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Research Article

Assessments of the Prevalence and Associated Factors Breast Self-Examination among Female Students in Wollo University, North East Ethiopia, 2021

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ABSTRACT

Background: Breast self-examination is one of the cheapest breast cancer screening tools. This is important to initiate early breast cancer detection by them.

Purpose: To assess prevalence and associated factors of breast self-examination among regular female students in Wollo University, Ethiopia, 2021

Methods: Cross-sectional study was conducted among 630 female students in Wollo University from Mar 16 to April 16, 2021 by using simple random sampling technique. Epi-Data version 4.6 were used to enter the data and exported to SPSS version 25 for analyses. Binary and multiple logistic regressions were used to associate between dependent and independent variables

Results: 610 (96.8%) participants were participated during study period. This study showed that [16.4% (95% CI, 14.9-17.9)] were applied breast self-examination. This finding revealed that family history of breast cancer [AOR= 28.4; 95%CI (13.04-61.86), knowledge about breast self-examination [AOR=6.08; 95%CI (3.26-11.34) and attitude towards BSE [AOR=4.19; 95%CI (1.97- 8.92)] were significantly associated with Breast self-examination.

Conclusion: The prevalence of Breast self-examination among female students in Wollo University was 16.4%. Therefore, this finding suggests that early diagnosis of breast cancer by promote the level of attitude and knowledge regarding to breast self-examination.

Keywords: Breast self-examination, Wollo university, Ethiopia

INTRODUCTION

Breast cancer is characterized by the uncontrolled growth of abnormal cells in the milk producing glands of the breast. It is a public health problem and attacks women in their most productive years of life but breast cancer can be cured with limited resources if detected early [1-3].

Implementation of the preventive measures has been acknowledged as the main tool in the fight against breast cancer worldwide. Globally, breast self-examination (BSE), clinical breast examination (CBE) and mammography is the recommended screening test for early detection of breast cancer. Due to lack of access to diagnostic facilities, especially for women in low resource settings, it is essential to empower them with BSE as a primary modality for screening [4].

BSE is a process whereby women examine their breasts regularly to detect any abnormal swelling or lumps in order to seek prompt medical attention [5]. Though it is the easiest method of detection, it also the least precise. BSE consists of two basic steps tactile and visual examination of the breast [6]. As compared to clinical breast examination and mammography which require hospital visit, specialized equipment and technical expertise whereas BSE is helpful in the regard that it is cost-free, simple, non-invasive intervention carried out by women themselves [7,8]. Johns Hopkins Medical centre states, Forty percent of diagnosed breast cancers are

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detected by women who feel a lump, so establishing a regular BSE is very important to prevent breast cancer [9].

BSE carried out once monthly, between the 7th and 10th day of the menstrual cycle goes a long way in detecting breast cancer at the early stages of growth cancer cells [5]. BSE is an important, cheap and easy method for early diagnosis of breast cancer. Early diagnosis of breast cancer has a positive effect on the prognosis as well as limits the development of complications and disability. Despite the advent of modern screening methods, more than 90% of cases of cancers of the breast are detected by women themselves stressing the importance of breast self-examination [10,11]. Cancer is the second leading cause of death globally, and is responsible for an estimated 9.6 million deaths in 2018. Globally, about 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur in low- and middle-income countries. Breast cancer is the most common cancer and the leading cause of cancer death for women which accounts for 2.09 million cases globally [12-16]. Studies done in Nigeria and Egypt showed that 99% and 38.1% of the participants had ever performed BSE however, only 9% and 12.6% of them carried it out monthly[17,18]. Studies done in Ethiopia indicate that it varies from 21.4% to 71.2% [9,13,19,20].

WHO recommended three integrated elements of public health strategies to improve early diagnosis of breast cancer: strengthening health through awareness campaigns like multimedia campaign and dedicated telephone line to increase awareness about breast cancer to orient women for care how to promoted early identification of symptoms using a good BSE technique [13]. Therefore, this study will explore the practice and associated factors of BSE among female undergraduate students in Wollo University.

METHODS AND MATERIALS

Study period and setting

This study was conducted from February 16 to March 16/2021 at Wollo University. Wollo University. Wollo University is an engaged in the provision of all-round education, research, training, and community service through its diversified areas of academic programs. Currently the university has 28,219 students 19,237 (68.2%) males and 8,982 (31.8%) females. Undergraduate regular female students by the year 2020/21 were 1940 in Dessie campus and 1104 Kombolcha campus [21-26].

Study design

Institution based cross sectional study was employed among undergraduate regular female students in Wollo University, 2021.

Source of population

All regular undergraduate female students of Wollo University.

Study population

Selected regular undergraduate female students of Wollo University.

Inclusion criteria

All undergraduate regular female students of Wollo University found during data collection period.

Exclusion criteria

Participants who are critically ill and not voluntary to respond during the study period.

Sample size determination

The sample size was determined using single population proportion formula by taking "p" proportion of Self Breast- Examination 54.1% from study done among undergraduate female Students in Bahir Dar University [24] confidence level of 95%, 5% margin of error, Add 10% non-response rate, n=630.

Sampling procedure

Initially type of departments and students list of registration were gotten from the university registrar office of each campus. Then because of variation in knowledge towards breast self-examination the students were divided into two strata (health related department and another department). Twenty-two departments (six from Health-related departments and sixteen from other departments) were selected using lottery method. Finally, samples were selected from student registration list and collected from their respective class room through their ID number.

Study variables

- Dependent Variable
- Practice of Self Breast Examination
- Independent Variables

Socio-demographic status: Educational status, Marital Status, Age, Sex, Residence and Occupation.

Attitude toward BSE practice

Knowledge towards breast self-examination: Knowledge of BSE advantage, starting age, frequency, timing, position and technique.

History of breast cancer: Family history of breast cancer and history of breast cancer of the participants.

Operational Definitions

Breast self-examination practice: BSE is performed at least each month at the same time or after a week of menstrual cycle [25].

Knowledge towards breast self-examination: was assessed through 10 items on breast Self-examination. Respondents who score above or equal to the mean value was considered as Good knowledge. Respondents who score less than to the mean value was considered as poor knowledge [25].

Attitude towards breast self-examination: was assessed through 6 questions and Respondents who scored above or equal the mean value was considered as having favorable while those who scored below to the mean value was considered as having unfavorable attitude [25].

Data quality control

A structured self-administered questionnaire was prepared in English by adopting from various studies [9, 12, 20, 25]. Then it translated into the local language Amharic. Finally, it will be translated back to English in order to ensure its consistency of the questioner.

Questionnaire was pre-tested on 32 undergraduate female students of Woldia University. Adequate orientation for data collector and study participant were provided about the objective and data collection procedures of the research.

Data processing and analysis

After checking completeness of questionnaire, data was coded and entered into Epi-Data version 4.6 then exported to SPSS version 25 for analyses. Frequency, percentage, median and inter quartile range were computed using descriptive statistics. To identify statistically significantly associated factors bi-variable logistic regression analysis was done for each independent variable. Those variables with P-value less than 0.2 in bi-variable analysis were exported to final model. Then multivariable logistic regression was performed and variable with p value ≤ 0.05 considered as significant factors with the outcome variable.

Ethical consideration

Ethical clearance was obtained from Ethical Review committee of Wollo University, College Medicine and Health sciences research office. For any of the eligible study participant the purpose, benefits, confidential nature and right of withdrawal the questionnaire were described and discussed. For confidentiality and privacy of participants their name and identification number did not recorded on the questionnaire.

RESULTS

Socio-demographic and economic status of the respondents

From a total of 630 participants required, 610(96.8%) female students were involved in the study. The mean age of the participants was 22.26 (± 2.72 of SD) and 378(62.0%) were in the age range of 20–24 years. Majority of study participants 413(67.0%) were non health department (Table 1).

Family history of breast cancer

From the total number of study participants 72 (11.8%) participants have family history of breast cancer and 61 (84.72%) of them had breast cancer (Figure 1).

Attitude towards BSE among female of Wollo University students

More than half of the study participants, 330 (54.1%) had favorable attitude towards BSE. The highest number of study participants 517 (84.8%) approved that they want to discuss on BSE with health professionals. Around two-third of the study subjects 401 (65.74%) believed that doing BSE monthly helps to get lump earlier (Table 2).

Table 1. Socio-demographic characteristics among regular female students in Wollo University.

Variables		BSE practice		Total (%)
		Yes	No	
Age group (years)	<19 years	18(3.0%)	89(14.5%)	107 (17.5)
	20-24 years	66(10.8%)	312(51.2%)	378 (62.0)
	>25 years	16(2.6%)	109(17.9%)	125 (20.5)
	Mean age (SD)	22.26 (±2.72) year		
Department	Health science	29(4.8%)	168(27.5%)	197 (32.3)
	Non Health	71(11.6%)	342(56.1%)	413 (67.7)
Year of study	First year	23(3.8%)	102(16.7%)	125 (20.5)
	Second year	29(4.8%)	145(23.8%)	174 (28.5)
	Third year	20(3.3%)	106(17.4%)	126 (20.7)
	Fourth year	17(2.8%)	125(20.5%)	142 (23.3)
	Fifth year	11(1.8)	32(5.2%)	43 (7.0)
Resident	Urban	50(8.2%)	224(36.7%)	274 (44.9)
	Rural	50(8.2%)	286(46.9%)	336 (55.1)
Income	<1200EB	13(2.1%)	69(11.3%)	82 (13.4)
	1201-3500EB	36(5.9%)	190(31.1%)	226 (37.0)
	>3500EB	51(8.4%)	251(41.1%)	302 (49.5)

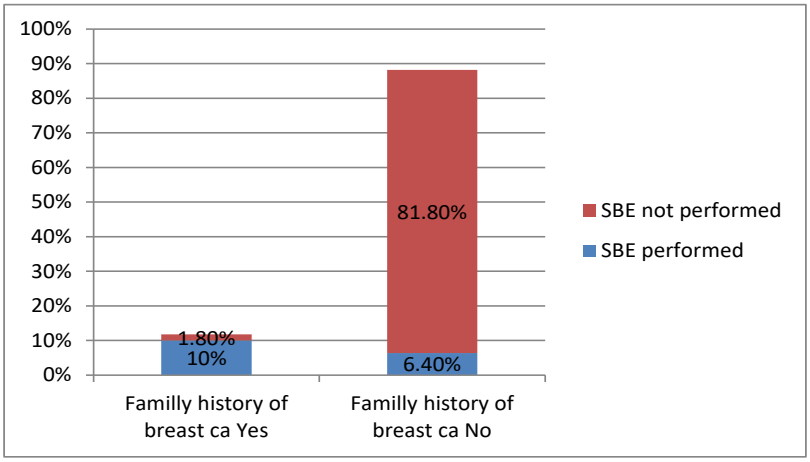

Figure 1. Family history of breast cancer diseases among regular female students in Wollo University, Northeast Ethiopia.

Knowledge of breast self-examination among female students

More than one-third of the study participants, 222 (36.4%) had a good knowledge toward BSE of whom 76 (34.23%) ever had practice of BSE. Three hundred ninety-one (64.1%) of the participants had heard of BSE and 446 (73.1%) of the participants knew techniques to perform BSE (Table 3)

Practice of breast self-examination

The proportion of BSE among regular female students at Wollo University was [16.4% 95% CI, (14.9, 17.9)]. Among them, 27(27%) practice regularly on monthly. Eighty-nine use correct position (Table 4).

Reason for not performing BSE

The highest number of study participants 510 (83.6%) who did not perform BSE, were further asked on their reasons for not performing BSE, and 164 (32.15%) said that they did not know how to perform BSE, 90 (17.65%) said that they do not have breast problem, 84 (16.47%) of them said fear of diagnosing breast cancer, and 67 (13.14%) of them said forgetfulness (figure 2).

Factors associated with BSE practice

On multivariable logistic regression, three of the five variables were significantly associated with BSE at 5% level of significance. Family history [AOR=28.4; 95% CI (13.04, 61.86), Attitude [AOR=4.19; 95% CI (1.97, 8.92)] and Knowledge [AOR=6.08; 95% CI (3.26, 11.34) were significant associated with the outcome variable (Table 5).

Table 2. Attitude towards BSE among regular female students in Wollo University, Northeast Ethiopia.

Variables		BSE practice	
		Yes	No
Doing BSE monthly helps me to get lump earlier	Agree*	76(12.4%)	325(53.3%)
	Neutral	11(1.8%)	82(13.5%)
	Disagree**	13(2.2%)	103(16.8%)
Wanting discussion about BSE with health professionals	Agree*	80(13.2%)	427(70%)
	Neutral	10(1.6%)	20(3.3%)
	Disagree**	10(1.6%)	63(10.3%)
Possibility of getting breast cancer	Agree *	77(12.6%)	125(20.5%)
	Neutral	12(2.0%)	53(8.7%)
	Disagree**	11(1.8%)	332(54.4%)
Breast cancer can kill a woman	Agree *	79(13.0%)	322(52.8%)
	Neutral	11(1.8%)	82(13.4%)
	Disagree**	10(1.6%)	106(17.4%)
Attitude towards BSE	Favourable	90(14.8%)	240(39.3%)
	Unfavourable	10(1.6%)	270(44.3%)

NB: * indicate Agree and strongly agree, ** indicate Disagree and strongly disagree.

Table 3. Knowledge towards BSE among regular female students in Wollo University, Northeast Ethiopia.

Variables		BSE practice	
		Yes	No
Ever heard about BSE	Yes	83(13.6%)	308(50.5%)
	No	17(2.8)	202(33.1%)
Knowledge on right age to start BSE	Yes	50(8.2%)	46(7.5%)
	No	50(8.2%)	464(76.1%)
Knowledge on frequency of BSE	Yes	57(9.3%)	151(24.8%)
	No	43(7.1%)	359(58.8%)
Knowledge on time of BSE for a women with regular menses	Yes	50(8.2%)	52(8.5%)
	No	50(8.2%)	458(75.1%)
Knowledge on time of BSE for a women with irregular menses	Yes	51(8.4%)	81(13.2%)
	No	49(8.0%)	429(70.4%)
Knowledge on Position of BSE	Yes	74(12.1%)	202(33.1%)
	No	26(4.3%)	308(50.5)
Knowledge on Techniques of BSE	Yes	90(14.7%)	356(58.4%)
	No	10(1.7)	154(25.2%)
Knowledge on Sign and Symptom of Breast Cancer	Yes	79(12.9)	306(50.2)
	No	21(3.5%)	204(33.4)
Overall knowledge of the respondents	Good knowledge	76(12.5%)	146(23.9%)
	Poor knowledge	24(3.9%)	364(59.7%)

Table 4. Practice of breast self-examination among regular female students in Wollo University, Northeast Ethiopia.

Variables		Frequency (%)
Ever Practice of BSE	Yes	100 (16.4)
	No	510 (83.6)
Age of respondent at first practice of BSE	Before 20 years old	32 (32)
	At 20 years old	58 (58)
	Other	10 (10)
Frequency of BSE(Regularity)	Regularly(monthly)	27 (27)
	Not Regularly (Not monthly)	73 (73)
Practice of BSE at correct time related with menses	Yes	69 (69)
	No	31 (31)
Practice of BSE using recommended position	Yes	89 (89)
	No	11 (11)
Breasts examined at a time	One breast at a time	61 (61)
	Both breasts at a time	39 (39)

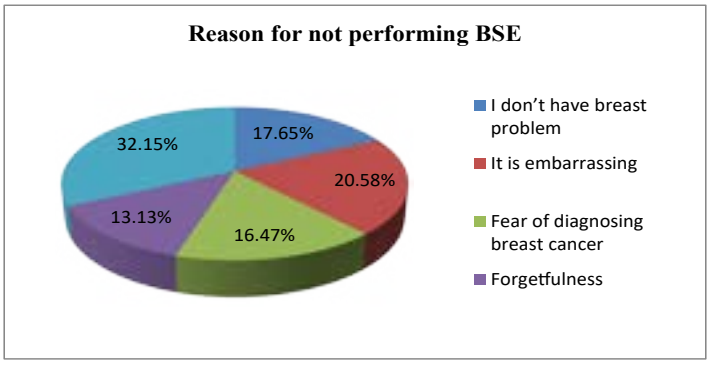

Figure 2. Reasons for not performing BSE among regular female students in Wollo University, Northeast Ethiopia.

Table 5. Factors associated with BSE among regular female students in Wollo University, Northeast Ethiopia.

Variables		BSE		COR(95%CI)	AOR(95%CI)
		Yes	No		
Year of study	1st year	23	102	0.65(0.29,1.49)	0.63(0.27,2.35)
	2nd year	29	145	0.58(0.26,1.28)	0.48(0.19,1.69)
	3rd year	20	106	0.55(0.24,1.26)	0.34(0.12,1.15)
	4th year and above	28	157	1	
Religion	Catholic	13	36	2.08(1.01,4.32)	1.28(0.41,3.33)
	Muslim	38	230	0.95(0.58,1.56)	0.56(0.28,1.17)
	Protestant	14	42	1.92(0.95,3.88)	1.62(0.54,4.07)
	Orthodox	35	202	1	
Family history	Yes	58	14	48.9(25.2,94.9)	28.4(13.04,61.86)**
	No	42	496	1	
Attitude	Favourable	90	240	10.12(5.15,19.9)	4.19(1.97,8.92)**
	Unfavourable	10	270	1	
Knowledge	Good knowledge	76	146	7.89(4.80,12.98)	6.08(3.26,11.34)**
	Poor knowledge	24	364	1	

NB: * indicate at P-value<0.05, ** indicate at P-value <0.001 and 1 indicate reference category.

DISCUSSION

This study was conducted to assess the prevalence and factors associated with breast self-examination among regular female students at Wollo University. In this study 16.4% of the respondents have ever practiced BSE.

This result was lower than the cross-sectional studies done among undergraduate university students in Turkey (70.4%), Ajman (22.7%) and Malaysia (19.6%) [14,16]. The possible explanation for these differences might be due to socioeconomic and socio-demographic characteristics among the study population. It has also the possible reason for lower than those countries may be due to the difference in availability of effective policy and strategies level related to the problem.

Similarly it was lower than the institutional based cross sectional studies done in Hawassa University (71.2%), Bahir Dar University

(54.1%), Debre Berhan (28.3%), Haramaya University (23%) and Addis Ababa university (21.4%) [9, 12,19,23,24]. The possible reason for lower than the studies in Hawassa, Bahir Dar University, and Haramaya. The reason for this diffidence might be due to sample size difference. Among the study participants who practiced BSE only 27% of them were practicing monthly. This is almost similar to finding from Debre Berhan University (30%) [9] but higher than the result from a studies conducted in Haramaya Universities (19%) and Hawassa University (16%) [12,19] This finding is lower than the study conducted in Bahr Dar (61.9%) [24]. The main reasons for this variety is due to sample size determination and sampling procedure. In this study, a significant relation had been found between BSE practice and family history of breast cancer, knowledge, and attitude of BSE.

In many findings, the practice of BSE was determined by the knowledge of women or having information on diagnostic methods of breast cancer. Similarly, in the current study, participants who had good knowledge on BSE were six times more likely to perform BSE as compared to those who had poor knowledge. This result was consistent with institutional based cross-sectional studies in Addis Ababa University and Debre Berhan University [9,23]. This may be due to the same socio demographic characteristics of the respondents. Attitude was one of the associated factors for BSE. This finding showed that who had favorable attitude toward BSE were four times more likely to practice BSE as compared to those who have unfavorable attitude. This study in line with study done in Addis Ababa University and Debre Berhan University [9,20]. This could be due to the the same attitude towards the importance of BSE.

Study participants with family history of breast cancer were performed BSE 28.4 times higher as compared to those participants without family history of breast cancer. This result was in line with a study done in Hawassa University and Addis Ababa University [12,20]. This could be due to the same socio- demographic and socio -economic factors among the participants. Women with a positive family history of breast cancer could have a better knowledge as well as higher frequency of BSE practice than those with a family history of breast cancer.

CONCLUSIONS OF THE STUDY

This study revealed that proportion of BSE practice was 16.4%. The study also illustrated family history of breast cancer, knowledge and attitude towards BSE are significant association of BSE. Generally all female are checked their breast during the first week of menses as well as forever the time if there is any change on their breast to check and prevent the breast cancer

AUTHORS' CONTRIBUTIONS

NA wrote the research data collection, analyzed the data, wrote the paper, and prepared the manuscript. KT and Aw approved the proposal with few revisions, participated in data analysis, and revised subsequent drafts of the paper. All authors read and approved the final manuscript.

DATA AVAILABILITY

The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.

CONFLICT OF INTEREST

There are no conflicts of interest in this work.

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