Knowledge of Breast Self – Examination among Females Students in Sudan International University /2020 – 2021

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Abstract— The study assess the knowledge of females students about breast self-examination and compare this knowledge between medical and non-medical students at Sudan International University. An observational descriptive analytical cross sectional study which was conducted among first and second levels medical and non-medical females students in period from June 2020 to December 2020. The data were collected through a structured questionnaire filled out by female students with informed consent. The data was analyzed using SPSS version 20. This study included 200 females students, consist of 100 (50%) from medical colleges and 100 (50%) from non-medical colleges, the majority of whom were between 18 and 23 years of age. Results revealed that majority have information about breast self-examination (BSE). Eighty nine percent (95%)of medical students and 66% of non-medical students were aware about BSE (p.value0.00) Regarding their source of information about (BSE) 49% from media, 34% from school and 16% from other sources in medical students group , while in the non-medical students group 31% received their information from media , 14% from school and 53% from other sources Among the participating students about 83% of medical colleges and 76% of non-medical students(p. value=0.01) had good knowledge about the importance of breast self-examination as a method of early detection of breast cancer. The study found that the majority of the females students of medical and non-medical colleges at The Sudan International University have good knowledge about the breast self-examination. And the students of medical colleges have more knowledge than the students of non-medical colleges.

Keywords— Breast self-examination- females medical students-university.

I. INTRODUCTION

Breast cancer is the second leading cause of cancer deaths in women and poses a global public health concern. There is an increased burden of breast cancer in both developed and developing countries including sudan.[1,2] Globally, over one million breast cancer cases are diagnosed annually.[1] In Africa now had the highest age standardized breast cancer mortality rate at global level with highest incidence reported with sub-saharan region. The crude incidence of breast cancer from population base registries was found to be 24.5 per 100.000 person per year ,it is higher in North Africa than other area.[3,4] It is estimated that about half (60%) of breast cancer deaths occur in low economic developing countries.[4] The incidence

of breast cancer in Sudan is unknown. The national population based cancer registry(NCR) was established in 2009 in Sudan .During 2009-2010 about 6771 new diagnosed cases was registered in which 53.8% were women and breast cancer was the common cancer among women[5] . The incidence of breast cancer in Africa in 2018 ranged from 27.9/100,000 in Central Africa to 48.9/100,000 in Northern Africa, with a corresponding mortality of 15.8%–18.4%, respectively.[6] although reports showed that breast cancer is the third most common cancer among women with a low five-year survival, This is attributed to breast cancer being an invasive and aggressive disease and is associated with a poorer prognosis in older women.[7] The 5 year survival rate was found to be74% for early cases and 39% for advanced disease [8] It has been reported that most patients with breast cancer in developing countries presented for the first time at advanced stages (III and IV).[9] This is possibly due to lack of early detection of the disease. The diagnosis of breast cancer during the early stage has been linked to a reduction in mortality, morbidity, and cost of management of the illness.[10] This indicates a need for increased community awareness of methods for the early detection of the disease. Early detection is usually done through screening, and screening methods include breast self examination (BSE), clinical breast examination (CBE), and mammography.[11] Due to fewer number of experts and lack of advanced diagnostic techniques in developing countries, promoting regular BSE has been said to be the feasible screening option for early detection of breast cancer.[12] However, its practice is dependent on knowledge and attitude toward breast cancer and BSE among women.[13] Numerous studies have indicated the need for conducting more research on breast cancer knowledge, screening practices, and factors such as lifestyle changes to address the increasing morbidity and mortality rates.[14] Such studies should be extended to females university students to strengthen BSE behaviors and practice to reduce breast cancer-related deaths in women under the age of 35.[15]

This study was carried to assess the knowledge regarding breast self-examination among females students at Sudan international university.

II. METHODOLOGY & MATERIAL

Study Area/Setting

This study was conducted at Sudan international university which is one of biggest private university in Sudan, has many colleges as medicine, pharmacy, nursing and other disciplines, it receives students from different nationalities and has unique well trained staff. It located at centre of Khartoum state

Study Design

This is a descriptive analytic cross sectional study.

Study Duration

The study was done within period from june to december 2020

Study Population

Sudan international university female students.

Inclusion Criteria

Inclusion criteria for this study included medical and non-medical female students, first and second grades.

Exclusion Criteria

Female students in other grades rather than that included in the study, and students who refused to participated in the study.

Sample Size

Sample size was determined according to the formula below:

$$n = \frac{N}{(1 + Nd^2)}$$

n: sample size
n=200

Random sampling was used to collected data.

Tools of Data Collection

Data was collected by using structured questionnaires. The questionnaire consist of dichotomous variables in term of yes or no and partial categorized questions expressed as agree, strongly agree, neutral, disagree, strongly disagree. The first part composed of personal information as age, type of college, grade of education, family history of breast cancer etc., other part included knowledge about breast cancer, source of information among medical and non-medical females students, the remaining questions about knowledge self-breast examination and as a useful tool for early detection of breast cancer, time when to start BSE, and family history of breast cancer.

The questionnaire was self-administered and filled out by participants.

Data Analysis

Data was analyzed using scientific package of social science (SPSS) software version 20.p.value of 0.05 was set as test of significance.

Data Presentation

The data was presented in forms of table and figures.

Ethical Consideration

Approval from university ethical committee and informed consent was obtained from participant after explanation of purpose of study.

A participant has right to with draw at any time without any deprivation.

A participant has right to no harm, privacy and confidentiality was insured.

A participant has right to benefits from researcher knowledge and skills

III. RESULT

This is a descriptive analytic cross sectional study carried at Sudan international university Khartoum state, Sudan. The study recruited 200 student, 100 of them were medical students and 100 were non-medical students. Table 1 showed that one Percent (1%) of the study participants were less than 18 years, 81% were 18-23years and 18% were more than 23 years old. About 86% of the study participants were single, while 14 % were married, of them 64.2% had children as shown in table 2. Regarding the age of menarche, 44% of medical students had menarche at 13 years, while 53% of non-medical students had menarche at more than 13 years of age as seen in table 3.

Knowledge of Breast Cancer/Breast self-examination (BSE)

Table 4 revealed the knowledge about breast cancer, the majority of the study groups heard about it about 48.5% of medical and 47.5% of non-medical students (p. value=0.34). According to the results information about breast self-examination (BSE) about 42%of medical students and 24%% of non-medical students had heard about BSE (p.value0.00). Regarding their source of information 47% from school in medical students, 4 4% from media, 8% other source, while in non-medical students 29% from school, 46% from media, 24% other source (figure 1).

Knowledge of BSE as Useful Tool for Early Detection of Breast Cancer

Concerning BSE as a useful tool for early detection of breast cancer 41.5% said yes of medical student and 38% of non-medical students (p. value=0.01). The majority of study population agreed that BSE observe unusual changes in the size and shape of breast, 40.5% and 39% in medical and non-medical students respectively (p. value=0.01). BSE is helpful in early detection of breast cancer & any abnormal changes about 16.5% of medical students agree and16.5% strongly agree, 4.0% neutral,10% % strongly disagree, 19%agree while in non-medical students, 19.% 5 strongly agree, 8% neutral and 3% disagree (p. value=0.00). Concerning age at the beginning of the (BSE) about 14.5% of medical group said from puberty, 20.5% from the age of twenty, 15% has no idea, while 15.5% of non-medical students from puberty, 9% from age of twenty, and still 25.5% had no idea when to start BSE(p .value=0.00). About 81% of medical student and 69% of non-medical student they said yes that breast cancer is the commonest cancer affecting women at age 20 and above.

Family History of Breast Cancer

Nearly 20% of medical students had family history of breast cancer while 23% of non-medical students had family history of breast cancer .Regarding the distribution of family member with breast cancer, in the medical students group 25% were first degree relative, while 19% were second degree relative and 56% were others. While in the non-medical students group were14% first degree relative, 71% were second degree relative and 15% were others.

Table (1): Age of participants

	Medical		Non-medical	
	Frequency	*Percent*	*Frequency*	*Percent*
less than 18	1	1%	1	1%
18-23	70	70%	92	92%
More than 23	29	29%	7	7%
Total	100	100%	100	100%

Table (2): Marital status of participants

	Medical		Non-medical	
	Frequency	*Percent*	*Frequency*	*Percent*
Single	79	79%	93	93%
Married	21	21%	7	7%
Total	100	100%	100	100%

Table (3): Married With kids

	Medical		Non-medical	
	Frequency	*Percent*	*Frequency*	*Percent*
Yes	*18*	*18%*	*5*	*5%*
No	*82*	*82%*	*95*	*95%*
Total	*100*	*100%*	*100*	*100%*

Table (3): Age of Menarche

	Medical		Non-medical	
	Frequency	*Percent*	*Frequency*	*Percent*
At 13 years	*44*	*44%*	*37*	*37%*
Less than 13 years	*26*	*26%*	*10*	*10%*
More than 13 years	*30*	*30%*	*53*	*53%*
Total	*100*	*100%*	*100*	*100%*

Table (4):Do you heard about breast cancer

Faculty	Do you heard about breast cancer		Total
	Yes	No	
Medical	97	3	100
	48.5%	1.5%	50.0%
Non-medical	95	5	100
	47.5%	2.5%	50.0%
Total	192	8	200
	96.0%	4.0%	100.0%

P-value = 0.36

Table (5): Do you have any information about breast self-examination?

Faculty	Do you have any information about breast self-examination?		Total
	Yes	No	
Medical	84	16	100
	42.0%	8.0%	50.0%
Non-medical	48	52	100
	24.0%	26.0%	50.0%
Total	132	68	200
	66.0%	34.0%	100.0%

P-value = 0.00

Table (6): Do you know that BSE is a useful tool for early detection of breast cancer

Faculty	Do you know that BSE is a useful tool for early detection of breast cancer		Total
	Yes	No	
Medical	83	17	100
	41.5%	8.5%	50.0%
Non-medical	76	24	100
	38.0%	12.0%	50.0%
Total	159	41	200
	79.5%	20.5%	100.0%

P-value = 0.01

Table (7): do you know BSE Need to observe any unusual changes in the size and shape of breast?

Faculty	Do you know BSE Need to observe any un usual changes in the size and shape of breast?			Total
	Yes	No	Other	
Medical	81	14	5	100
	40.5%	7.0%	2.5%	50.0%
Non-medical	78	6	16	100
	39.0%	3.0%	8.0%	50.0%
Total	159	20	21	200
	79.5%	10.0%	10.5%	100.0%

P-value = 0.01

Table (8): The BSE is helpful in early detection of breast cancer & any abnormal changes in the breast?

Faculty	The BSE is helpful in early detection of breast cancer & any abnormal changes in the breast?					Total
	Agree	Disagree	Neutral	Strongly agree	Strongly disagree	
Medical	33	6	8	33	20	100
	16.5%	3.0%	4.0%	16.5%	10.0%	50.0%
Non-medical	38	6	17	39	0	100
	19.0%	3.0%	8.5%	19.5%	.0%	50.0%
Total	71	12	25	72	20	200
	35.5%	6.0%	12.5%	36.0%	10.0%	100.0%

P-value = 0.00

Table (9): At what age should BSE be started?

Faculty	At what age should BSE be started?			Total
	From puberty	From 20 years	No idea	
Medical	29	41	30	100
	14.5%	20.5%	15.0%	50.0%
Non-medical	31	18	51	100
	15.5%	9.0%	25.5%	50.0%
Total	60	59	81	200
	30.0%	29.5%	40.5%	100.0%

P-value = 0.00

IV. DISCUSSION

Breast cancer prevalence is dramatically increasing every year and both mortality and morbidity of the disease as well, for this reason early detection of breast cancer or any change in breast which improves the prognosis. Breast cancer awareness and regular practice of BSE facilitate early detection of breast cancer, which improves the chances of survival and better health outcomes. Few studies have investigated knowledge about breast cancer and BSE in female university student.
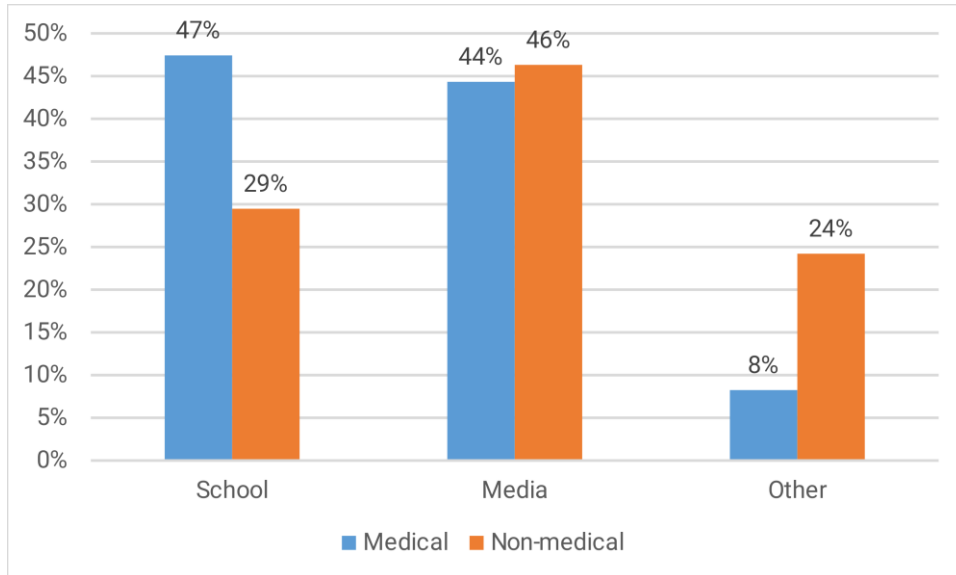
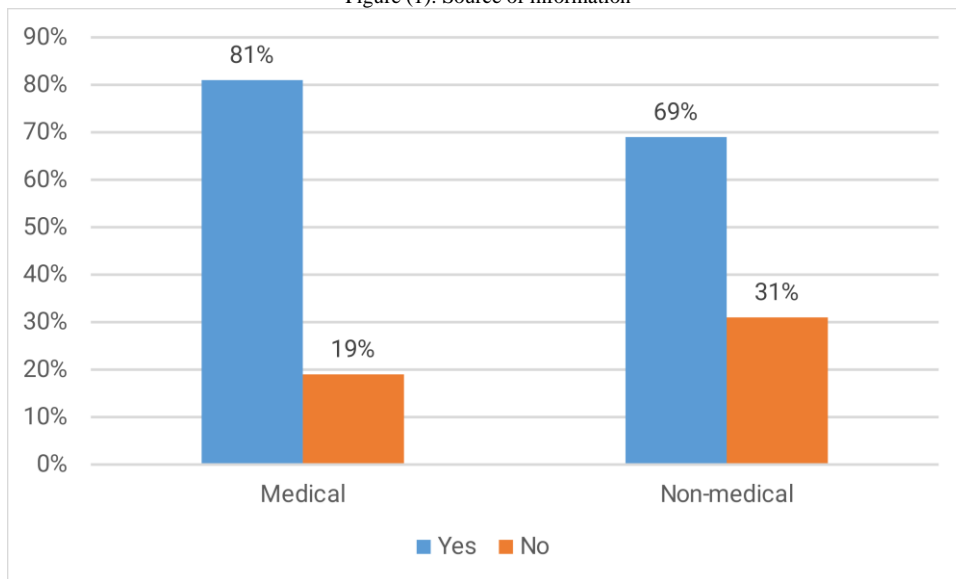Figure (1): Source of information

Figure (2): Breast cancer is one of the commonest cancer which affecting women from age 20 years
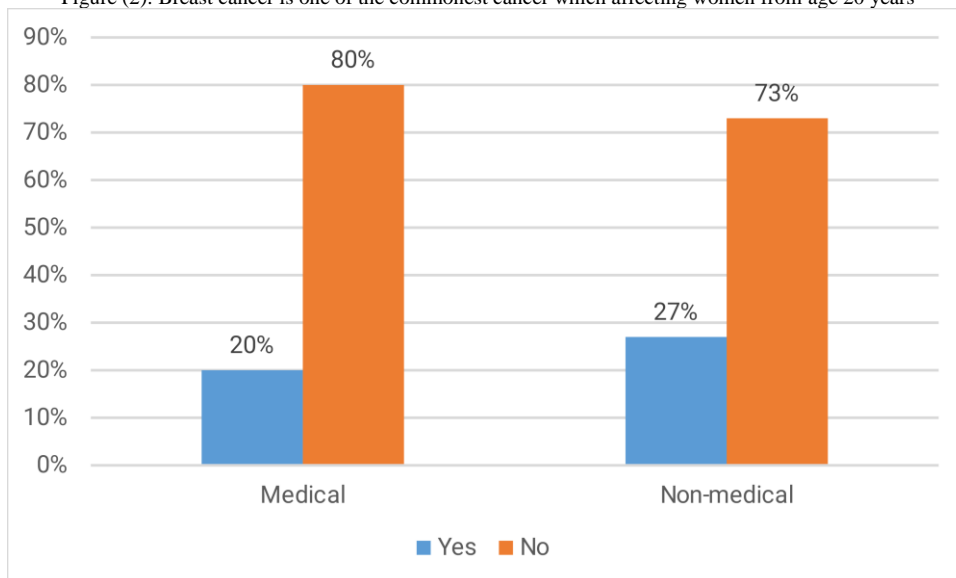

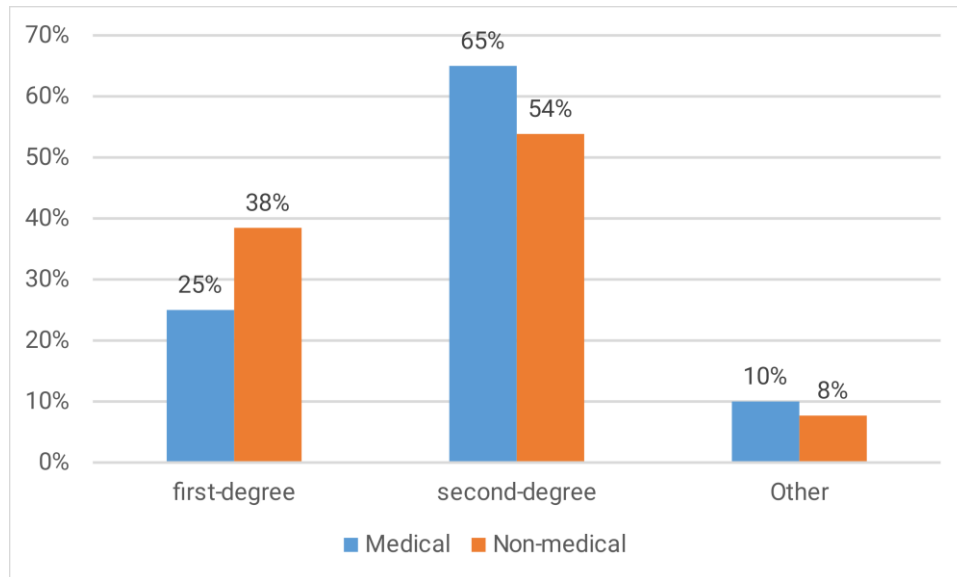Figure (3): Family history of breast cancer in study population

66

Figure (4): Degree of Family member with breast cancer

In our study, the majority of the study group heard about breast cancer including medical and non-medical students. Regarding the source of their information, the majority received the information from media in both groups, also received it from school as well, This finding was consistent with a study conducted among female students at the University of Sharjah we found that most participants (99%) had heard of breast cancer and 68.5% heard about BSE, source of information 40.2% from T.V and 74.7% from social media. [16]. This finding also similarly to study conducted among female students in Egypt that showed mass media (TV and radio) was the main sources of information about breast cancer for 89.1% of participants (Boulos and Ghali, 2014)[17]. Similarly, a study in Yemen reported mass media was the main source of information for 81.6% of participants (Ahmed, 2010)[18]. This may be explained by the similar levels of mobile technology penetration in Egypt, Yemen, UAE and the Sudan.

In our study Regarding lump is an early sign of breast cancer majority of student said yes this was consistent with the study showed "breast lump" was the most commonly identified warning sign/symptom [18].

BSE is helpful in early detection of breast cancer & any abnormal changes the most students from medical and non-medical agree and strongly agree ,and less than half strongly disagree while few neutral .

The importance of this study to compare the awareness of breast self-examination in medical and non-medical students, according to the results the majority were aware about breast self-examination (BSE) but the medical student more awareness than the non-medical, that similar to study at sharijah university student reported that students from the Medical campus were more knowledgeable than those from the other two campuses[16].

While most of female medical student thought that BST is useful tool for early detection of breast lump similar to study performed in Beuo showed 63.3% of students consider BSE is method for early detection of breast lump[19]

Awareness about BSE was high which is similar to study in Abuja[20]

The knowledge of medical students about BSE was high in contrast to study performed at Majmah university in Saudi Arabia which was founded low only 37.6% among medical students.[21]

V.   CONCLUSION

We found that the level of awareness about breast cancer and BSE varied among medical and non-medical female students, the result showed that the majority has good awareness about BSE although the medical student were more aware than non-medical.

Recommendation

1 -To raised awareness of breast cancer among undergraduate students
2 -To conduct training session to perform and practice BSE among all female students

LIST OF ABBREVIATIONS

BC	Breast cancer
BSE	breast self-examination
CBE	clinical breast examination
DCIS	Ductal carcinoma in situ
LCIS	Lobular carcinoma in situ
OMH	Omdurman Maternity Hospital
SPSS	Scientific Package of Social Science
SIU	Sudan international university

REFERENCES

[1] Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. Int J Cancer 2015. Mar;136(5):E359-E386. 10.1002/ijc.29210 [PubMed] [CrossRef] [Google Scholar]

[2] Parkin DM, Nambooze S, Wabwire-Mangen F, Wabinga HR. Changing cancer incidence in Kampala, Uganda, 1991-2006. Int J Cancer 2010. Mar;126(5):1187-1195. 10.1002/ijc.24838 [PubMed] [CrossRef] [Google Scholar]

[3] Azubuike SO, Muirhead C, Hayes L, McNally R. Rising global burden of breast cancer: the case of sub-Saharan Africa (with emphasis on Nigeria) and implications for regional development: a review. World journal of surgical oncology. 2018 Dec;16(1):1-3.

[4] Adeloye D, Sowunmi OY, Jacobs W, David RA, Adeosun AA, Amuta AO, Misra S, Gadanya M, Auta A, Harhay MO, Chan KY. Estimating the incidence of breast cancer in Africa: a systematic review and meta-analysis. Journal of global health. 2018 Jun;8(1).

[5] Saeed IE, Weng HY, Mohamed KH, Mohammed SI. Cancer incidence in Khartoum, Sudan: first results from the Cancer Registry, 2009–2010. Cancer medicine. 2014 Aug;3(4):1075-84.

[6] Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. CA Cancer J Clin 2011. Mar-Apr;61(2):69-90. 10.3322/caac.20107 [PubMed] [CrossRef] [Google Scholar]

[7] .International Agency for Research on Cancer: GLOBOCAN 2018. Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2018. [Last accessed on 2019 Sep 04]. Available from: https://doi.org/10.3322/caac.21492 .

[8] Gakwaya A, Kigula-Mugambe JB, Kavuma A, Luwaga A, Fualal J, Jombwe J, et al. Cancer of the breast: 5-year survival in a tertiary hospital in Uganda. Br J Cancer 2008. Jul;99(1):63-67. 10.1038/sj.bjc.6604435 [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[9] Ströbele L, Kantelhardt EJ, Traoré Millogo TFD, Sarigda M, Wacker J, Grosse Frie K. Prevalence of breast-related symptoms, health care seeking behaviour and diagnostic needs among women in Burkina Faso. BMC Public Health. 2018;18:447. [PMC free article] [PubMed] [Google Scholar]

[10] Rue M, Vilaprinyo E, Lee S, Martinez-Alonso M, Carles M, Marcos-Gragera R, Pla R, Espinas JA. Effectiveness of early detection on breast cancer mortality reduction in Catalonia (Spain). BMC cancer. 2009 Dec;9(1):1-0.

[11] Tavafian SS, Hasani L, Aghamolaei T, Zare S, Gregory D. Prediction of breast self-examination in a sample of Iranian women: An application of the health belief model. BMC Womens Health. 2009;9:37. [PMC free article] [PubMed] [Google Scholar]

[12] Obaji N, Elom H, Agwu U, Nwigwe C, Ezeonu P, Umeora O. Awareness and practice of breast self-examination among market women in Abakaliki, South East Nigeria. Ann Med Health Sci Res. 2013;3:7–12. [PMC free article] [PubMed] [Google Scholar]

[13] Abate S, Yilma Z, Assefa M, Tigeneh W. Trends of breast cancer in Ethiopia. Int J Cancer Res Mol Mech. 2016;2:1–5. [Google Scholar]

[14] Dündar PE, Ozmen D, Oztürk B, Haspolat G, Akyildiz F, Coban S, et al. The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in Western Turkey. BMC Cancer. 2006;6:43. [PMC free article] [PubMed] [

[15] Sama CB, Dzekem B, Kehbila J, Ekabe CJ, Vofo B, Abua NL, Dingana TN, Angwafo III F. Awareness of breast cancer and breast self-examination among female undergraduate students in a higher teachers training college in Cameroon. Pan African Medical Journal. 2017;28(1):164.

[16] Awareness about Breast Cancer and Breast Self-Examination among Female Students at the University of Sharjah: A Cross-Sectional Study Syed Azizur Rahman1 *, Amina Al–Marzouki1 , Michael Otim1 , Nour El Hoda Khalil Khayat1 , Reham Yousef1 , Prama Rahman

[17] Boulos DN, Ghali RR (2014). Awareness of breast cancer among female students at Ain Shams University, Egypt. Glob J Health Sci, 6, 154.

[18] Ahmed BA (2010). Awareness and practice of breast cancer and breast self-examination among university students in Yemen. Asian Pac J Cancer Prev, 11, 101-5

[19] Nde FP, Assob JC, Kwenti TE, Njunda AL, Tainenbe TR. Knowledge, attitude and practice of breast self-examination among female undergraduate students in the University of Buea. BMC research notes. 2015 Dec;8(1):1-6.

[20] Isara AR, Ojedokun CI. Knowledge of breast cancer and practice of breast self examination among female senior secondary school students in Abuja, Nigeria. J prev med hyg. 2011 Dec 1;52(4):186-90.

[21] Mohamed EY, Sami W, Alenezi AA, Almutairi AM, Alsalboud AK, Alhusainy KM, Almutairi MA, Ahmed SM, Medani KA, Al Mansour MA, Alzahrani MK. Breast cancer awareness and breast self-examination among future female university graduates: comparison between medical and non-medical students. Int J Res Med Sci. 2016 Mar;4(3):685-9.

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