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Breast Cancer Knowledge and Breast Self-examination Practice among Female Students in Rift Valley University, Adama campus, Adama, Ethiopia, 2017

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Abstract

Background: Several studies reported that breast cancer is the most common cancer in women, and is the principal cause of cancer deaths and is therefore, a world concern. Early detection of breast cancer using breast self-examination (BSE) plays an important role in decreasing its morbidity and mortality.

Objective: To assess the level of knowledge of breast cancer and practice of breast self-examination among female students in Rift Valley University.

Methods and Materials: Cross-sectional study design was employed. A total of 423 female students were included. Stratified sampling method was used. Students were divided into two strata, as health science students and non-health science students. A pretested structured self-administered questionnaire was used to collect the data. Data was analyzed using SPSS version 20. Binary and Multiple logistic regressions were performed. Adjusted odds ratio (AOR) with 95% CI was used to measure the strength of association. Statistical significance was set at $p<0.05$

Results: Most of the respondents (94.1%) were with age of 20-30 years. The mean score knowledge about breast cancer was 6.5. Out of 423 female students, 59.8% of them had a good knowledge about breast cancer. Half of them (54.4%) reported that they had heard about breast self-examination while 25.8% reported that they had practiced breast self-examination before. Students who had family history of breast cancer were more likely knowledgeable than who hadn't family history of breast cancer (COR=3.042, AOR=1.225, 95% CI=1.636-5.656).

Conclusions: Nearly half of them had poor knowledge about breast cancer. Majority of them had poor knowledge how to perform breast self-examination and most of them didn't perform breast self-examination before.

Keywords: Breast cancer; Health care; Mammography; Screening; Radiation

Introduction

Globally, about 25 million people are living with cancer [1]. Recent estimates showed that cancer incidence will almost triple by 2030, with 20-26 million new cancer diagnoses and 13-17 million deaths [2]. Cancer is the second leading cause of death in the world. More than 70% of all cancer deaths occurred in low and middle-income countries [3]. Of all types of cancers, breast cancer is the most common cancer among women both in developing and developed countries [4,5]. It is the leading cause of death among women aged between 40 and 55 years [6]. Recent global cancer statistics indicated that breast cancer incidence is rising at a faster rate in populations of developing countries [7,8]. Breast cancer has received a great deal of publicity and has been the focus of intensive study relative to its origins, diagnostic methods and treatment. With the goal of formulating recommendations for early detection of breast cancer in developing countries, the 2002 Global Summit Consensus Conference on International Breast Health Care focused on several key issues, including educating and empowering women to adhere to guidelines for breast screening, developing infrastructure for diagnosing and treating breast cancer, and educating primary health care professionals [9].

The three screening methods for breast cancer include breast self-examination (BSE), physical examination of the breasts by a physician or qualified health workers or clinical breast examination (CBE) and mammography. Unlike CBE and mammography which require hospital visit, availability of equipment and expertise, BSE is inexpensive and is carried out by women themselves. The World Health Organization (WHO) recommends BSE as an alternative cost-effective screening method of women above age of 20 years. This is because mammography, though effective in screening breast cancer, is not available for many women in developing countries [10].

Several studies reported that breast cancer is the most common cancer, and is the principal cause of cancer deaths in women and is therefore a world concern. Early detection of breast cancer plays an important role in decreasing its morbidity and mortality. Breast self-

examination (BSE) is a screening method used to detect early breast cancer which involves the woman herself looking at and feeling each breast for possible lumps, distortions or swelling [11].

BSE is a simple, inexpensive, non-invasive procedure which helps a woman to know her breast and allows her to detect changes in the breast; such as breast masses or lumps [12]. However, women in developing countries do not perform breast self-examination for various reasons [13]. A recent report revealed that cancer is the second out of the ten top cancers registered at Tiku Anbesa (Black lion), in Ethiopia Radiotherapy center. Most health care facilities in Ethiopia do not have advanced laboratory investigations for diagnosing breast cancer. In resource limited countries like Ethiopia, BSE should be promoted for early detection of breast cancer to prevent related morbidities and mortalities. Therefore, this study was aimed to assess the knowledge of breast cancer and breast self-examination among female students in Adama Rift Valley University.

Materials and Methods

The study was conducted in Rift Valley University, Adama town. Adama/Nazareth was the previous capital of the Oromia Region. It's located at 8.54 °N, 39.27 °E at an elevation of 1712 meters, 99 km southeast of Addis Ababa. According to National census in 2007 the total population is 324,000.

Simple random sampling was used to select 423 study subjects and a pretested structured self-administered questionnaire was under taken. To determine the number of students to be included in the study, single population formula was used.

$n=Z\alpha\ (2^2P)\ (1-p)/d^2$

Where:

n=Sample size required, Zα/2=95% confidence level (1.96), P=Proportion of the problem (0.5), d=Desired precision (5%), n=384, considering 10% non-response rate, the total sample size was 423 female students.

Stratified sampling method was used. Students were divided into two strata, as health science students and non-health science students. Each stratum has different departments. From each stratum, departments were selected by lottery system. From the selected departments, participants were selected by simple random sampling based on the proportion of the number of female students.

Data was analyzed using SPSS version 20. Binary and Multiple logistic regressions were performed. Adjusted odds ratio (AOR) with 95% CI was used to measure the strength of association. Statistical significance was set at <0.05

Results

Socio-demographic data

A total of 423 female students were participated in this study. Most of the respondents (89.1%) were with age of 20-24 years. Fifty six percent of female students were enrolled in health sciences field. Among the 423 respondents, 353 (83.5%) were single while 62 (17.7%) were married. Sixty five (15.4%) of total respondents reported that they had family history of breast cancer (Table 1).

Variable	Frequency (%)
Age distribution	
15-19 years	18 (4.3)
20-24 years	377 (89.1)
25-29 years	21(4.9)
Above 30 years	7 (1.7)
Total	423 (100)
Marital status	
Married	62 (14.7)
Single	353 (83.5)
Divorced/Separated	6 (1.7)
Widowed	2 (0.5)
Religion	
Orthodox	243 (57.4)
Protestant	54 (12.8)
Catholic	22 (5.2)
Muslim	98 (23.2)
Others	6 (1.4)
Total	423 (100)
Educational enrolment	
Health sciences faculty	218 (51.1)
Non health sciences faculty	205 (48.9)
Total	423 (100)

Table 1: Socio-demographic characteristics of study participants, RVU, Adama, Ethiopia July 2017.

Assessment of knowledge of breast cancer

There were 17 item Questions used to evaluate respondents knowledge. The mean score was 6.5, SD=2.8 and the median score was 7. Out of 423 female students, 59.8% scored above the mean score knowledge. Among 423 of female students, 310 (73.3%) of them had heard about breast cancer.

From these, 172 (55.5%) of them were enrolled in Health Sciences field and 138 (44.5%) were enrolled in Non-Health Sciences field. Three hundred twelve (73.6%) reported that breast cancer is common in woman and 48.5% replied that breast cancer is more common in older age. Student enrolled in health sciences who had good knowledge about breast cancer were 53.2% (Figure 1 and Table 2).

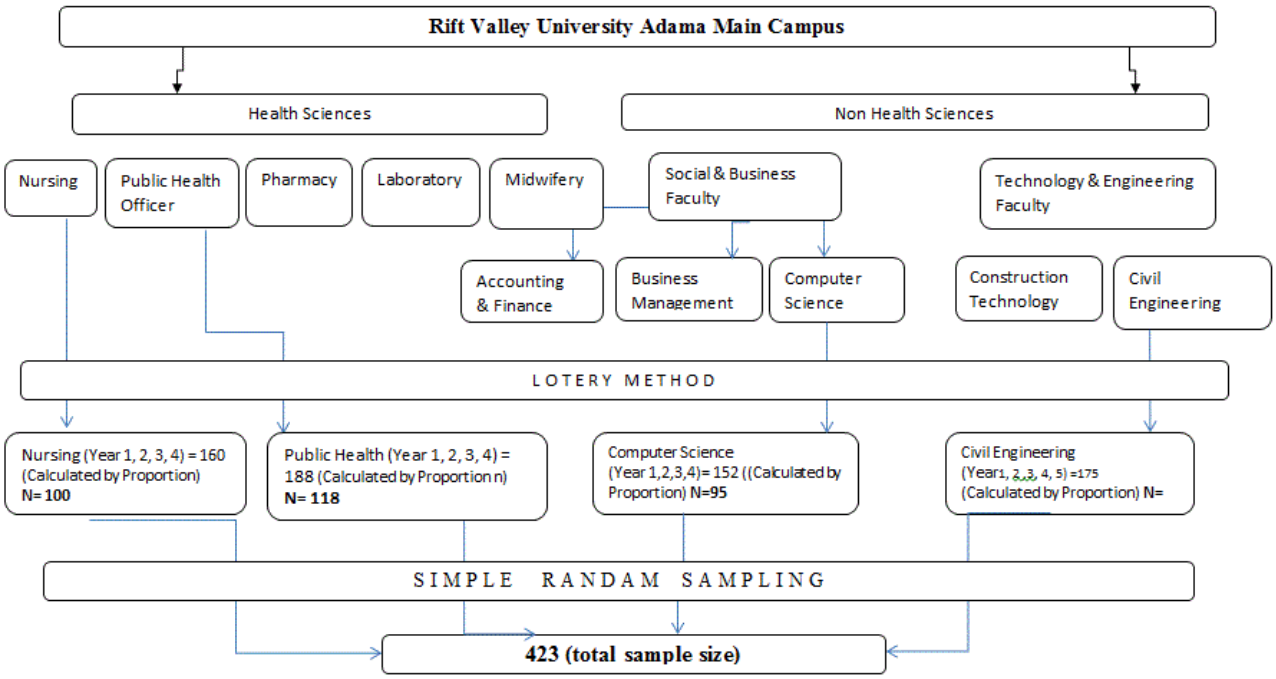

Figure 1: Schematic presentation of sampling procedure.

Breast cancer knowledge questions	Frequency (%)
Have you ever heard about breast cancer (Yes)	310 (73.3)
Sign and symptom knowledge questions	
Swelling of all or part of a breast (Yes)	32 (7.6)
Skin irritation or dimpling (Yes)	41 (9.7)
Breast or nipple pain (Yes)	21 (5)
Nipple retraction (Yes)	21 (5)
Redness, scaliness, or thickening of the nipple (Yes)	11 (2.6)
Nipple discharge (Yes)	6 (1.4)
Risk factor Knowledge questions	
Women who didn't breast feed (yes)	48 (11.3)
Women who started menstruating younger than age 12	21 (5)
First child after age 30 (Yes)	151 (35.1)
Drinking alcoholic beverages (Yes)	35 (8.3)
Exposure to radiation(Yes)	175 (41.8)

Table 2: Knowledge of breast cancer of study participants at RVU, Adama, Ethiopia, July 2017.

Source of information about breast cancer

The most reported source of information by the respondents was from college regular courses (48.2%) followed by Television/Media (30.7%). The contribution of health workers as source of information was found to be only 5.2%. Among 218 of female students who enrolled in Health Sciences Field, 104 (47.7%) of them reported that their source of information about breast cancer was from regular college courses followed by Media/Television (40.3%).

Knowledge about signs and symptoms of breast cancer

Respondents who replied that lump is common symptom of breast cancer were 202 (47.8%). One hundred seventy three (40.9%) of them replied that the easiest and economical ways to detect breast lump is breast self-examination. Proportion of respondents who correctly answered signs and symptoms of breast cancer were 61.2%. Ninety five (20.2%) of them replied that they had never heard about the listed screening methods (Breast self-examination, Clinical Physical examination & Mammography) (Figure 2).

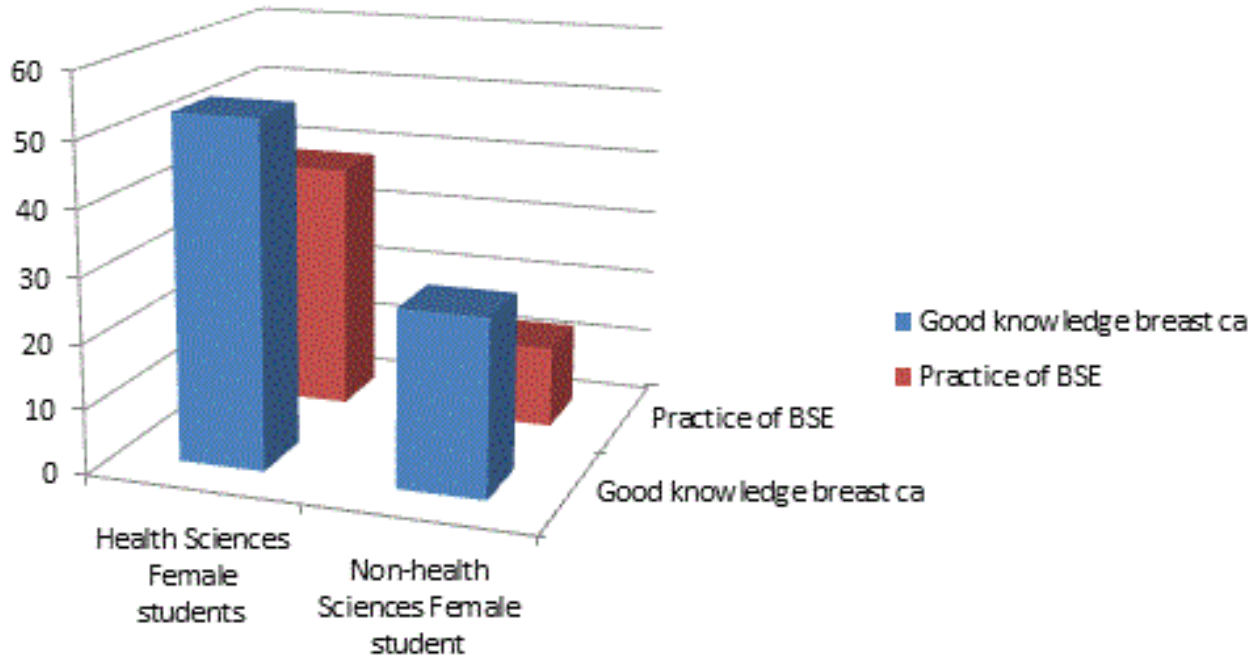

Figure 2: Knowledge score and practice of BSE among health science and non-health science female students, RVU, 2017.

Knowledge about risk factor of breast cancer

Respondents who correctly answered the risk factors of breast cancer were 58.9%. The most listed risk groups reported by the respondents were women who are exposed to high dose of chest radiation (41.8%) followed by women who had first child after the age of 30 years (35.1%).

Factors associated with knowledge of breast cancer

It was found that knowledge score was significantly associated with faculty enrollment. Students who were enrolled in health Sciences field were three times knowledgeable than enrolled in non-health sciences field students (COR=3.115, AOR=2.758, 95% CI=1.797, 4.680, P<0.000).

Students who had family history of breast cancer were more likely knowledgeable than who hadn't family history of breast cancer (COR=3.042, AOR=1.225, 95% CI=1.636-5.656) (Table 3).

Characteristics	Knowledge Score		Odds Ratio	Odds Ratio	P-Value
	Good Knowledge (%)	Poor Knowledge (%)	COR (95%CI)	AOR (95%CI)	
Faculty enrolment					
Health Sciences	114 (53.3)	100 (46.7)	3.115 (2.073, 4.680)	2.758 (1.797,4.233)	
Non-Health sciences	56 (24.5)	173 (75.5)	1		0
Year of study					
Year 1	24 (18.8)	104 (81.3)	1	0.261 (0.146,0.464)	0

Year 2	61(46.6)	70 (53.4%	3.776 (2.155, 6.618)	3.832 (2.151,6.826)	
Year 3	85(51.8)	79 (48.2)	5.027 (2.028, 9.006)	4.478 (2.460,8.151)	
Year 4	27 (48.2)	29 (51.8)	4.034 (2.030, 8.018)	3.095 (1.518,6.313)	
Family history of breast cancer					
No	141 (39.5)	216 (60.5)	1		
Yes	29 (44.6)	36(55.4)	3.042 ((1.636–5.656)	1.225 (0.685,2.203)	0.001

Table 3: Association of socio-demographic characteristics with knowledge score, RVU, Adama, 2017.

Knowledge assessment about breast self-examination

Among 423 of female students, 54.4% reported that they had heard about breast self-examination. From these, 164 (74.4%) students were enrolled in health sciences field. From 311 students who heard about breast cancer 64% of them have heard about breast self-examination. Regular course in college (25.3%) was major source of information followed by Television/Media (19.8). One hundred ninety four (45.8%) of them correctly answered all parts of breast that should be included in breast self-examination. Students who said breast self-examination is the easiest way for early detection breast cancer was 40.9% and 17.3% said mammography. Female students who said breast self-examination should be started at the age of 20 years were 34%. Very few (9.7%) of the respondents knew how to perform breast self-examination correctly while respondents who replied that breast self-examination is an important technique in the early detection of breast cancer were 22.5%.

Assessment of practice about breast self-examination

Among 329 (54.4%) of female students who were aware of breast self-examination, 25.8% reported that they had practiced breast examination before. From these, 76.1% were enrolled in health science field. Very few of them 9 (2.1%) done BSE monthly.

Factors associated practice of breast self-examination

Students who were enrolled in non-health sciences field were less likely to perform breast self-examination than students who were enrolled in health sciences field (COR=0.232, AOR=95% CI=0.271, 0.142, 0.380). It was found that 4th year students had similar breast self-examination practice (COR=1.628, 95% CI=0.826, 3.210) with 1st year female students (COR=1.165, 95% CI=0.644, 2.108). Students who had good knowledge about breast cancer had practiced breast self-examination 2 times than who had poor knowledge about breast cancer (Table 4).

Characteristics	Performing of breast self-examination		Odds Ratio	Odds Ratio	P-value
	Yes n (%)	No n (%)	COR (95%CI)	AOR (95%CI	
Faculty enrollment					
Health sciences	83 (38.2%)	134 (61.8)	4.312 (2.631,7.066)	3.696 (2.199,6.23)	0.002
Non-health sciences	26 (12.6%)	181 (87.4)	1		
Year of study					
Year 1	26 (20.3)	102 (79.7)	1	1.191 (0.624,2.72)	0.008
Year 2	30 (22.9)	101 (77.1)	2.538 (1.276,5.050)		
Year 3	31 (28.4)	78 (71.1)	2.178 (1.111, 4.232)		
Year 4	22 (39.3)	34 (60.7)	1.628 (0.826,3.210)		
Family history of breast cancer					
Yes	17 (25.8)	49 (74.4)	1.003 (0.550,1.829)	1.274 (0.661,2.454)	0.159
No	92 (25.7)	266 (74.3)	1		
Heard about breast cancer					
Yes	82 (26.4)	229 (73.6)	1.141 (0.691,1.882)	1.378 (0.790, 2.204)	0.992
No	27 (23.9)	86 (76.1)	1		
Knowledge score					

Good Knowledge	63 (37.1)	107 (62.9)	2.65 (1.696,4.139)	2.167 (1.300,3.612)	0
Poor knowledge	46 (18.2)	207 (81.8)	1		

Table 4: Association of socio-demographic characteristics with practice of breast self-examination, RVU, Adama, 2017.

Discussion

In this study, it was found that 73.3% of female students reported that they have heard about breast cancer which is less with a study conducted in the same town at Adama Science and Technology University (99.2%). This study revealed that 59.8% of the respondents had a good knowledge about breast cancer which was similar finding with a study conducted among Nurses in University Hospitals of Addis Ababa (57.8%), while it was much higher than a study conducted at Nigeria among undergraduate female students (28.9%). In the current study 48.2% of female students said that their source of information was from their regular college courses which was similar with a study conducted among Nurses in University Hospitals of Addis Ababa and different from a study conducted at Adama University that revealed Media as source of information. In this study the most listed women group who are at risk for breast cancer were women who had exposure to radiation (41.8%) followed by women who had first child after age of 30 years (35.7%) which is far different with a study conducted in Addis Ababa where the most listed risk factor was family history (69.6%) followed by wearing a tight bra (19.6%). A study conducted in Addis Ababa among health care professionals found that the most risk factor reported by the respondents was high dose chest radiation exposure (84.3%) followed by smoking (81.1%) [14-19].

This study revealed that the most listed source information about breast cancer were college regular courses whereas in a study conducted in Northern Ethiopia among women households head showed television/media as major source of information (59.1%) [20,21]. This study showed that students who had family history of breast cancer were three times knowledgeable than who hadn't family history of breast cancer which was similar finding with a study conducted at Adama University [16]. It was also found that students who stay at university were more likely to be knowledgeable which was similar with that of study conducted at Adama University [16]. From students who were aware of breast cancer, 25.8% of them said that they have practiced breast self-examination which was similar finding with a study conducted at Debre Birhan University (28.3%) [19], Adama University (39.4%) [16] and less than a study conducted in Uganda [20].

In this study 40.9% respondents said that easy way for early detection of breast cancer is breast self-examination (BSE) which was less finding compared to a study done in Addis Ababa 74.8% [15]. This study revealed that 25.8% of respondents had practiced BSE before. A study conducted at Debrebirhan study showed that 28.3% respondents had practiced BSE before [19] while in a study conducted at Addis Ababa among health care professionals found that 75.1% of respondents practiced BSE before [14].

Conclusion and Recommendation

In conclusion more than half of the respondents had poor knowledge about breast cancer. Majority of respondents had poor knowledge how to perform BSE and most of them didn't practice BSE. We recommend that the University shall arrange programs or clubs that may contribute for awareness creation about breast cancer and screening methods.

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