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RESEARCH ARTICLE

ASSESSMENT OF KNOWLEDGE AND PRACTICE OF METHODS OF EARLY DETECTION AND RISK FACTORS FOR BREAST CANCER AMONG REGULAR UNDERGRADUATE FEMALE STUDENTS OF JIMMA UNIVERSITY, JIMMA, ETHIOPIA

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ABSTRACT

Background: Breast cancer is the most common cause of mortality in middle aged women in western countries and it is also one of the major health problems globally. ***Objective:*** The objective of this study was to assess knowledge and practice of methods of early detection and risk factors for breast cancer among regular undergraduate female students of Jimma University. ***Methodology:*** This study was conducted in Jimma University, which is located in Oromia Region Jimma town, 335 kilometers South West of the capital Addis Ababa. The study was conducted from June 10-24, 2016. All female regular undergraduate students in Jimma University in the academic year of 2015/2016 were taken to be the source population for this study. A sample of 397 students was selected to fill the questionnaire. A stratified random sampling technique was used to select the study participants; and data analysis was done manually and using SPSS computer software. ***Result:*** A total of 361 students filled and returned the questionnaire in this study. The median age of these participants was 21 year. 68.98% of the participants have heard about Self-Breast Examination (SBE) and mass-medias were the main source of information (55.42%) for them. 24.1% of the students have at least once performed Self-Breast Examination; where as 75.9% of them have never performed It; mostly because of not being sure how to perform it (87.26%). Most of the participants (85.04%) want to be taught about and how to perform Self-Breast Examination. 91. 14% of the participants know that a previous personal history of breast cancer increases the risk of having breast cancer again; whereas 83.66% of them know that family history of breast cancer increases the risk of having breast cancer in the individual. ***Conclusion:*** Most of the participants were unaware of the benefits, the appropriate timing in relation to menstrual period, and techniques of performing Self-Breast Examination (SBE). Health Science Students (HSS) had better awareness & practice of Self-Breast Examination than Non-Health Science Students (NHSS).

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INTRODUCTION

Breast cancer is the malignant proliferation of epithelial cells lining the ducts or lobules of the breast. Epithelial malignancies of the breast are the most common cause of cancer in women and the second most common cancer in the general population (second only to skin cancer);breast cancers account for about one fourth of all cancers in women (Marc *et al.,* 2013). Breast cancer is the most common cause of mortality in middle aged women in western countries. In 2010 approximately one and a half million (1,500,000) new cases of breast cancer were diagnosed worldwide (Norman *et al.,* 2008). According to the guideline of the American Cancer Society (ACS) (2007), risk factors for breast cancer included sixteen known major risk factors. Among these, female gender is the most important risk factor for breast cancer, as only less than one percent (< 1%) of patients with breast cancer are males (American Cancer Society, 2016). Life style related risk factors for breast cancer include prolonged use of oral contraceptive pills, having no children, having no history of breast feeding, use of hormone replacement therapy (HRT), body obesity, alcohol consumption, and cigarette and/or tobacco smoking. Breast cancer also occurs more frequently in women with a family history of breast cancer than in the general population (American Cancer Society, 2016). Most breast cancers clinically present as a hard lump, which may be associated with in drawing of the nipple. Any portion of the breast including the axillary tail may be involved, however, breast cancer is found most frequently in the upper outer quadrant of the breasts (Norman *et al.,* 2008). Although breast cancer commonly develops after the age of 45 years and is extremely rare below the age of 20, currently the age at onset

is decreasing progressively; and more and more young women are being affected than so far (Fray *et al.,* 2006). Young breast cancer patients have a lower rate of survival than older breast cancer patients because of the fact that they are diagnosed at more advanced stages. Because cancers in young women are generally aggressive and result in lower survival rates, early detection is very important (Rosenberg *et al.,* 2003). Breast cancer is the most common cancer in women worldwide; and the second most common cancer overall. Nearly 1.7 million new cases of breast cancer were diagnosed in 2012 worldwide. Breast cancer represents about 12% of all new cancer cases overall and about 25% of all cancers in women (http://www. wcrf.org/int/cancer-facts-figures/data-specific-cancers/breast-cancer-statistics). Breast cancer is the most common cause of death in middle aged women in the western countries (Norman *et al.,* 2008). Earlier in the year 2007, about 0.18 million (180,510) cases of invasive breast cancer were diagnosed and 40,910 deaths from breast cancer were reported in the USA. Breast cancer accounts for about one third of all cancers occurring in women (Marc *et al.,* 2013). About 12 % of all USA women (1 in 8 women) will develop invasive breast cancer over a life time (http://www.breastcancer.org/ symptoms/understand_bc/statistics). Breast cancer is a very important global health problem for women in the 21st century. It is the second most common cause of death in developed countries in general; where as in developing countries, it stands the third most common cause of death following infectious & parasitic diseases in the first place and cardiovascular diseases in the second (World Health Organization, 1995). There are three dates in a woman's life that have a major impact on the incidence of breast cancer. These are her age at menarche, age at her first full term pregnancy, and age at menopause (Marc *et al.,* 2013). Women who experience menarche at the age of 16 years have only 50-60% of the risk for breast cancer as compared to a woman who had menarche at the age of 12; this lower risk persists throughout her life. The lower the woman's age at onset of menarche, the higher the risk of having breast cancer in her life time (Marc *et al.,* 2013).

Similarly, menopause occurring 10 years earlier than the median age of menopause, 52 years, whether it occurred naturally or is induced surgically, reduces the life time risk of having breast cancer by about 35%. The lower the woman's age at onset of menopause, the lower also is the risk of having breast cancer in her life time (Marc *et al.,* 2013). Women who have their first full term pregnancy by the age of 18 years have a 30-40% lower risk of breast cancer as compared to nulliparous women. The lower the age of the woman at her first full term pregnancy, the lower also is the risk of getting breast cancer in her life time. These three age-factors, i.e. age at menarche, age at first full term pregnancy and age at menopause, in combination can account for 70-80% of the variation in breast cancer frequency among different countries and populations (Marc *et al.,* 2013). All women are at risk of developing breast cancer. The older the woman is the greater the chance of developing breast cancer. Although breast cancer commonly develops after the age of 45, currently the age of onset is decreasing; and more and more young females are being affected than so far. Breast cancers in young women are generally more aggressive and usually result in lower survival rates (Fray, 2006; Rosenberg *et al.,* 2003). Breast cancer is one of the manageable cancers if detected early. But in developing countries, the diagnosis is usually delayed and the cancer is diagnosed at a more advanced stage as compared to developed countries; and this in turn results in a greater mortality rate of the cancer in developing countries than in developed countries (Marc *et al.,* 2013). According to the American Cancer Society (ACS), breast cancer rates have generally increased about 30% in the past 25 years. This is due in part to increased screening tests which detect more and more cancers at an earlier age. However, according to the society, death rates due to breast cancer have been decreasing steadily since 1990, because of the development of earlier detection and better treatment (http//www.imaginis.com/breasthealth/www cancer.gov). With regard to sex, breast cancer more commonly occurs in females than in males; with a female to male ratio of 150:1. And with regard to age, a plot of breast cancer incidence versus age of the patient shows two components; a straight line increase with age, and a decreasing slop which begins at the age of menopause (Marc *et al.,* 2013).

According to the Surveillance Epidemiology and End Results (SEER) program of the National Cancer Institution, the white, Hawaiian and African-American women have the highest incidence of invasive breast cancer. African-American women are more likely to be diagnosed with a later stage of breast cancer than white women, and thus have the highest mortality from breast cancer (http//www.imaginis.com/breasthealth /www cancer.gov). Breast cancer occurs more frequently in women having family history of breast cancer than in the general population. And this has far reaching reflections in terms of counseling and tumor prevention in these women (Norman *et al.,* 2008). Breast cancer more commonly affects women in developed countries than in developing countries; this implies dietary factors may play a great role in the occurrence of breast cancer. There are evidences indicating that there is a significant link between breast cancer and diets low in their phyto-estrogen contents. A high intake of alcohol is another dietary factor associated with an increased risk of breast cancer (Ergete *et al.,* 1999). The life time risk of developing breast cancer is higher in developed countries (about 4.8%), and lower in developing countries (about 1.8%). However, because breast cancer in developing countries is diagnosed at a much later or more advanced stage, it results in a greater mortality rate than in developed countries (Ergete *et al.,* 1999). Breast cancer is virtually unique among the epithelial tumor types in adults because screening significantly improves survival. Self-Breast Examination (SBE), Clinical Breast Examination (CBE) by a health care provider, and mammography have been advocated as useful screening tools for early detection of breast cancer. A number of authors have suggested that yearly or twice yearly screening with mammography or with mammography plus CBE, in normal risk women older than 50 years of age, decreases mortality from breast cancer (Marc *et al.,* 2013).

A meta-analysis examining outcomes from randomized trials of mammography shows a 25-30% reduction in the risk of dying from breast cancer as a result of annual screening after age of 50; the data for women between ages 40 and 50 are also positive. Although mammography is a useful and preferred technique for detection of breast cancers, it is relatively costly, and largely in developing countries, most patients may not afford it, and it also requires skilled personnel and technology along with the machinery. Therefore, SBE by the patient and CBE by a skilled health care provider are recommended as a complementary screening method, although mammography remains the primary screening tool of choice (Marc *et al.,* 2013; Solomon *et al.,* 1998). Self-Breast Examination (SBE) is recommended as a helpful tool by many organizations. A

significant fraction of breast cancers are detected first by the patients themselves.SBE is also useful for patients in identification of tumors appropriate for conservative local therapy, and allows the patient to participate in making decision regarding her care (Marc *et al.,* 2013). The American Cancer Society (ACS) recommends, as a good tool, Self-Breast Awareness (SBA) and Self-Breast Examination (SBE) for early detection of breast cancer. It benefits women in two ways: women become more familiar with the appearance and the feel of their breasts, and hence they are more likely to detect any changes or new developments in their breasts as early as possible (American Cancer Society, 2016). Self-Breast Examination (SBE) makes women more "breast ware", which in turn leads them to an earlier detection of any changes in the breast. The rationale behind promoting the practice of SBE as a screening test is the fact that breast cancer is frequently detected by women themselves, who are otherwise healthy and without other symptoms (www.umgc.org). Women who regularly practise SBE present with smaller tumor size at earlier stages of the disease than women who do not practice. It is estimated that 25-30% of women in the United States perform SBE every month. However, among those women who practise SBE, there are often delays in seeking medical attention. The reason for this delay continues to be a subject of ongoing research; fear being the major factor, psychological factors, economic factors, lack of education, and reluctance to act on, are also among the factors (Ergete *et al.,* 1999). Self-Breast Examination (SBE) is a simple procedure that every individual woman can perform by herself. It is private, safe, free, non-invasive, and can be done at home. It is important that women examine their breasts regularly and that they make it their routine habit to be aware of any changes in the breast as an act of self-care (Marc *et al.,* 2013). Women should begin to practise SBE by the age of 20 and should continue the practice throughout their lives, even during pregnancy, and after menopause. SBE should be performed regularly every month; and the woman should become familiar with how her breasts usually feel; so that she may detect any changes from what is normal to her. If the woman is menstruating, the recommended time to do SBE is 5 or more days after the first day of her menstrual flow, as these are the days when breasts are least likely to be tender or swollen (www.umgc.org). Health behavior patterns that are developed during adolescence or early adult hood can enhance future health behavior; and have implication for the entire life of the individual. Developing proper health behavior should lead to maintenance of good health throughout life. One of such health habits is SBE; and hence the proper knowledge and practice of SBE among young women such as college and high school students is very important (http://www.biomedcental.com/1471-2458/8/359).

METHODS

Study area

This study was conducted in Jimma University (JU), Jimma, South West Ethiopia. Jimma University is a higher learning institution which was officially launched in 2000 by the amalgamation of the Jimma Agricultural College and the former Jimma Health Science Institute (which was founded in 1983). Jimma University is located in Jimma town which is about 335 kilometers South West of the capital Addis Ababa. The total number of female regular undergraduate students in Jimma University in the year this study was done, i.e. in the academic year 2015/2016 is 6042, according to the information collected from the registrar office of Jimma University.

Study Period: The study was conducted from June 10-24, 2016.

Study Design: A descriptive cross sectional survey was used to assess the knowledge and practice of methods of early detection of breast cancer and risk factors for breast cancer among female regular undergraduate students of Jimma University.

Population

The Source Population: All female students in Jimma University who are enrolled in the regular undergraduate programme in the academic year of 2015/2016 were the source population for this study.

The Study Population: A sampled number of regular undergraduate female students in Jimma University in the academic year of 2015/2016 were involved as the study population for this study.

Sample Size and Sampling Technique

The following sampling formula (Fisher's formula) was used to arrive at the appropriate sample size:

$$n = \frac{(Z\alpha/2)^2 p(1-p)}{d^2}$$

$$= \frac{(1.96)^2 0.5(1-0.5)}{(0.05)^2}$$

$$= 384$$

Where:

N = initial sample size
Zα/2 = standard normal value at confidence interval of z95%=1.96
P = expected number of proportion = 0.5
D = margin of error = 0.05

Since the number of total population (6042) is less than 10,000, the following correction formula for sample size was used:

$$n_c = \frac{n}{1+n/N}.$$

$$= \frac{384}{6042}$$

$$= \mathbf{361}$$

Where:

nC = corrected ample size
n = initial sample size
N=total number of female regular undergraduate students in JU in 2015/16=6042

From Jimma University Departments 8 department s were selected by simple random lottery method. From Health sciences 3 departments and non health sciences 5 departments

were included. Then female students were selected by using systematic sampling technique.

Data collection method: After brief introduction and orientation, the questionnaires were distributed out, and were filled by the individual respondents themselves with explanation given on some points upon request.

Data analysis: The collected data were tallied manually, and analyzed using SPSS computer software. The results were organized and presented by using tables and figures. Frequency distributions by percentage, mean and median were displayed; and some statistical associations using chi-square test were also made and presented

Ethical consideration: Firstly, an official letter of permission was taken from the Medicine and Health Officer Coordinating Office of Jimma University. The other major ethical consideration was verbal permission obtained from respondents. The respondents were informed that they have the full right to participate, or to not participate, or to withdraw from participation at any time, if they felt to do so. Moreover, confidentiality of the data was strictly observed including omitting of the respondent's name from the questionnaire.

RESULTS

Socio-demographic characteristics: A total of 397 regular undergraduate female students in Jimma University in the academic year 2015 /2016 were expected to participate in this study; among these only 361 students participated in the study, filled and returned the questionnaire, making the response rate 90.93%.

Table 1. Frequency Distribution of Regular Undergraduate Female Students by Age, Ethnicity and Religion, Jimma University, June 10-24, 2016

		Number	Percent
Age (years)	<20	34	9.42
	20-24	286	79.22
	25-29	41	11.36
	Total	361	100
Marital status	Single (not yet married)	338	93.63%
	Married	23	6.37%
	Divorced	0	0
	Widowed	0	0
	Total	361	100
Ethnicity	Oromo	111	30.75
	Amhara	73	20.22
	Tigrie	54	14.95
	Guragie	27	7.48
	Kucha	31	8.59
	Wolaitta	34	9.42
	Yem	20	5.54
	Others	11	3.05
	Total	361	100
Religion	Orthodox Christian	150	41.55
	Catholic Christian	47	13.02
	Evangelical Christian	101	27.98
	Muslim	55	15.23
	Others	8	2.22
	Total	361	100

The age of the participants ranged from 18 to 29 years, and the median age was 21years. Most of the participants were single (not yet married) (93.63%), Oromo by ethnicity (30.75%), and Orthodox Christian by religion (41.55%). Totally, 43.5% (157) students were from the College of Health Sciences, while the remaining 56.5%(204) students were from various non-health science colleges, mainly consisting of Law and Governance students 51 (14.1%), followed by Business and Economics students 47 (13.02%). Among the participants, 113 (31.3%) of them were first year students while the remaining 248 (68.7 %) were students from second year and above.

Basic information about breast cancer: Among the total of 361 participants, 317 (87.8%) have ever heard of breast cancer. Among those who have heard of breast cancer (n=317), mass media were the most common source of information about breast cancer 133 (41.96%), followed by the Church or religious homes 59 (18.61%). 190 (59.94%) of those who have heard about breast cancer (n=317) reported that breast cancer occurred more in females but may occur in males too, while the remaining 127 (40.06%) reported that breast cancer occurred only in females. Among those who have heard of breast cancer (n=317), the majority of respondents 215 (67.82%) reported that breast cancer is not treatable at all; while 98 (30.92%) reported breast cancer, if detected early, can be treated; the remaining 4 (1.26%) reported they don't actually know whether breast cancer is treatable.

Knowledge and practice of methods of early detection of breast cancer: Among the participants, 54.85% (198) have heard about methods of early detection of breast Cancer. Only 15.79% (57) students were aware of all the three methods (SBE, CBE & mammography). Among others, SBE was the most commonly known screening method (56.56%), followed by CBE (48.48%). Mass media were the main source of information about methods of early detection or screening of breast cancer (46.46%), followed by health professionals (23.74%), and friends and peers (10.6%). 68.98% (249) participants have ever heard of SBE, but only 2.5 %(9) completely know all the benefits of SBE. 62.33% (225) of them stated that early detection and treatment of breast cancer is the only benefit of SBE. While performing SBE, the majority, 62.88% (227) of the participants stated that one should check for lumps in the breasts; followed by 59.83% (216) students stating that one should check for the shape and size of the breasts; others include 56.79% (205) for presence of any nipple discharge, 49.86% (180) for any color change in skin overlying the breast, 46.81% (169) for changes in nipple direction or position, 30.19% (109) for lumps in the under-arm area (armpit); and totally 30.75%(111) of the students stated that all of the above mentioned features should be checked during SBE.

Among those who have ever heard of SBE (n = 249), 37.75% (94) participants reported that they do not know the appropriate time to do SBE in relation to their menstrual cycles; whereas only 13.25% (33) students correctly identified the recommended time for SBE, which was defined as 5 or more days after the starting day of their menstrual cycle. Most of the participants 60.64% (151) do not know any of the techniques used in performing SBE, whereas39.36% (98) know the circular technique; only 1.20% (3) students reported that they know both the edge technique and the circular technique; but none of the participants know the vertical strip technique. Regarding the performance of Self-Breast Examination (n = 361), only 87 (24.1%) of the participants have ever performed SBE; and 70 (19.4%) have performed SBE during the past 12 months preceding the time of this study. The remaining 274 (75.9%) participants have never performed SBE. The most common reason for not performing SBE (n = 274), as reported by the participants, was not being

Table 2. Frequency Distribution of Regular Undergraduate Female Students by Department of Study, Jimma University, June 10-24, 2016

n = 361	S. No.	College/Band	Department	Total Number of Female Students in the Department	Participants involved in the Study	
					No.	%
Health Science Students	1	College of Health Sciences	Medical Laboratory	57	13	3.60
	2		Nursing	168	37	10.25
	3		Medicine	486	107	29.65
	Total			**711**	**157**	**43.5**
Non Health Science Students	4	Natural & Computational Sciences	Information Science	52	23	6.4
	5	Business and Economics	Accounting	105	47	13.02
	6	Law & Governance	Governance & Development Studies	114	51	14.1
	7	Social Sciences & Humanities	Sociology	105	46	12.74
	8	Education & behavioral science	Special Needs Education	83	37	10.24
	Total			**459**	**204**	**56.5**
Total					**361**	**100**

Table 4. Frequency Distribution of Regular Undergraduate Female Students of Jimma University by Source of Information about SBE, Awareness of 3the Appropriate Timing to Perform SBE, and Awareness of Technique for Doing SBE, Jimma, Ethiopia, June 10-24, 2016

	Variable	Number	Percent
Source of information about SBE (n = 249)	Mass media	138	55.42
	Friends or peers	108	43.37
	Health professionals	67	26.91
	School (education)	33	13.25
	More than one source	97	38.95
	Do not know	94	37.75
Awareness of the appropriate time for doing SBE (n = 249)	Before menstruation	69	27.71
	Regardless of the time of menses	53	21.29
	≥ 5 days after the starting day of menses	33	13.25
	During menstruation	0	0
	Total	249	100
Awareness of techniques for doing SBE(n = 249)	Vertical strip technique	0	0
	Circular technique	98	39.36
	Edge technique	3	1.2
	Both Edge& Circular technique	3	1.2
	Do not know any of them	151	60.64

Table 4. Frequency Distribution by Frequency of Performing SBE, Age at Start of SBE, Time ofPerforming SBE, and Techniques Used During SBE among Regular Undergraduate Female Students of Jimma University, Jimma, Ethiopia, June 10-24, 2016

	Variable	Number	Percent
Frequency of performing SBE (n = 87)	Regularly (Every month)	0	0
	> 9 times during the past 12 months	5	5.75
	6-9 times during the past 12 months	24	27.59
	3-6 times during the past 12 months	27	31.03
	< 3 times during the past 12 months	31	35.63
	Total	87	100
Ever performed SBE (n = 361)	Yes	87	24.1
	Never	274	75.9
	Total	361	100
Age at start of SBE (n = 87)	< 20 years of age	21	24.14
	At 20 years	13	14.94
	After 20 years	53	60.92
	Total	87	100
Time of performing SBE (n = 87)	Regardless of the time of menses	31	35.63
	Before starting menstruation	45	51.72
	During menstruation	0	0.00
	≥ 5 days after menstruation	11	12.65
	Total	87	100
Technique used during SBE (n = 87)	Vertical strip technique	0	0.00
	Circular technique	40	45.98
	Edge technique	3	3.45
	I just perform it randomly	44	50.57
	Total	87	100

sure of how to perform it 83.21% (228), followed by not knowing the importance of SBE 15.33% (42). Of those who have ever performed SBE (n = 87), the majority 60.92% (53) have started to perform SBE after the age of 20 years; none of them performed SBE regularly every month; and only 5.75% (5) of them performed SBE more than 9 times during the past 12 months prior to this study. The majority 35.63% (31) performed SBE less than 3 times during the past 12 months preceding the time of this study. Regarding techniques used during SBE, among those practicing SBE (n = 87), the majority, 44 (50.57%) reported that they just perform it randomly; whereas circular technique was the technique used by 40 (45.98%) of them. Among those who practised Self-Breast Examination (n = 87), the majority, 51.72% (45) students performed SBE before starting menstruation, followed by 35.63% (31) students who performed SBE regardless of the time of their menstruation; only12.65% (11) students correctly performed 5 or more days after the starting day of their menses. Of the total 361 participants of the study, only 5.82 %(21) students stated that they have undergone Clinical Breast Examination (CBE) by a professional health care provider for the purpose of screening for breast cancer, and most of them 12 (57.14%) undergo CBE once a year, followed by 7 (33.33%) undergo it less frequently than once in a year, the

Table 5. Comparison of Health Science Students (HSS) and Non-Health Science Students (NHSS) among Regular Undergraduate Female Students of Jimma University by Awareness and Practice of SBE, Jimma University, Jimma, Ethiopia, June 10-24, 2016

			Field of Study			Chi-Square Test
			HSS	NHSS	Total	
Ever heard of SBE (awareness) (n = 361)	Yes	No.	126	123	249	df= 1 p= 0.001 (p < 0.05)
		%	34.9	34.1	68.98	
	No	No.	31	81	112	
		%	8.6	22.4	31.02	
	Total	No.	157	204	361	
		%	43.5	56.5	100	
Ever performed SBE (practice) (n = 361)	Yes	No.	51	36	87	df= 1 p = 0.003 (p < 0.05)
		%	14.1	9.97	24.1	
	No	No.	106	168	274	
		%	29.4	46.53	75.9	
	Total	No.	157	204	361	

Note: NHSS= Non-Health Science Students; HSS= Health Science Students

Table 6. Frequency Distribution of Regular Undergraduate Female Students by Awareness of Risk Factors for Breast Cancer, Jimma University, Jimma, Ethiopia, June 10-24, 2016

	Risk Factor	Knowledge about the Likelihood of Getting a Breast Cancer							
		Increase		Decrease		Do Not Know		Total	
		No.	%	No.	%	No.	%	No.	%
1	Family history of breast cancer	329	91.14	4	1.11	28	7.75	361	100
2	Previous personal (self) history of breast cancer	302	83.66	59	16.34	0	0	361	100
3	Smoking (cigarette, tobacco)	299	82.83	59	16.34	3	0.83	361	100
4	Early menarche (before 12 years of age)	35	9.6	45	12.6	281	77.8	361	100
5	Late menopause (after 55 years of age)	32	8.86	34	9.42	295	81.72	361	100
6	Older age	23	6.37	43	11.91	295	81.72	361	100
7	Alcohol consumption	107	29.64	76	21.05	178	49.31	361	100
8	Having the first pregnancy at a late Age (> 30 years of age)	29	8.03	46	12.75	286	79.22	361	100
9	Having never breastfed a child	108	29.92	75	20.78	178	49.3	361	100
10	Recent use of Oral Contraceptive Pills (OCP)	85	23.55	32	8.85	244	67.6	361	100
11	Environmental pollution	124	34.35	59	16.34	178	49.31	361	100
12	Diets full of high fat	37	10.25	135	37.4	189	52.35	361	100
13	Obesity (post-menopausal obesity)	122	33.8	60	16.62	179	49.58	361	100
14	Recent and long term use of hormone (estrogen) replacement therapy (HRT)	15	4.15	39	10.8	307	85.05	361	100
15	Exposure of chest or breasts to radiation Energy	108	29.92	76	21.05	177	49.03	361	100
16	Lack of physical activity/exercise	35	9.7	137	37.95	189	52.35	361	100

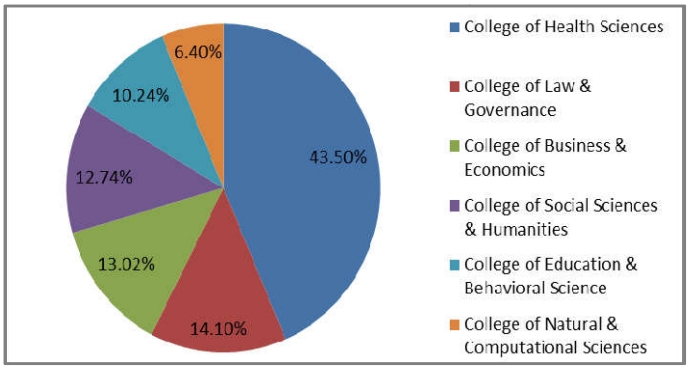

Figure 1: Frequency Distribution of Regular Undergraduate Female Students by College of Study, Jimma University, June 10-24, 2016

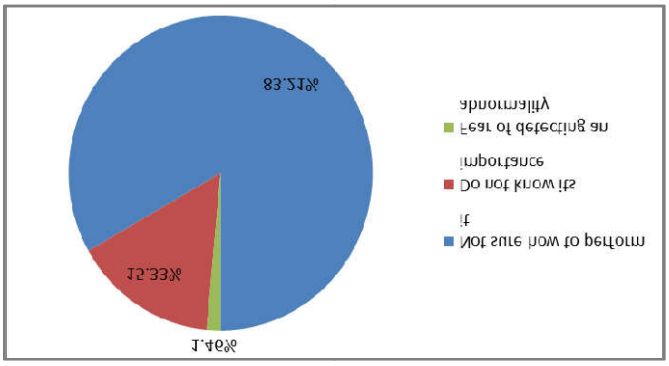

Figure 2. Frequency Distribution of Regular Undergraduate Female Students of Jimma University by Reasons for Not Performing SBE, Jimma University, Jimma, Ethiopia, June 10-24, 2016

remaining 2 (9.53%) undergo it twice in a year. Most of the participants 307 (85.04%) want to be taught about and how to perform SBE. According to the table above, there was a statistically proven strong association between the college of study of the students and their awareness & practice ofSelf-Breast Examination (SBE). Health Science Students (HSS) are more aware and also practice SBE more frequently than the Non- Health Science Students (NHSS).

Knowledge of risk factors for breast cancer: Regarding awareness of risk factors for breast cancer, the most commonly known risk factor was family history of breast cancer 329 (91.14%); followed by a previous personal (self) history of breast cancer 302 (83.66%); and cigarette or tobacco smoking 299 (82.83%). Use of hormone replacement therapy (HRT), lack of physical activity, high fat diet, older age, and late menopause were not known as risk factors by most of the participants.

DISCUSSION

Breast cancer is one of the most common causes of morbidity and mortality in middle-aged women; yet fortunately it is one of the manageable cancers if detected early (Norman *et al.,* 2008). In this cross-sectional study, 361 regular undergraduate female students learning in Jimma University in the academic

year 2015/2016, with the age range between 18 – 29 years (median age 21 years) were involved. 54.85% of the participants have heard about methods of early detection of breast cancer which is lower than the figure from Ibadan University of Nigeria (85.5%) (Chiomic *et al.,* 2007), but higher than the study figure from Manias High School of Turkey (37.9%). The mass media were the main source of information (46.46%), which is lower than, but comparable to, other studies, such as Manias, Turkey (48.6%). And only 23.74% get the information from health care providers, which is by far lower than that of James Cook University of Australia where the commonest sources (87.4%) are doctors (http:// www.question.com/google.schder.qstjjsesioned lea). These results show that public mass media and health care professionals are expected to do much more than ever regarding breast cancer prevention and education. Only 2.5% of the study participants completely know all the benefits of SBE, which is very low when compared to study from Ibadan University of Nigeria (53.2%) (Chiomic and Asulu, 2007), and this makes clear a lot is yet to be done in this field. Only 13.25% of the students correctly identified the recommended time for performing SBE in relation to their menstrual cycle, and even a very few of them practiced SBE during this appropriate time (12.65%). This shows that the overall awareness or knowledge of SBE as well as its practice among these study participants was lower when compared to various similar studies (Chiomic and Asulu, 2007). Regarding the practice of SBE, only 19.4% of the students performed SBE during the past 12 months prior to the time of this study; this is a relatively lower figure compared to a study from Turkey (27%) (11), James Cook University of Australia (99%)(13), Ibadan University of Nigeria (25%) (Chiomic and Asulu, 2007), and several other similar studies. The awareness and practice of methods of early detection of breast cancer such as SBE, though it is convenient, cheap and easy, is very low which may be the result of poor attention given to this problem (1). In fact, responsible bodies and all females in general must understand the magnitude of the burden of breast cancer, and must work on ways of solving it.

The most common reason for not performing SBE was lack of knowledge on how to perform SBE (83.21%); and most of the participants (85.04%) want to be taught about and how to perform SBE; this actually is a good opportunity for interventions by all concerned bodies including and most pertaining to health care providers, school teachers, parents, Churches, and public mass media. There was a statistically proven strong association between knowledge of methods of early detection of breast cancer, as well as practice of SBE, and college of study of the students. Students from the College Health Sciences have more awareness and better practice than those from Non- Health Science Colleges; this may be because of some pieces of health information given in the class rooms as well as the students' extensive reading from text books and other medical articles. The most commonly known risk factor for breast cancer in this study was family history of breast Ca (91.14%), which contrasts to the study in Ibadan University of Nigeria where personal history of breast Ca is the most known risk factor (Chiomic and Asulu, 2007). The fact that all women are at risk of developing breast cancer, and the fact that breast cancer is one of the few manageable cancers if detected early, should get enough attention and a lot must be done to combat this deadly but yet somehow preventable and treatable problem (Marc *et al.,* 2013; http// www.imaginis.com/breasthealth/ www cancer.gov).

Conclusion

Most of the study participants are unaware of the benefits, appropriate timing, and techniques of performing SBE. The focus given to methods of early detection of breast cancer and to education on risk factors for breast cancer by mass media and by health care professionals is significantly low. The main reason for not performing Self-Breast Examination is lack of knowledge on hoe to perform Self- Breast Examination, and the majority of the study participants want to be taught about and how to perform Self- Breast Examination. The majority of study participants are unaware of most of the risk factors for breast cancer. The most commonly known risk factor was having a family member with a history of breast cancer. Generally, Health Science Students have better knowledge and practice of Self-Breast Examination than Non-Health Science Student

Declaration: This research is our original work it was not directly taken from any other research or book. All researches used for the preparation of this manuscript were cited appropriately.

REFERENCES

Marc E. Lippman, Otis W. Brawley, and Barnett S. Kramer, 2013. Prevention and Early Detection of Breast Cancer, Harrison's Principles of Internal Medicine, 19th Edition, USA, Mc Graw Hill Company, 490 – 491, 163 –170.

Norman S. Williams, Christopher J.K Bulstode, and P. Ronan O'connell, Breast Cancer, Bailey and Love's Short Practice of Surgery, 25th Edition, UK, Hodder Arnold, 2008; 837 - 847.

American Cancer Society, Breast Cancer: Facts and Figures, 2008, at http//www.imaginis.com/breasthealth/www cancer.gov; accessed on date July 5, 2016.

Fray R.B. Prince, Dunns: Effects of a Psychological Intervention on Breast Self-Examination, Attitudes and Behaviors, Health Education Resource, 2006, 21: 287-295.

Rosenberg R. Levy and Schwartz R., Breast Cancer in Women Younger than 40 Years, Iar J. Kertil Women's Med, 2003, 48: 200-205.

World Health Organization, 1995, World Health Report Geneva, pp. 20-30.http//www.imaginis.com/breasthealth/ www cancer.gov; accessed on date June 23, 2016.

Ergete W. 1999. Fine Needle Aspiration of Palpable Breast Lesions with Histopathology, Correlation, *Ethiopian Journal of Health Development,* 13 (3): 181-183.

Solomon L. J., Mickey R. M., Raivikas C. J. *et al.* 1998. A Three Years Prospective Study of Adherence to Breast Cancer Screening Modalities, Preventive Medicine, 27 (6): 781-786 (Medicine).

www.umgc.org. University of Maryland, Marlin and Stewart, Greenbaum cancer center, 1:800,888.883 www.umgc.org; accessed on date June 17, 2016.

http://www.biomedcental.com/1471-2458/8/359 BMC, Public health 2008, 8:359; accessed on date June 17, 2016

http://www.ncbi.nih.gov/sites/enteriz-Gebremedhin A., Shamebo M., Clinical Patterns of Ethiopian Patients with Breast Cancer, *East African Med J.,* 1998 Nov: 75 (11): 640-43.

http://www.question.com/google.schder.qstjjsesioned lea, *Budden Journal of Community Health Nursing,* Volume 2, 1995.

Chiomic C. and S.R.N. Asulu, Knowledge, Attitude and Practice of Self-Breast Examination among Female Students of the University of Jbadar, *Nizena Pakistan Journal of Science,* 2007; 4 (3): 400 – 402.

Abdelfetah., M. Zaki, Bassili A. *et al.* 2000. Breast Cancer Diagnosis in Alexandria, Egypt, *Eastern Mediterranean Health Journal,* 6(1): 34-40.

25 years' Stride in Advancing Health Sciences, Ethiopian Journal of Health Sciences(EJHS), July 2015, Volume 25, Number 3, ISSN 1029-1857, pp. 209-215

http://www.breastcancer.org/symptoms/understand_bc/statistics, accessed on date Sep. 13, 2016.

http://www.wcrf.org/int/cancer-facts-figures/data-specific-cancers/breast-cancer-statistics, accessed on date Sep. 13, 2016.

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