19 (Adolescents)	244 (69.7)
20-24	106 (30.3)
ETHNICITY	

Yoruba	342 (97.7)
Other tribes	8 (2.3)
FATHER'S EDUCATIONAL STATUS	
Low (no formal education to secondary education)	84 (24.0)
High (post-secondary education)	224 (64.0)
Unknown	42 (12.0)
MOTHER'S EDUCATIONAL STATUS	
Low (no formal education to secondary education)	111 (31.7)
High (post-secondary education)	198 (56.6)
Unknown	41 (11.7)
COLLEGE	
Health Sciences	175 (50.0)
Science, Engineering & Technology (SET)	175 (50.0)
RELIGION	
Christianity	267 (76.3)
Islam	82(23.4)
Traditional	1 (0.3)

Table 2: Relationship between respondents' socio-demographic and other characteristics, and knowledge on aetiology of breast cancer and attitude towards BSE

		TEST OF KNOWLEDGE OF BREAST CA & ATTITUDE TOWADS BSE (n = 282)					
Variable	**Sub variables**	**Knowledge**			**Attitude**		
		Poor n=221 (%)	Good n=61 (%)	χ2 (p-value)	Negative n=97 (%)	Positive n=185 (%)	χ2 (p-value)
Age-group	Adolescents	162 (84.8)	29 (15.2)	14.516 (0.001)	71 (37.2)	120 (62.8)	2.201, (0.155)
	Older youths	59 (64.8)	32 (35.2)		26 (28.6)	65 (71.4)	
College	CHS	116 (80.0)	29 (20.0)	0.468, (0.494)	41 (28.3)	104 (71.7)	4.956, (0.026)
	SET	105 (76.6)	32 (23.4)		56 (40.9)	81 (59.1)	
Father's educational Status (n= 249)	Low	60 (84.5)	11 (15.5)	1.989 (0.158)	31 (43.7)	40 (56.3)	1.922, (0.166)
	High	136 (76.4)	42 (23.6)		61 (34.3)	117 (65.7)	
Mother's educational Status (n=250)	Low	68 (80.0)	17 (20.0)	0.195 (0.659)	36 (42.4)	49 (57.6)	2.256 (0.133)
	High	128 (77.6)	37 (22.4)		54 (32.7)	111 (67.3)	
Having known a person with CA Breast.	Yes	54 (91.5)	5 (8.5)	7.618 (0.006)	29 (49.2)	30 (50.8)	7.199 (0.007)
	No	167 (74.9)	58 (25.1)		68 (30.5)	155 (69.5)	
Having had info on breast CA	Yes	103 (67.8)	49 (32.2)	23.382# (<0.001)	35 (23.0)	117 (77.0)	19.692# (<0.001)
	No	109 (90.8)	11 (9.2)		56 (46.7)	64 (53.3)	
	Not Sure	9 (90.0)	1 (10.0)		6 (60.0)	4 (40.0)	
Ever had a clinical breast examination.	Yes	38 (64.4)	21 (35.6)	7.896# (0.019)	17 (28.8)	42 (71.2)	2.111# (0.348)
	No	173 (82.0)	38 (18.0)		74 (35.1)	137 (64.9)	
	Not Sure	10 (83.3)	2 (16.7)		6 (50)	6 (50)	
Having someone who does BSE regularly.	Yes	99 (79.8)	25 (20.2)	0.282 (0.595)	52 (41.9)	72 (58.1)	5.573 (0.018)
	No	122 (77.2)	36 (22.8)		45 (28.5)	113 (71.5)	

#- Likelihood Ratio used *Continuity correction or Fisher's exact test applied

Table 3: Relationship between respondents' socio-demographic characteristics (and other variables) and knowledge of how to perform and the actual performance of BSE correctly

Factor/ Variable	Sub variables	**Knows how to perform BSE correctly n=282**		**χ2 (p value)**	**Performs BSE correctly n=159**		**χ2 (p value)**
		No n= 264 (%)	Yes n=18 (%)		No n=143 (%)	Yes n=16 (%)	
Age	15-19	184 (96.3)	7 (3.7)	7.318 (0.007)	95 (94.1)	6 (5.9)	5.199 (0.023)
	20-24	80 (87.9)	11 (12.1)		48 (82.8)	10 (17.2)	
College	CHS	132 (91.0)	13 (9.0)	3.331 (0.068)	71 (85.5)	12 (14.5)	3.706 (0.054)
	SET	132 (96.4)	5 (3.6)		72 (94.7)	4 (5.3)	
Father's educational Status n= 249/148	Low	68 (95.8)	3 (4.2)	0.562* (0.453)	42 (95.5)	2 (4.5)	1.363 (0.243)
	High	164 (92.1)	14 (7.9)		91 (87.5)	13 (12.5)	
Mother's educational Status n= 250/149	Low	80 (94.1)	5 (5.9)	0.171 (0.679)	48 (92.3)	4 (7.7)	0.176 (0.675)
	High	153 (92.7)	12 (7.3)		86 (88.7)	11 (11.3)	
Knowledge on breast CA aetiology	Poor	213 (96.4)	8 (3.6)	13.053 (0.001)	107 (94.7)	6 (5.3)	8.020 (0.005)
	Good	51 (83.6)	10 (16.4)		36 (78.3)	10 (21.7)	
Attitude towards BSE	Negative	97 (100.0)	0 (0.0)	10.081 (0.001)	46 (100.0)	0(0.0)	5.762* (0.016)
	Positive	167 (90.3)	18 (9.7)		97(85.8)	16(14.2)	
Knew/ knows person with CA Breast.	Yes	56 (94.9)	3 (5.1)	0.025* (0.873)	33(94.3)	2(5.7)	0.423* (0.305)
	No	208 (93.3)	15 (6.7)		110(88.7)	14(11.3)	
Having had info on breast CA e.g. enlightenment.	Yes	141 (92.8)	11 (7.2)	1.560# (0.458)	94(89.5)	11(10.5)	1.749# (0.417)
	No	113 (94.2)	7 (5.8)		41(89.1)	5(10.9)	
	Not Sure	10 (100.0)	0 (0.0)		8(100.0)	0(0.0)	
Ever had a clinical breast examination.	Yes	52 (88.1)	7 (11.9)	4.500# (0.105)	39(84.8)	7(15.2)	2.799# (0.247)
	No	200 (94.8)	11 (5.2)		98(91.6)	9(8.4)	
	Not Sure	12 (100.0)	0 (0.0)		6(100.0)	0(0.0)	
Knows a female who does BSE regularly	Yes	114 (91.9)	10 (8.9)	1.047 (0.306)	73(89.0)	9(11.0)	0.156 (0.693)
	No	150 (94.9)	8 (5.1)		70(90.9)	7(9.1)	

#- Likelihood Ratio used *Continuity correction or Fisher's exact test applied

TABLE 4: Logistic regression for the outcome variables and their possible predictors

Variables	**Sub-variables**	p-value	Odds Ratio	95% CI	
				Lower	Upper
"Knowledge on aetiology of breast cancer"					
Age group	Older Youths (reference)	0.002	0.409	0.230	0.728
Knows/ knew someone diagnosed with CA	Yes (reference)	0.029	2.801	1.113	7.047
Had been enlightened/ educated on breast CA	Not sure (reference)	0.001			
	Yes	0.146	4.770	0.580	39.246
	No	0.907	1.137	0.132	9.785
Had ever done a clinical breast examination	No (reference)	0.180			
		0.514	1.774	0.317	9.928
		0.968	0.967	0.183	5.109
"Attitude towards BSE"					
Knows/ knew someone diagnosed with CA	Yes (reference)	0.075	1.683	0.949	2.984
Had been enlightened/ educated on breast CA	Not sure (reference)	0.001			
	Yes	0.002	7.157	2.073	24.704
	No	0.124	2.620	.769	8.925
Knows someone who does BSE on a regular basis	Yes (reference)	0.213	1.361	.838	2.209
College	SET (reference)	0.231	1.330	.834	2.121
"Correctness of knowledge of performance of BSE"					
Age group	Older Youths (reference)	0.063	0.375	0.134	1.056
Knowledge of aetiology of breast cancer	Good (reference)	0.062	0.378	0.136	1.052
Attitude towards BSE	Positive (reference)	0.996	0.000	0.000	.
"actual performance of BSE"					

Age group	Older Youths (reference)	0.112	0.396	0.126	1.242
Knowledge of aetiology of breast cancer	Good (reference)	0.112	0.396	0.126	1.242
Attitude towards BSE	Positive (reference)	0.997	0.000	0.000	

In Table 4, four different logistic regression models were used to identify the possible predictors of the outcome variables: "Knowledge of aetiology of breast cancer", "attitude towards BSE", "correctness of knowledge of performance of BSE" and "actual performance of BSE". Concerning knowledge of aetiology of breast cancer, adolescents were found to be about two and a half times (AOR- 0.409) less likely to be knowledgeable about breast cancer compared to older youths while those who didn't know someone diagnosed with breast CA are about three times more likely (AOR- 2.801) to be knowledgeable about breast cancer than those who knew someone. With respect to attitude towards breast self-examination (BSE), those who had been enlightened/ educated on breast CA at one point in time or the other were about seven times more likely (AOR- 7.157) to have a positive attitude towards BSE than those who had not received such enlightenment.

Finally, in terms of "correctness of knowledge of performance of BSE" and "actual performance of BSE", none of the three variables considered showed any statistically significant relationship. No identifiable predictors could be determined possibly on account of the inadequate number of respondents for bivariate cross tabulations (as shown in Table 3 where the variable "attitude" had zero value in one cell each) and for the multivariate analysis too as shown in Table 4.

DISCUSSION:

Our study revealed that 282 (80.6%) of the study respondents had heard about BSE and this is in agreement with the finding of a study in Ethiopia [17]; with a slight majority (51.4%) coming from the College of Health Sciences. The health-related courses usually taught at the College of Health Sciences may be responsible for this. Respondents' sources of information on BSE were healthcare workers (leading source), social media, internet, family and friends, and the print media, with the following percentages, 40.1%, 28%, 27.7%, 22.3%, 21.3%, and 19.9% respectively. Our results were different from the finding of another study [18] where the social media were the main sources of information on BSE. However, health information obtained from social media may not be totally foolproof as many health-related write ups on social media are often not subjected to the required scrutiny.

With regard to the respondents' knowledge on the aetiology of breast cancer, only a small proportion, about one-fifth, (21.6%), had good knowledge, with the vast majority, 78. 6%, having poor knowledge; a finding contrary to that of an Ethiopian study in which a greater majority had good knowledge on the aetiology of breast

cancer [17]. This may not be surprising in this part of the world as many people, even among the elites associate diseases including cancers to spiritual attacks.

Concerning the performance of BSE among the respondents, it was found that 159 of the 282 (56.4%) had done BSE from among whom only 16 (10.1%) did it correctly and only 20 (12.6%) did it at the right time. Doing the BSE correctly and at the right time is crucial in order to obtain the much desired result.

Some of the findings of this study on breast cancer knowledge and BSE knowledge were in direct contrast with those of a Cameroonian study where the majority of their respondents (88.1%) had heard about breast cancer but less than half (47%) had heard about BSE [14]. A study from Ugandan revealed a different pattern from that of our study and the Cameroonian study. According to the descriptive study which examined breast cancer knowledge and BSE practices among female university students in Kampala, Uganda, most (98%) of the respondents had heard about breast cancer and majority (75%) had also heard about, and actually practiced BSE [15]. The pattern of results from a study carried out in Ethiopia was similar to that of Uganda but with lower figures for the considered parameters; in which case 85.6% of respondents had heard of breast cancer and 54.1% practiced BSE [17]. It may be difficult to explain the diverse results from these countries, but evidently Uganda and Ethiopia are from the same region of Africa while Cameroon and Nigeria that shared opposite pattern of results are neighboring countries. In Nigeria however, a previous study conducted among the general populace [16], mostly among rural dwellers reported a high level of breast cancer awareness (80.6%), and knowledge and practice of BSE was also high [60.1%]. This is a rather surprising result for a rural setting, although the respondents in this study are relatively older.

The significant common predictive factors for good knowledge on breast cancer and positive attitude to BSE from our study were: having known a person with breast cancer and having had information on breast cancer ($p < 0.05$). The other predictive factors for having a good knowledge of breast cancer were: belonging to the older youth's age bracket (20-24 years) and having ever had a clinical breast examination done. The other significant factors predictive of positive attitude to BSE included belonging to the College of Health Sciences and having someone who does BSE regularly. Religion, ethnicity and parents' educational status from the study did not play any significant roles concerning good knowledge on breast cancer and positive attitude to BSE by our studied students. Of importance from this study is strong association between having known a person (or persons) with breast cancer and positive attitude to BSE which was also reported by the Ethiopian study in which the P-value was 0.048 for similar attribute [17]. The memory created by the

experience could have been a driving force towards a positive attitude.

As expected, breast self-examination was done correctly by respondents in the older youth age bracket (12.1%), respondents with good knowledge of aetiology of breast cancer (16.4%) and respondents with positive attitude towards BSE (9.7%). The observed trend in this study was that adolescents were about two and a half times less likely to be knowledgeable about breast cancer than the older youths (AOR-0.409). As regards attitude toward BSE, those with prior education on breast cancer were seven times more likely to have positive attitude (AOR- 7.157).

Conclusion and Recommendations:

The study found a poor knowledge level of breast cancer aetiology among the respondents. Knowledge about breast self-examination was good, but the proportion of students that did it correctly was low. Having previously had information on BSE was associated with a positive attitude towards BSE, and more of the respondents belonging to the older youth age bracket showed positive attitude. We therefore recommend that sensitization trainings be conducted for the adolescents in the upper classes in high (secondary) schools, and universities too, where the risk factors for breast cancer, and measures to reduce the risks, especially the modifiable ones and promote early detection (including SBE) are communicated. Young girls should also be taught on how to correctly carry out BSE, and this should be a continual and regular exercise.

REFERENCES:

1. Phaswana-Mafuya N, Peltzer K. Breast and cervical cancer screening prevalence and associated factors among women in the South African general population. Asian Pacific Journal of Cancer Prevention. 2018;19 (6):1465–1470. doi:10.22034/APJCP.2018.19.6.1465
2. Ferlay, J., Soerjomataram, I., Dikshit, R.P., Eser, S., Mathers, C.D., Rebelo, M.S., Parkin, D.M., Forman, D., Bray, F. (2015). Cancer incidence and mortality worldwide: Sources, methods and major patterns in GLOBOCAN 2012. Int J Cancer. 2015; 136 (5):E359–86.
3. Baba, I. A., Hincal, E. Cancer Incidence in Nigeria and Border Countries. Malaysian Journal of Medical and Biological Research, 2018; 5(1), 7-12. https://doi.org/10.18034/mjmbr.v5i1.442.
4. 4 Balogun OD, Formenti SC. Locally advanced breast cancer - strategies for developing nations. Front Oncol. 2015;5:89.
5. International Agency for Research on Cancer: GLOBOCAN 2018. Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2018. https://doi.org/10.3322/caac.21492 .
6. Stuckey A (2011). Breast cancer: epidemiology and risk factors. Clin Obstet Gynecol. 54(1):96–102.http://dx.doi.org/10.1097/GRF.0b013e318 2080056 PMID:21278508
7. Lauby-Secretan, B., Scoccianti, C., Loomis, D., Benbrahim-Tallaa, L., Bouvard, V., Bianchini, F., Straif, K., & International Agency for Research on Cancer Handbook Working Group (). Breast-cancer screening--viewpoint of the IARC Working Group. The New England journal of medicine. 2015; 372(24): 2353–2358. https://doi.org/10.1056/NEJMsr1504363
8. Colditz GA & Bohlke K (2014). Priorities for the primary prevention of breast cancer. CA Cancer JClin.64(3):186http://dx.doi.org/10.3322/caac.2 1225 PMID:24647877.
9. Zendehdel M, Niakan B, Keshtkar A, Rafiei E, Salamat F. Subtypes of Benign Breast Disease as a Risk Factor for Breast Cancer: A Systematic Review and Meta-Analysis Protocol. Iran J Med Sci. 2018; 43(1):1–8.
10. Amoo EO, Olawole-Isaac A, Okorie N, Ajayi MP, Adekola PO, Amana TR, Olu-Owolabi F. Spousal desertion and coping strategies among women with cervical cancer in Nigeria: a schematic framework for wellbeing. African Population Studies. 2018; 32(1) (Supp.): 1-10. http://aps.journals.ac.za/pub/article/view/1172.

11. Olasehinde O, Boutin-Foster C, Alatise OI, Adisa AO, Lawal OO, Akinkuolie AA, Adesunkanmi AR, Arije OO, Kingham TP. Developing a breast cancer screening program in Nigeria: evaluating current practices, perceptions, and possible barriers. Journal of global oncology. 2017;3(5):490–6. https://doi.org/10.1200/JGO.2016.007641 PMid:29094087 PMCid:PMC5646896.
12. Abate S, Yilma Z, Assefa M, Tigeneh W. Trends of breast cancer in Ethiopia. Int J Cancer Res Mol Mech. 2016; 2:1–5.
13. Segni MT, Tadesse DM, Amdemichael R, Demissie HF. Breast self-examination: knowledge, attitude, and practice among female health science students at Adama science and technology university, Ethiopia. Gynecol Obstet (Sunnyvale) 2016; 6:368.
14. Sama, C. B., Dzekem, B., Kehbila, J., Ekabe, C. J., Vofo, B., Abua, N. L., Dingana, T. N., Angwafo, F. Awareness of breast cancer and breast self-examination among female undergraduate students in a higher teachers training college in Cameroon. The Pan African medical journal, 2017; 28, 91. https://doi.org/10.11604/pamj.2017.28.91.1098
15. Godfrey K, Agatha T, Nankumbi J. Breast Cancer Knowledge and Breast Self-Examination Practices among Female University Students in Kampala, Uganda: A Descriptive Study. Oman Med J. 2016;31(2):129-134. doi:10.5001/omj.2016.25.
16. Olayide AS, Halimat AJ, Samuel OA, Ganiyu RA, Soliu OA. Level of Awareness and Knowledge of Breast Cancer in Nigeria. A Systematic Review. Ethiop J Health Sci. 2017;27(2):163-174. doi:10.4314/ejhs.v27i2.9.
17. Tewabe T, Mekuria Z. Knowledge and practice of breast self-examination among undergraduate students in Bahir Dar University, North-West Ethiopia, 2016: A cross-sectional study. J Public Health Afr. 2019;10(1):805. doi:10.4081/jphia.2019.805.
18. Rahman SA, Al-Marzouki A, Otim M, Khalil Khayat NEH, Yousuf R, Rahman P. Awareness about Breast Cancer and Breast Self-Examination among Female Students at the University of Sharjah: A Cross-Sectional Study. Asian Pac J Cancer Prev. 2019;20(6):1901-1908. doi:10.31557/APJCP.2019.20.6.1901.