

**ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH**



**ASSESSMENT OF BREAST SELF EXAMINATION PRACTICE AND
ASSOCIATED FACTORS AMONG WOMEN BETWEEN 20 UP TO 70
YEARS ATTENDING ON THE SELECTED PUBLIC HEALTH CENTERS
IN ADDIS ABABA, ETHIOPIA, 2015**

**In Partial Fulfillment Of The Requirements For The Degree Of Master Of Public Health in
Addis Ababa University College of Health Science School of Public health**

Prepared by Mahlet Mekonen

**Major advisor - Prof. Ahmed Ali
Co- advisor - Dr. Naod Firdu
Addis Ababa, Ethiopia, 2015**

**SCHOOL OF GRADUATE STUDIES
ADDIS ABABA UNIVERSITY**

As thesis research advisor, I hereby certify that I have read and evaluated this thesis Prepared under my guidance by Mahlet Mekonnen entitled Assessment of Breast self-examination practice and associated factors among women aged 20 up to 70 years attending on the selected public health centers in Addis Ababa, Ethiopia, 2015. I recommend that it be submitted as fulfilling the thesis requirement.

Major Advisor

Signature

Date

Co-Advisor

Signature

Date

As members of the Board of Examiners of the MPH thesis open defense examination, we certify that we have read and evaluated the thesis prepared by Mahlet Mekonnen and examined the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirements for the Degree of Master of Public health.

Chairperson

Signature

Date

Internal Examiner

Signature

Date

External Examiner

Signature

Date

Final approval and acceptance of the thesis is contingent upon the submission of final copy of the thesis to council of graduate studies (CGS) through the departmental or school graduate committee (DGC or SGC) of the candidate.

STATEMENT OF THE AUTHOR

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document. Every serious effort has been made to avoid any plagiarism in the preparation of this thesis.

This thesis is submitted in partial fulfillment of the requirement for master of public health degree to Addis Ababa University, College of Health Science, and School of public health. I would like to declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma or certificate.

Name: _____ Signature _____
Date _____

Department/program: Extension MPH program of Addis Ababa University, College of Health Science, and School of Public Health.

BIOGRAPHICAL SKETCH

The principal investigator was born in May 19, 1987 in Jimma. She attends her primary level education at Hermata government elementary school and Secondary level education at Medhinalem senior secondary school Addis Ababa. She graduated from Haromaya University with Bachelor of Science in Public Health in 2007. Currently she is working at Entoto fana Health center.

ACKNOWLEDGMENT

First, I would like to thank almighty GOD for all my achievement.

I would like to thank Addis Ababa University, College of Health Science, School of Public Health and Department of preventive medicine for giving us a chance to take part in this interesting program and valuable support in academic and research process.

It is a pleasure to thank my major Advisor, Prof. Ahmed Ali and Co- Advisor, Dr. Noad Firdu whose encouragement, guidance and support from the beginning of proposal development.

I am also grateful to thank Addis Ababa health bureau and the respective health centers for permitting this project to be carried out in the health centers and to the participants for their role in the project.

My special gratitude and deepest appreciation go to my Family for their endless enormous concern, moral support and encouragement throughout my study.

Finally, I am grateful thank my friends for giving me their time and support on this all process.

ACRONYMS AND ABBREVIATION

AAU	Addis Ababa University
ACA	American Cancer Association
ACS	American Cancer Society
AOR	Adjusted Odd Ratio
BSE	Breast Self-Examination
CBE	Clinical Breast Examination
CI	Confidence Interval
COR	Crude Odd Ratio
CSA	Central Statistical Agency
ECA	Ethiopia Cancer Association
EDM	Early Detection Method
GLOBOCAN	Global Burden of Cancer
HC	Health Center
HBM	Health Belief Model
IARC	International Agency for Research of Cancer
LRCs	Low Resource Countries
MOH	Ministry of Health
RHB	Regional Health Bureau
ROC	Reproductive Organ Cancer
SPH	School of Public Health
SPSS	Statistical Package for Social Science
WHO	World Health Organization
US	United State

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ABSTRACT

Back ground: Breast cancer is the leading cause of cancer death in women age between 40 and 55 year worldwide. The Study estimated that 70% of all breast cancer cases worldwide will be in low and middle resource countries by 2020. In Ethiopia breast cancer is the second most often occurring cancer types having a lion's share for higher maternal deaths in the country. Breast self-examination is one of the methods used for early detection of breast cancer. In resource scarce countries like Ethiopia, Breast self-examination is promoted for early detection of breast cancer to prevent related morbidities and mortalities.

OBJECTIVE: To assess the magnitude of Breast Self-Examination practice and associated factors among women between 20 up to 70 years attending the selected public health centers in Addis Ababa, Ethiopia, 2015.

METHODS: A health facility based cross-sectional study was conducted from March-April/2015 among women between 20 up to 70 years attended in selected public health centers in Addis Ababa, Ethiopia, 2015. Health centers were selected by simple random sampling technique and the study participants were selected using Systematic Random Sampling Technique. Data were collected by using a structured and pretested questionnaire. Data transferred from the Epi info database to SPSS database using stat transfer for analysis. Logistic regression analysis was fitted and odds ratios with 95% Confidence intervals and p-values were computed to identify factors associated with the practice of Breast self-examination.

Result: There were 406 respondents, which gives a 96% response rate from the expected 422. From the 14 question designed to assess BSE knowledge of the respondents 88(21.7%) scores the median seven and above. Below one fourth 46(11.3%) of the respondents were ever practiced BSE, from that only 24(6%) regularly practiced. The most common reason for not practicing BSE, they didn't know how doing it 224 (55.2%). Women who have knowledge of BSE two times more likely practice BSE (Knowledgeable for BSE AOR 2.227 [1.135 – 4.3]) and also women who have confidence to do BSE six times more likely practice BSE (Have perceived confidence AOR 5.645[2.493 – 12.7]). Therefore, the two variables were that statically significant association with the practice of BSE.

Conclusion: This study revealed a low level of ever practice BSE and from that few of them regularly practice Breast self-examine. Thus warrant to the concerned bodies for creation of breast cancer awareness campaigns and screening programs at all levels of the health sector to promote early detection and diagnosis in the prevention of breast cancer in women in Ethiopia.

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1. INTRODUCTION

1.1 Background

Cancer is an excess proliferation of abnormal cell (1). Breast cancer is one type of cancer which is a malignant tumor that starts in the cells of the breast. It occurs mostly in women, but men can also be affected too (1). Breast self-examination (BSE) is one of screening methods, which involves the woman herself looking at and feeling each breast for possible lumps, distortions or swelling (1).

Breast cancer is the most common cancer among women, compared to other cancer both in developed and developing regions (2, 3). It is the second cause of cancer among women worldwide with an estimated 1.38million (138415) new cases diagnosed in 2008. It accounts 10.9% of all cancer cases next to lung cancer and the fifth cause of overall cancer mortality with an estimated 458,000 deaths in 2008(3). Breast cancer estimated that 70% of cases worldwide will be in low and middle resource countries by 2020(4). It is also the leading cause of cancer deaths in women aged between 40 and 55 years (5).

Breast cancer is the most commonly diagnosed cancer in women with age adjusted incidence rate of 28per 100,000 and the second leading cause of death in women in Africa. The incidence varies across the continent ranges from 19·3 per 100 000 per year in eastern Africa to 38·1 per 100 000 in Southern and Western Africa (4).

Breast cancer incidence has been increasing in most regions of the world, but there are huge inequalities between rich and poor countries. Incidence rates remain highest in more developed regions, but mortality is relatively much higher in less developed countries due to a lack of early detection and access to treatment facilities (3). For example, in Western Europe, breast cancer incidence has reached more than 90 new cases per 100 000 women annually, compared with 30 per 100 000 in eastern Africa. In contrast, breast cancer mortality rates in these two regions are almost identical, at about 15 per 100 000, which clearly points to a later diagnosis and much poorer survival in eastern Africa (3). These lower breast cancer survival rates are associated with

lack of early detection programs, advanced stage of disease at presentation, lack of functional diagnostic and treatment facilities and limited availability of professional care (6).

According to GLOBOCAN 2008(IARC) report in Ethiopia, breast cancer incidence was 18.2%, mortality 14.1% and 5year prevalence 25% (7). Breast cancer was reported to be the second out of the ten top cancers registered in Black Lion Radio Therapy Center (5).

Breast self-examination (BSE) is a simple exercise which can potentially save the life of a woman. It is recommended for every woman above the age of 20 years to be done for 20 minutes every month (1). A woman who performs regular BSE may be more motivated to seek medical attention, including Clinical Breast Examination (CBE) and mammography (8). A study conducted in Ethiopia among women with breast cancer shows that more than half of the patients were age 50 and younger (9). Around 69.6% of patients ignored their symptoms initially for an average of more than one and half year (9). Factors associated with increased breast cancer incidence include increased life expectancy, reduction in competing risk of mortality from infectious diseases, and change in reproductive and lifestyles patterns (6).

1.2 Statement of the problem

Breast cancer incidence is increasing both in developed and developing regions (4). In 2008, an estimated 636,000 incident cases were diagnosed in high resource countries, while 514,000 cases were diagnosed in low and middle resource countries. It is the most frequent cause of death among women both in developing 269,000deaths and developed region with an estimated189,000 deaths(4)

In Low Resource Countries late presentation on diagnosis of breast cancer is common, more than 70% of patients present with advanced disease. Delayed presentation has been associated with low levels of community and health professionals' awareness of breast cancer, barriers to access to appropriate treatment, difficulties in navigating health care systems, ineffectual health care systems, and absence of detection programs. In the absence of systematic screening programs, in LRCs most breast cancer present with self-discovered "painless breast lump" (6).

In Ethiopia, breast cancer is the second common cancer next to cervical cancer. It is estimated that around 10,000 Ethiopian women and men have breast cancer with thousands of more cases unreported as women living in rural areas often seek treatment from traditional healers before seeking help from the government health system. In Ethiopia, Breast cancer is become fatal due to late presentation, limited resources, low awareness of breast cancer and its symptoms and strong traditional beliefs that can delay biomedical care (9).

Communicable and infectious diseases are the major health issues in Ethiopia, most efforts and resources are engaged in it. Cancer and particularly breast cancer is on the bottom of their priority lists. That's why; there is no much infrastructure and facilities to fight against breast cancer (10).

Diagnosis of breast cancer during the early stage of the disease play big role in decreasing mortality, morbidity and it is important for effective cost of management of the illness. There are various methods of early detection of breast cancer. These include Breast self-examination, clinical breast examination and mammography. Although some early detection methods, may remain inaccessible to women in developing countries due to limited diagnostic and curative facilities. Mammography cannot be routinely applied in countries with limited health service resources (11), since it is expensive it need technology and trained professional. CBE also need professional skills and health facility visit to be conducted (12). Breast self-examination is still recommend as a general approach to increasing breast health awareness and allows for early detection of any abnormalities. BSE continues to be recommended by health care practitioners because it is free, simple, need low technology and teaching is possible (13).

Despite its prevalence, reproductive organ cancers (ROC) are not addressed as a major public health problem at any level of the health care system. Nationwide, there is no organized ROC prevention, education, screening or curative care program. (14). Moreover limited studies are conducted about BSE practice among Women calls for exploration of the practice of BSE and

associated factors among Women attending public health centers in Addis Ababa. . The finding of this study will provide information to the concerned bodies (Governmental and nongovernmental organizations) to plan important interventions to improve women practice of breast self- examination.

1.3 Significance of the study

The study is important in providing information towards better understanding of the practice of BSE and associated factors among women attending public health centers in Addis Ababa. Moreover, it can aid in the design and implementation of effective prevention programs and it may encourage other researchers and policy makers to carry out a more extensive research in this particular area.

2. LITERATURE REVIEW

2.1 Magnitude of breast cancer

Global burden statistics shows that, although it is still the leading cause of cancer mortality in women (the 411,000 annual deaths worldwide, represent 14% of female cancer deaths), the prognosis of breast cancer is generally good, and this cancer ranks as the fifth cause of death from all cancers (7). The very favorable survival of breast cancer cases in western countries, for example, (89%) at 5 years cases registered by the U.S. Surveillance, Epidemiology and End Result (SEER) program in 1995–2000 (7).

An estimated 60,290 new cases of female breast carcinoma in situ are expected to be diagnosed in 2015, accounting for about 20% of all breast cancers in women (15). Breast cancer incidence rates vary widely across the world, from 19.3 per 100,000 women per year in East Africa to 89.9 per 100,000 women per year in Western Europe (16).

Incidence of breast cancer on a global scale has increased from 641 000 in 1980 to 1 643 000 in 2010 with an annual increment of 3.1% (17). Since 1980, the mortality of breast cancer has also increased from 250 000 to 425 000 in 2010 with an annual increase of 1.8 % (17).

Breast cancer is the top cancer in women both in the developed and developing world (18). The incidence of breast cancer is increasing in the developing world due to increased life expectancy, improved control of infectious diseases, change in reproductive and lifestyle factors, which contribute to increased breast cancer risks (18).

Breast cancer is one of the leading causes of death among women between 40 and 55 years of age and is the second overall cause of death among women globally. While breast cancer usually occurs in females of over age of 40 years, it also happens in females of younger ages (19).

A retrospective review done on 822 women diagnosed breast cancer in a decade conducted in the United States of America in 2011, breast cancer is the most common form of cancer in the

United States women (approximately 216,000 new cases were diagnosed in 2004), and the second most common cause of cancer deaths (approximately 40,000 deaths per year) (20). Each year, an estimated 809,000 person-years of life are lost due to breast cancer. Increase in age-adjusted incidence of breast cancer among women 40 years of age and younger statically significant ($P < .005$) (20).

According to GLOBOCAN 2008, breast cancer ranks as the fifth cause of death from all cancers overall (458 000 deaths), but it is still the most frequent cause of cancer death in women in both developing (269 000 deaths, 12.7% of total) and developed regions, where the estimated 189 000 deaths is almost equal to the estimated number of deaths from lung cancer (188 000 deaths) (4).

An estimated 232,670 new cases of invasive breast cancer are expected to be diagnosed among women in the US during 2014; about 2,360 new cases are expected in men. An estimated 40,430 breast cancer deaths (40,000 women, 430 men) are expected in 2014. Breast cancer ranks second Cause of cancer death in women after lung cancer (21).

A prospective study conducted in Ethiopia 1998, to obtain information on demographic characteristics, clinical profile and problems related to early diagnosis and treatment of breast cancer in 72 Ethiopian patients (62 females and 10 males) showed that 72% of females developed breast cancer at younger age (were premenopausal) and 76% had advanced disease (Stages III and IV) at presentation (22).

While the average life expectancy for women in Ethiopia is over 58 years, approximately 44% of patients with breast cancer are under the age of 40 (23). For of a population of 80 million people, there are very limited number of oncologists and only one cancer hospital, Tikur Anbessa, in Ethiopia's capital city of Addis Ababa, that provides radiation, complex surgery and chemotherapy. Gradually building the capacity for knowledge and awareness of cancer is the first step to tackle the burden of cancer in developing countries, along with other non-communicable diseases, which is expected to increase (23).

2.2 General situation about BSE

The American Cancer Society (A.C.S.) stated that at least 90% of women who develop breast cancer discover the tumors themselves (1). The BSE technique involves palpation of the breasts for lumps with the tips or pads of the fingers. This could be performed while the woman is sitting down, standing or lying down (1). BSE carried out at age of 20 once-monthly, between the 7th and the 10th day of the menstrual cycle (8). Women who are pregnant or breastfeeding can also choose to examine their breasts regularly (1).

Although there is controversy surrounding the efficacy of BSE in countries where CBE and mammography are readily available, elsewhere BSE remains a cost-effective method to detect breast cancer in resource-constrained countries. A woman who performs regular BSE may be more motivated to seek medical attention, including CBE and mammography (8).

A sixty nine participants in a comprehensive breast cancer treatment program at the main national cancer hospital in Ethiopia were interviewed using mixed qualitative and quantitative approaches, with breast cancer shows that more than half of the patients were age 50 and younger (9). Breast lump was the first symptom experienced by the 82.6% of the patients. Around 69.6% of patients ignored their symptoms initially for an average of more than one and half year. Although there is debate about the effectiveness BSE in lowering breast cancer mortality, it is important in resource poor countries like Ethiopia in promoting breast lump awareness to encourage women to seek health advice, to trigger action and enter into care sooner (9).

2.3 Breast self- examination practice among women

A study done in Kiewit 2012, which used cross sectional and case control study design showed, only 109(12%) mentioned that they had practiced BSE from total sample size 520 .Women who attended primary care for maternity and child care, participated in this study (24).

Cross-sectional quantitative survey done in Yerevan, 1999 showed statistically significant difference between the two age groups, with the higher quantity of younger women who ever heard about BSE (25). The other factor, which was associated with women's awareness of BSE, was the employment status of women ($p=0.02$). The logistic regression analysis showed that the employed women were more likely to know about BSE. BSE performance was found to be associated with income (the higher the income, the lower is the odds of BSE practice, $p=0.034$) (25)

A population based randomized trial in Iranian 2008, indicated that performing breast self-examination is significantly related to: age ($P = 0.00006$), marital status ($P = 0.03$), education ($P < 0.00001$), knowledge about breast cancer ($P < 0.00001$), and knowledge about breast cancer screening programs ($P < 0.00001$), but not to personal ($P = 0.2$) and family ($P = 0.7$) history of breast problems. In fact the results suggest that women aged 40 to 59, married, with higher education and more informed about breast cancer were more likely to perform BSE (26).

A cross sectional study design used with a sample size 261 women who were referred to the health care and medical centers in Hamadan city in Iran 2005, showed significant association between level of knowledge, attitude and practice of BSE and CBE ($P < 0.0001$) (27).

Amongst 231 female traders recruited during a cross-sectional study in Ibadan 2005, Nigeria, only 89 (37.1%) of the traders were aware of BSE and 51 (18.1%) of the respondents had ever practiced BSE (28). The level of awareness of BSE was highest 38.7% between age 50-59 year and was lowest among those less than 30 and 60 years ($p = 0.067$). A woman who has tertiary education was more knowledgeable about BSE, while those with primary education were the least knowledgeable ($p = 0.045$) (28).

2.4 Attitude towards Breast self- examination

The Health belief model has frequently been applied to breast cancer screening. The model stipulates that health-related behavior is influenced by a person's perception of the threat posed by a health problem and by the value associated with his or her action to reduce that threat (29). The HBM consists of six concepts these including: perceived susceptibility to an illness,

perceived seriousness of the illness, perceived benefits for the presumed action, perceived barriers for the presumed action, confidence in one's ability, and health motivation (29).

A study conducted among Jordanian women used cross sectional and correlational study design used with a sample size 519. Assessed factors associated with BSE shows that a statistically significant finding in the BSE practice group's mean ranks of BSE-benefit and confidence which were higher than in the non-practice group ($p = 0.003$, $p < 0.001$) (29). The mean rank of BSE-barrier in BSE-practice was lower than in the non-practice group and this was also found to be statistically significant ($p < 0.001$). Susceptibility, seriousness and motivation were not significant variables (factor) in BSE practice (30).

In a cross-sectional study carried out amongst 406 female teachers in the Ilorin West Local Government area of kwara State, Nigeria, in 2004, one hundred and fifty-five (45.5%) of the respondents strongly agreed that it is highly desirable to examine the breasts monthly, 125 (36.7%) agreed, 38 (11.1%) were undecided, 14 (4.1%) disagreed and 9 (2.6%) strongly disagreed. More than half of the respondents, 190 (55.7%) strongly disagreed that breast self-examination is very useful to detect breast swellings, 110 (32.3%) disagreed, 25 (7.3%) were undecided, 9 (2.6%) agreed and 7 (2.1%) strongly agreed. Majority of the respondents (75.0%) had positive attitude to BSE, 17.9% had fair attitude, while only 7% of them had a negative attitude to BSE (31).

A study conducted in Haramaya University on medical students 2014 used cross sectional study design with a sample size 126, from that 85.7% participants agreed that early detection improves survival. Almost 93.6% of students agreed that BSE can be an important tool for early detection of breast cancer (32).

Conceptual Frame Work

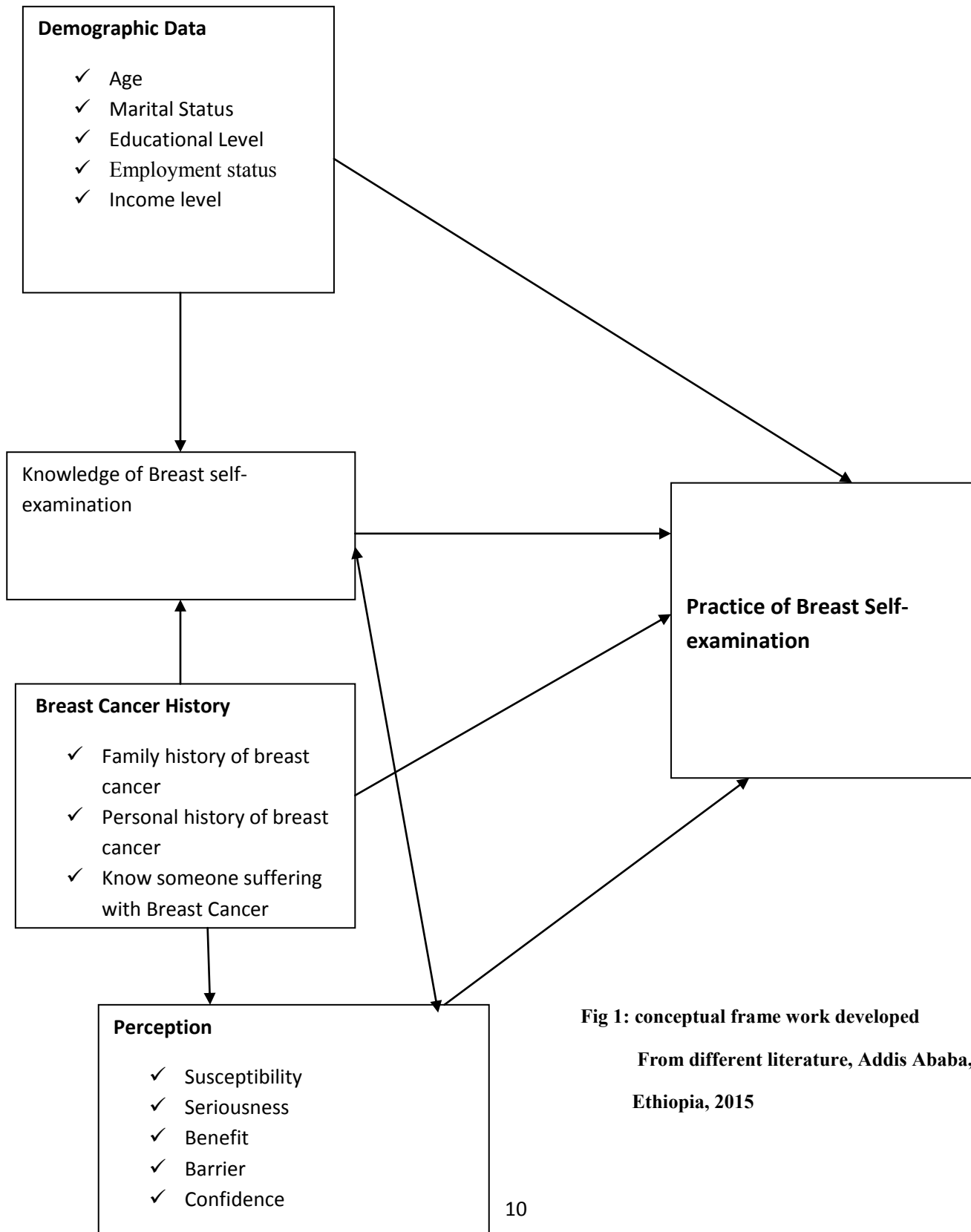


Fig 1: conceptual frame work developed
From different literature, Addis Ababa,
Ethiopia, 2015

3. OBJECTIVE OF THE STUDY

3.1 General objective

- To assess the magnitude of Breast self-examination practice and associated factors among Women aged 20 up to 70 years attending the selected public health centers in Addis Ababa, Ethiopia, 2015.

3.2 Specific objectives

- To determine the magnitude of breast self-examination practice among women aged 20 up to 70 years attending the selected public health centers in Addis Ababa, Ethiopia, 2015.
- To identify factors associated with Breast self-examination practice among women aged 20 up to 70 years attending the selected public health centers in Addis Ababa, Ethiopia, 2015.

4. METHODS AND MATERIAL

4.1 Study design

Facility based Cross-sectional study design was used.

4.2 Study area and period

The study was conducted in Addis Ababa from March to April 2015. According to CSA, 2008, Addis Ababa is a capital city of Ethiopia with an estimated area of 540.01 square kilometers and had an estimated total population of 2,738,248 consisting of 1,304,518 men and 1,433,730 women (33). Addis Ababa had 42 Hospitals (public and private), 36 Health Centers and 35 Health posts (33). Currently, around 84 health centers found in Addis Ababa.



FIG.2 Map of Addis Ababa, destination 360 map data, www.destination360.com

4.3 Description of population

4.3.1. Source population

The source population comprised of all women attending public health centers in Addis Ababa.

4.3.2 Study population

Study population comprised of all women between 20 up to 70 years attending the selected public health centers in Addis Ababa at the time of the study.

4.3.3 Inclusion and exclusion criteria

- **Inclusion criteria:** Women aged 20-70 years in the selected public health centers during the study period were included in the study.
- **Exclusion criteria:** Women diagnosed with Breast cancer.

4.4 Sample size determination

Before sample size determination literature were reviewed to get information on the prevalence of BSE practice, and factors associated with BSE practice from similar studies. The prevalence for practice of Breast self- examination in one of the study in Malaysian women 2002, which was 46.8%, was utilized to estimate the sample size (34).

4.4.1 For specific objective one

To determine the prevalence of BSE practice, single population proportion formula was used by taking the proportion of women with practice of BSE to be 46.8% (33).

By using this formula:

$$n = \frac{Z_{\alpha/2}^2 \cdot p(1-p)}{d^2} = \frac{(1.96)^2 \cdot 0.468(1-0.468)}{(0.05)^2} = 382.59 \approx 383$$

Considering 10% non-response rate, the total sample size was =**422**

Where: P= the prevalence of BSE practice among Women

d =margin of error considered to be 5%

$Z_{\alpha/2}$ = Z-value for 95% confidence level which is 1.96.

n = the required sample size

4.5 Sampling procedure

Health centers were selected by simple random sampling technique. During the study period, there were a total of 84 health centers in Addis Ababa. Among those, 21(25.9% taken from the total HC) health centers were selected randomly. The sample size in each health center was proportional to population size. The study participants were selected using Systematic Random Sampling Technique.

To calculate the sampling interval (K), the average number of women who visited selected health centers per day was divided by number of women required in each HC. By using lottery method choice of the starting point was made and the next participant was determined by the sampling interval. If the selected individual did not fulfill the inclusion criteria, it was replaced by the next client and the interval continued accordingly.

Table 1: Sampling table of the study population in Addis Ababa, Ethiopia, 2015

SR.	Selected HC	NO of women attended HC last month (N)	Average women daily seen in each HC last month (n')	No of women required from each HC (n)	No of women required in each selected HC per day. (n'')	The sampling interval (K)
1	Bole 17HC	3016	137	31	6	23
2	Dilfere HC	1206	55	12	2	28
3	Goro HC	2361	107	24	5	21
4	Woreda 9 H	3818	174	39	8	22
5	Selam HC	2034	93	21	4	23
6	Arada HC	3002	136	31	6	23
7	Kebena HC	2335	106	24	5	21
8	Chercher HC	900	41	9	2	21
9	Shegole HC	1106	50	11	2	25

10	Entotofan HC	2165	98	22	4	25
11	Shirome HC	1996	91	20	4	23
12	Adis ketema H	1542	70	16	3	23
13	Woreda 9 HC	2604	118	27	5	24
14	Kirkos HC	1145	52	12	2	26
15	Meshualekia HC	1206	55	12	2	28
16	kasanches HC	1422	65	15	3	22
17	Lideta HC	2888	132	30	6	22
18	Kolfe HC	1686	77	17	3	27
19	Beletshachew	2441	111	25	5	22
20	Wereda 9 HC	1406	64	14	3	21
21	Lomi medaHC	910	41	10	2	21
	Total	41,189		422		

Where N= Number of women registered in the last month in each health center (data from each health center).

n = number of women required for the study from each health center (calculation proportion to population size)

n' = average number of women per day that visited HC last month (data from each health center).

n'' = number of women's required in each selected health center(by dividing n to number of data collection day)

$K = \text{sampling interval calculated by } n'/n''$. Using the lottery method, the starting point was chosen and the next participant was determined by sampling interval.

4.6 Data collection procedure

A structured questionnaire developed after reviewing relevant literatures was used to collect data. The questionnaire was initially prepared by reviewed different literature and then translated to Amharic language, and was translated back for any inconsistencies to English to check any in consistency. For data collectors and supervisor training was given by the investigator to make them familiar with the data collection tool. Pretest was conducted on 5% of the sample size in health facilities not included in the actual study, and based on the result necessary modification was done. The questionnaire contained five parts, comprising of socio demographic, Family history of breast cancer, Knowledge, and attitude about BSE and practice of BSE.

Data were collected after obtaining informed consent from the study participants by interviewers and used separated room and place for interview to keep the privacy of the women. Completeness of questionnaire was checked and final reviewed questionnaire was returned to the principal investigator.

4.7 Definition of Variables

4.7.1 Independent variables

- Socio demographic characteristics such as age, marital status, educational level and monthly income.
- Family history of breast cancer
- Knowledge of BSE
- Perception

4.7.2 Dependent Variable

- Practice of BSE

4.8 Operational definitions

Regular BSE practice: A woman who performs BSE once in a month.

Knowledgeable- participants who scored the median and above value from the provided 14 closed ended questions about the BSE and breast cancer knowledge.

Not knowledgeable- participants who scored below the median value of the provided 14 closed ended questions about the BSE and breast cancer knowledge.

Perceived susceptibility- participants whose answers regarding their risk of breast cancer and have 5 questions, whose mean were under 3 were considered as low perceived susceptibility and above 3 were considered as good perceived susceptibility.

Perceived severity - participants whose answers regarding the assessment of how serious breast cancer was viewed by those women and have 7 questions, whose mean below 3 were considered as low perceived severity and above 3 were considered under good perceived severity.

Perceived benefits- participants whose answers regarding the benefit that doing BSE was result to early detection of breast cancer viewed by 6 questions, whose mean below 3 were considered as low perceived benefits and above 3 were considered under good perceived benefits.

Perceived barriers- participants whose answers regarding barrier to do BSE practice viewed by 6 questions, those whose mean below 3 were considered as good perceived barriers and above 3 were considered as low perceived barriers.

Perceived confidence- participants whose answers regarding confidence to do BSE practice viewed by 6 questions, those whose mean below 3 were considered as good perceived confident and above 3 were considered as low perceived confident.

Perceived motivation- participants whose answers regarding motivation to do BSE practice viewed by 5 questions, those whose mean below 3 were considered as good perceived barriers and above 3 were considered as low perceived barriers

4.9 Data Analysis procedures

After data collection, each questionnaire was checked for completeness and consistency. Data entry was done using Epi info version 3.5.4. The entered data were cleaned and exported to SPSS statistical package for analysis. Different frequency tables, graphs and descriptive summaries were used to describe the study variables. Bivariate analysis was applied primarily to see the association of independent variables with the practice of BSE. Variables that had association with the practice of BSE (p value < 0.2) were entered into the multivariate Logistic regression model for controlling the possible effects of confounders and finally the variable that had significant association were identified by calculating odds ratio, with 95% confidence interval and P value < 0.05 were declared statistically significant.

4.10 Data quality management

To assure data quality, data collection tool was prepared after intensive review of relevant literatures from similar studies. Training was given for both data collectors and supervisors concerning on data collection tool for 2 days by the principal investigator. Pre-testing of the questionnaire was carried out on the 5% of sample in health centers that were not included in the study. Based on the result obtained, necessary modification was made. The completeness of the data were checked by data collectors during data collection and also immediately after data collection by the supervisor and principal investigator.

4.11 Ethical considerations

The proposal was submitted to the Addis Ababa University College of Health Sciences, School of Public Health, and the Department of Preventive Medicine to secure Ethical Clearance. Permission letter was obtained from Ethical Review Board and submitted to the Addis Ababa Regional Health Beuro and different concerned authorities to obtain their cooperation. The letter was written from Addis Ababa RHB to the respective study facilities to enhance the conduct of this study.

Informed consent was obtained from individuals selected to be respondents of this study. For this purpose, an information sheet with consent form was attached to each questionnaire which explained about the purpose of the study, confidentiality, and the respondent's full right of voluntary participation. Different measures were taken to assure the confidentiality of study subject's response. Names or any identification was not used.

4.12 Dissemination of the result

The finding of the study was submitted in a form of a thesis to AAU, College of Health Sciences, School of Public Health, and Department of Preventive Medicine. The result will be publicly defended following submission. Copies will be provided to relevant stakeholders. Efforts will be made to present the results in scientific conferences and journals.

5. RESULT

5.1 Socio demographic characteristics of participants

A total of 422 female participants was expected, but 406 women responded which saw a 96% of respondents rate. The participants were between 20-55 years with a mean age of 28 and standard deviation of 5.4 years. The respondents predominantly were between the age of 20 to 29 282(69.5%), next to that 110(27.1%) between 30-39 years and 14(3.4%) above 40 years. Regarding marital status of participants 156(38.4%) single, 235(57.9%) married and the rest 15(3.7%) included separated, widowed and divorced group. According to this study, 28 (6.9%) participants not have formal education, 85(20.9%) received primary education, 125 (30.8%) have secondary education and 168 (41.4%) have tertiary education and above. Employment status of the respondents,133(32.8%) civil servants, 116 (28.6%) unemployed, 52(12.8%) private employed and 51(12.6) self-employed. Among the respondents 167(41.1%) monthly income was less than 445 ETB as shown in table 2.

Table 2: Socio demographic characteristic of women attending public health centers in Addis Ababa, Ethiopia 2015

Variable	N (%)
Age group:	
20-29	282(69.5%)
30-39	110(27.1%)
>40	14(3.4%)
Marital status	
Single	156(38.4%)
Married	235(57.9%)
Separated/widowed/divorced	15(3.7%)

Educational level:	
No formal education	28(6.9%)
Primary education.	85(20.9%)
Secondary education.	125(30.8%)
Tertiary education and above	168(41.4%)
Employment status:	
Civil servants	133(32.8%)
Unemployed	116(29.3%)
Private employed	52(12.8%)
Self employed	51(12.6%)
students	51(12.6%)
Monthly income (in birr)	
<445	167(41.1%)
446 -1200	65(16.0%)
1201 – 2500	88(21.1%)
2501 – 3500	47(11.6%)
>3501	39(9.6%)

5.2 Family History of breast cancer

Around 389(95.8%) reported that they did not have a family member diseased or died with breast cancer. Only 1.5% of the respondents whose mother died or sick of breast cancer and 8.9% knew someone suffered from breast cancer as shown table 3.

Table 3: Family history of breast cancer among women attending public health centers in Addis Ababa, Ethiopia, 2015.

Variable		Yes N (%)	No N (%)
Family member died or sick of breast cancer		17(4.2%)	389(95.8%)
Family member died of breast cancer	Mother	6(1.5%)	
	Sister	1(0.2%)	
	Grand mother	1(0.2%)	
	Aunt	9(2.2%)	
know someone currently suffer from breast cancer		36(8.9%)	370(91.1%)

5.3 Knowledge of Study Participants about Breast Self-Examination

To assess the knowledge of the respondents 14 closed ended questions were provided only 21.7% scores the median seven and above value as shown in fig.3. Regarding age, the highest knowledge scored was found in the age group of 20-29 year (14.5%), married 44(10.8%) and tertiary and above educational level 52(12.8%). An assessment of the participants knowledge of screening methods revealed that, 243(59.9%) participants know Breast cancer screening methods, from those 112(27.6%) knows types of screening methods. About 215(53%) of the respondents had heard about BSE previously. The source of information, health professionals were the predominant source 107(26.4%) followed by television 94(23.2%), Radio 40(9.9%) and friend 28(6.9%). Regarding the sexes that 41(10.1%) said both sexes can perform BSE and, only female said 363(89.4%) participants. 47(11.6%) participants said BSE practice began below 20 years, 189(46.6%) participants said at age 20 and above, 13(3.2%) said at age 35 and above, 157(38.7%) respondents they didn't know at what age began. Participants replied for the question how often should perform BSE, 79(19.5%) of participants said every week, 82(20.2%) said every month, 23(5.7%) said every three months and 194(47.8%) didn't know how often to

perform BSE. Half of the participants (50.5%) said doing BSE to look out breast tumor, (42.4%) said to differentiate size of the breasts, (24.4%) said to see change on the nipple and unusual discharge and (18.7%) to see change in skin color.

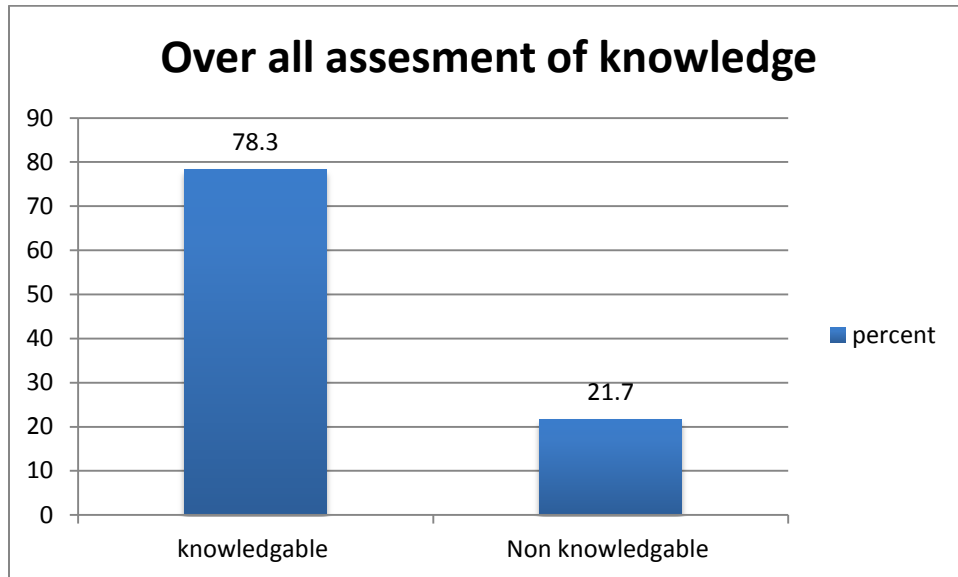


Figure 3: Over all knowledge assessment of breast self- examination among women aged 20 up to 70 years attending the selected public health centers in Addis Ababa, Ethiopia, 2015

5.4 Perception of participants related to breast self-examination practice

5.4.1 Perceived susceptibility

Variables which needed to measure the perception of participants regarding breast self-examination revealed that, 340(83.8) of the participants perceived that they might no chance of getting breast cancer. Besides, some of the respondents (17%) either disagreed or strongly disagreed with the likelihood of developing breast cancer, In general 367(90.4%) of the respondents consider themselves as not susceptible to the disease whereas the rest consider themselves as a susceptible. See Appendix 4 and table 5

5.4.2 Perceived Severity

One hundred eighty two (44.8%) of participants agreed with the statement, the thought of breast cancer scares me and 38.2% disagree on the statement, If I had breast cancer my whole life

would change. In general, of the respondents 238(58.6%) were shown to perceive breast cancer as a least serious disease but the rest of the respondents consider it as a serious illness. See Appendix 4 and table 5

5.4.3 Perceived Benefits

Majority of the respondents agree with the statements stated to know their perception regarding the benefits of BSE. More than half of the participants (51.2%) believe that BSE will help them to find a lump that might become cancerous in the future if they complete their monthly breast self- examination. In general 291(71.7%) of them were shown to perceive the benefits of BSE while the rest think that it is not beneficial. See Appendix 4 and table 5

5.4.4 Perceived Barrier

Nearly half 156(38.4%) of the participants mention that, It is hard to remember to do breast examination and also majority 232(57.1%) do not think that doing BSE is embarrassing. In general majority 330(81.3%) of them do not agree on the mentioned barriers whereas the rest did agree. See Appendix 4 and table 5

5.4.5 Perceived Confidence

Around 182(44.8%) of the participants was not confident enough to do BSE and 202(49.8%) perceived that they were not sure of the steps to follow while conducting BSE. In contrast 201(49.5%) agreed able to identify normal and abnormal breast tissue when they did breast self-examination. In general 223(54.9%) of the participants were shown to have not perceived confidence in practicing BSE. See Appendix 4 and table 5

5.4.6 Perceived Motivation

More than half of the participants show motivation to keep them healthy and to engage in activities, two third of the participants 267(65.8%) in our study agreed that it is important to carry out activities which will help to keep them healthy and 191(47%) disagree on regular checkup even they did not sick. In general 386(95.1%) of the participants were showed to have perceived health motivation in practicing BSE. See Appendix 4 and table 5

5.5 Practice of respondents related with breast self- examination

This study show that only 46(11.3%) of the study participants ever practiced breast self-examination, from those 24(6%) reported had BSE practice regularly. The reason why they practiced BSE was 2(0.5%) of them had previous breast problem, 2(0.5%) of them fear of breast cancer from the family history, 15(3.7%) of them recommended by health professional and 24(5.9%) of the participants said for early detection and treatment. Twenty three (5.7%) were started practicing BSE on the age 20 – 30 years and 20(4.9%) of the respondents said started below 20 years. Only 6(1.5%) of the participants practiced BSE at the right time 2-3 days after menstruation stopped and 34(8.4%) done BSE when it comes to their mind rather not have regular time. Only 5(1.2%) of the participants practiced BSE 10 – 12 times in the last 12 month and the reason not to practice 10 – 12 times in the last 12 month predominantly 33(8.1%) forgetfulness and 4(1%) of them said too busy as showed table 4

Table 4: Assessment of BSE practice among women attending public health centers in Addis Ababa, Ethiopia, 2015

variable	(N=46)(11.3%)
Reasoning why BSE did	
• Had previous breast problem	1(0.2%)
• Fear of breast cancer from family history	2(0.5%)
• Recommended by health professional	15(3.7%)
• Early detection and treatment	24(5.9%)
• Fear of developing breast cancer	4(1%)
Frequency of practicing of BSE	
• Once in a week	6(1.5%)
• Once in a month	12(3%)
• Once in a 3month	1(0.2%)
• Once in a 6month	1(0.2%)
• When it comes to mind	25(6.2%)
• I don't know	1(0.2%)

Age when you start practicing	
• < 20 year	19(4.7%)
• 20 – 30 year	23(5.7%)
• 31 – 35 year	2(0.5%)
• > 35 year	2(0.5%)
The time BSE did	
• 2 to 3 days after menses sensation	6(1.5%)
• When it comes to mind	33(8.1%)
• Regular day of each month	3(0.7%)
• Few day before menses	1(0.2%)
• Any time during menses	3(0.7%)
BSE in the last 12 month	
• 10 -12 times	5(1.2%)
• 7 - 9 times	6(1.5%)
• 4 – 6 times	8(2.0%)
• 1- 3 times	17(4.2)
• I didn't perform in the last 12 month	10(2.5%)
Reason not to did 10 – 12 in the last 12 month	N=41
• Forgetfulness	32(7.9%)
• Too busy	4(1%)
• Performing causes discomfort	1(0.2%)
• Fear of finding something of having breast cancer	3(0.7%)
• Not convinced about its effectiveness	1(0.2%)

The reason not practiced BSE predominantly 224 (55.2%) participants did not knew how to do it, 91(22.4%) claim they didn't had breast problem, 19(4.7%) doubt on effectiveness of BSE and 13(3.2) of them scared being diagnosed breast cancer as showed figure 4.

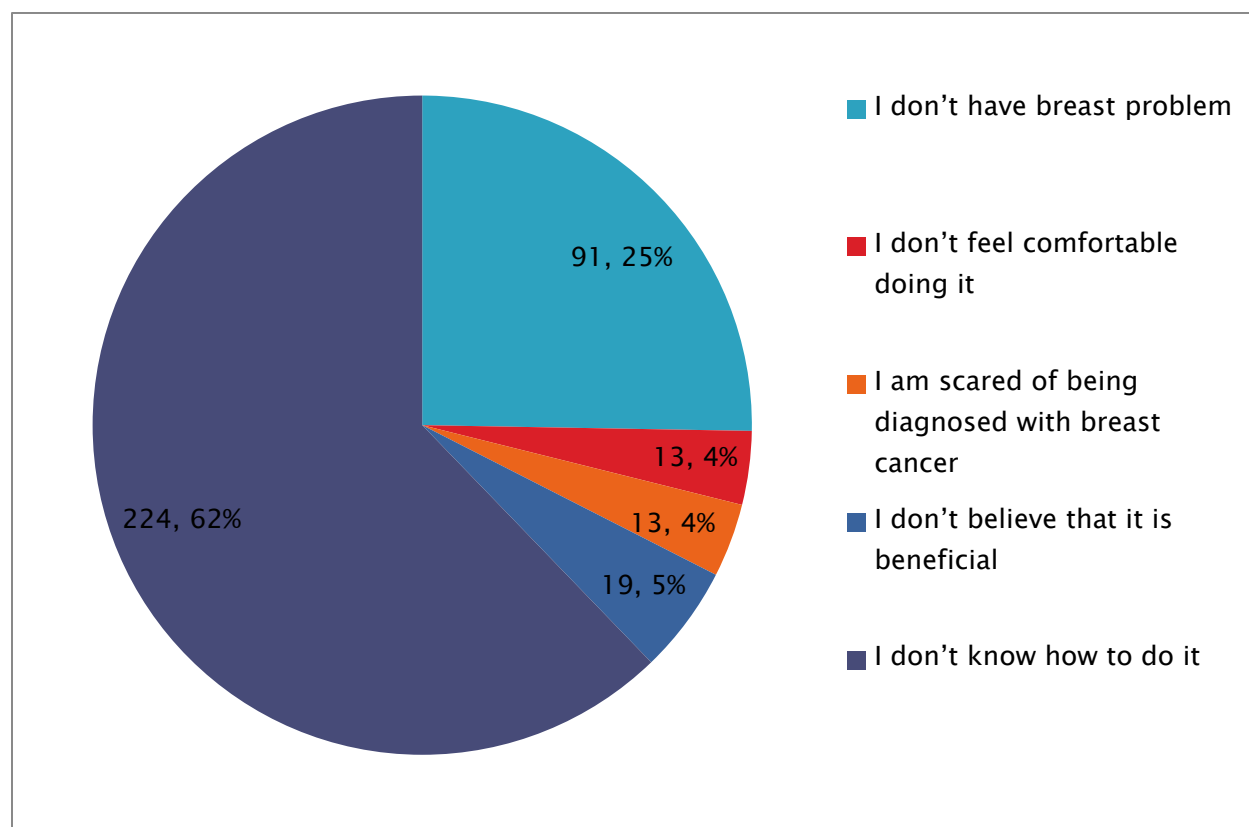


Figure 4: Reason for not practice BSE among women aged 20 up 70 years attending the selected public health centers, Addis Ababa, Ethiopia, 2015

Table 5: Frequency distribution of BSE practice among some of the independent variables in Addis Ababa, Ethiopia, 2015

Variables		Practice BSE	
		YES N(%)	NO N(%.)
Age of Participants	20 -29	32(7.9%)	250(61.6%)
	30 - 39	11(2.7%)	99(24.4%)
	>40	3(0.7%)	11(2.7%)
Marital Status	Single	21(5.2%)	135(33.3%)
	Married	25(6.2%)	210(51.7%)
	Divorced/separated/widowed	0	15(3.7%)
Educational level	No formal education	1(0.2%)	27(6.7%)
	Primary education	5(1.2%)	80(19.7%)
	Secondary education	7(1.7%)	118(29.1%)
	Tertiary education and above	33(8.1%)	135(33.3%)
Employee	student	8(2%)	43(10.7%)
	Self-employee	2(0.5%)	49(12.2%)
	Government employee	27(6.7%)	106(26.3%)
	Private employee	5(1.2%)	47(11.7%)
	No job	4(1%)	112(27.8%)
Monthly income	< 445	9(19.6%)	158(43.9%)
	446-1200	4(1%)	61(16.9%)
	1201-2500	21(5.2%)	67(16.5%)
	2501-3500	7(1.7%)	40(9.9%)
	> 3501	5(1.2%)	34(8.4%)
Level knowledgeable	knowledgeable	21(5.2%)	67(16.5%)
	Non knowledgeable	25(5.2%)	293(72.2%)
perception	Have perceived susceptible	6(1.5%)	33(8.1%)
	Have no perceived suscept.	40(9.9%)	327(80.5%)
	Have perceived seriousness	20(4.9%)	148(36.5%)

	Have no perceived serious.	26(6.4%)	212(52.2%)
	Have Perceived benefit	41(14.4%)	250(61.6%)
	Have no perceived benefit	5(1.2%)	110(27.1%)
	Have Perceived barrier	2(0.5%)	74(18.2%)
	Have no perceived barrier	44(10.8%)	286(70.4%)
	Have perceived confidence	38(9.4%)	145(35.7%)
	Have no perceived confide.	8(2%)	215(53%)
	Have perceived motivation	46(11.3%)	340(83.7%)
	Have no perceived motiv.	0	20(4.9%)

5.6 Factors associated with BSE practice

5.6.1 Bivariate analysis of practice BSE with independent variable

To see the effect of independent variables on dependent variable (practice of BSE), bivariate logistic regression analysis was carried out. The crude analysis was done by including socio-demographic, family history of breast cancer, knowledge of BSE, perception and Skill of BSE.

A result obtained from binary logistic analysis educational status, knowledge of BSE, perceived benefit, perceived barrier and perceived confidence significantly associated with practice of BSE as showed in table 6. The other dependent variable Age, marital status, employment status ,monthly income, family history of breast cancer, perceived susceptibility, perceived seriousness, perceived barrier and skill of BSE are not significantly associated with practice of BSE.

Table 6: Bivariate association practice of BSE and some explanatory variables of women attended public health centers of Addis Ababa, Ethiopia, 2015

Explanatory Variable	BSE practice(N=46)		COR(95%)	P- Value
	Yes	No		
Educational status				
No formal education	1(0.2%)	27(6.7%)	6.600[0.865- 50.348]	0.069
Primary education	5(1.2%)	80(19.7%)	3.911[1.469 – 10.425]**	0.006
Secondary education	7(1.7%)	118(29.1%)	4.121[1.757 – 9.662] **	0.001
Tertiary education and above	33(8.1%)	135(33.3%)	1	
Knowledge				
Knowledgeable	21(5.2%)	67(16.5%)	3.673[1.941 – 6.953]**	< 0.001
Non knowledgeable	25(6.2%)	293(72.2%)	1	
Perception				
Have perceived benefit	41(14.1%)	250(61.6%)	3.608[1.388- 9.377]**	0.008
Have no perceived benefit	5(1.2%)	110(27.1%)	1	
Perceived confidence				
Have perceived confidence	38(9.4%)	145(35.7%)	7.043[3.193 – 15.534]**	< 0.001
Have no perceived confidence	8(2%)	215(53%)	1	
Perceived barrier				
Have perceived barrier	2(2.6)	74(97.4%)	0.176[0.042 – 0.741]**	0.018

Have no perceived barrier	44(13.3%)	286(86.7%)	1	
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5.6.2 Multivariate analysis of practice of BSE with independent variables

Screening practice of BSE were shown to have a statistically significant association with those who have a knowledge about BSE practice [AOR=2.227, 95%CI (1.135, 4.3)] that means women who have two times more likely practice BSE and perceived confidence [AOR=5.645, 95%CI (2.493, 12.7)] interpreted women who have confidence to BSE six times more likely practice BSE as shown table 7. Socio demographic characteristics, family history, perceived susceptibility, perceived severity and perceived barrier not significantly associated.

Table 7: multivariate analysis of Factors affecting BSE practice of women attending public health centers of Addis Ababa, Ethiopia, 2015

Explanatory Variable	BSE Practice		Crude OR (95%CI)	P-value	Adjusted OR (95%CI)	P_ Value
	YES	NO				
Knowledge						
knowledgeable	21(5.2%)	67(16.5%)	3.673[1.941-6.953]	< 0.001	2.227[1.135-4.3]	0.020
Non knowledgeable	25(6.2%)	293(72.2%)	1		1	
Perceived confident						
Have perceived confident	38(9.4%)	145(35.7%)	7.043[3.193 – 15.534]	< 0.001	5.645[2.493-12.7]	< 0.001
Have no perceived confident	8(2%)	215(53%)	1		1	

6. DISCUSSION

The ever practice of BSE was low and also the practice of regular BSE was considered poor on this study area because only a limited number of respondents knows how to do BSE. Our finding showed that, only 46(11.3%) and 6% of the respondents ever practiced and regularly practiced BSE respectively. When we comparative study done in Kuwait on women attending primary health care, only a fifth (12%) of the study participants mentioned that they had practiced BSE. This similarity might be due to the nature of population used for study; both studies used women attending primary health centers (23). It is also less when we compared with the study conducted in Ibadan, Nigeria, amongst 231 female traders recruited during a cross-sectional study, only 89 (37.1%) of the traders were aware of BSE and 51 (18.1%) of the respondents had ever practiced BSE (27). This difference might be explained by the fact that, low level of knowledge on the benefits of the BSE and prevention of breast cancer. In addition to this it is not addressed as a major public health problem at any level of the health care system.

Another study showed in Nigeria among female school teacher with sample size of 406, respondent rate 88%, one hundred and eighty-seven (54.8%) of the respondents had done BSE before, while 154 (45.2%) had never done it (30). One hundred and fifteen (71.8%) of the respondents who were doing BSE once monthly, 20 (12.5%) indicated three times monthly, 5 (3.1%) twice yearly and 20 (12.5%) once a year (30). This difference might be due to the nature of the study population majority of them have first degree (65.7%) and second degree (13.8%) that lead to have high information access 95.6% heard about the BSE.

Breast Self-Examination (BSE) is one of the recommended preventive techniques to reduce breast cancer morbidity and mortality (9). On this study area to find out the screening methods to detect breast cancer, breast self- examination was mentioned by 137(33.7%) of the participants followed by clinical examination which is mentioned by 108(26.6%) and the least recognized 54(13.3%) was mammography. This result is consistent with the cross sectional study done in Addis Ababa among female health professionals 2012. Three hundred and twenty six (77.6%) respondents were aware of BSE as a screening method. Mammography was mentioned as a screening method by 342 (81.4%) and the least mentioned screening method by the participants was CBE which was known by 300 (71.4%) respondents (13). This gap might be due to the

difference in nature of the population the studies conducted nurses which do have more access for information like in the course of professional education, may have contact with breast cancer patient and may have contact with cancer association that make them near to screening methods.

The study showed more than three fourth (89.2%) respondents said only female are affected by breast cancer while 10.6% of the participants knew that both sex affected. When we compared study done in Nigeria About half (54.6%) of the respondents didn't know if both male and females were affected, 25.7% disagreed both sexes were affected while only 19.6% knew that both sexes were affected. In addition to this, in this study most of the study participants 400(98.5%) do not know the correct steps of breast self-examination, but in contrary the study in Kuwait stated that only 17(15.6%) of the participants do not know the correct steps of BSE which is less compared to our study area (23). This might explained that there is no well effective breast cancer education that has the potential to increase knowledge on the women about the disease and BSE.

This study showed that, 75% of the participants believed that early detection improves survival and 33.7% of respondents know BSE as a tool for early detection of breast cancer. This result is consistent with a study conducted in Haramaya University on medical students, 85.7% participants agreed that early detection improves survival. Almost 93.6% of students agreed that BSE can be an important tool for early detection of breast cancer (31). This gap could be due to study population, medical students expected to have better awareness regarding BSE and breast cancer.

The study showed that, 45 (11.1%) of the respondents strongly agreed, When they do breast self-examination, they feel good about themselves. A cross-sectional study carried out amongst 406 female teachers in the Ilorin West Local Government area of kwara State, Nigeria, 155 (45.5%) of the respondents strongly agreed that it is highly desirable to examine the breasts monthly, (30). This difference might be explained by the very fact that, there is no organized ROC prevention, education, screening or curative care program to address this issue.

This study also tried to assess the relationship between BSE practice and several associated factors. In general knowledgeable on BSE and perceived confidence were variables that significantly associated with the AOR 2.227[1.135 - 4.3] and AOR 5.645[2.493-12.7] respectively, which means women who have knowledge on BSE, two times more likely practiced BSE and women who have confidence to do BSE, six times more likely practiced BSE. According to a study done in Malaysia significant predictors of BSE were good knowledge of breast cancer (OR=2.654, 95% CI: 1.033-6.816, p=0.043), which means women who have knowledge to breast cancer three times more practiced BSE. (18). In addition a study in Iran also showed significant association between level of knowledge, attitude and practice of BSE and CBE ($P < 0.0001$) (26).

A study done in Ethiopia 2010 which used qualitative and quantitative approach, the most common mode of entry in to the healthcare system for patients with breast cancer before diagnosis was a nonhospital primary care site (53.7%) (35). This shows mostly women first visit health centers rather than hospitals. Therefore, to get women early used health centers.

7. STRENGTH AND LIMITATION OF THE STUDY

7.1 Strength

- The sampling method and procedure decreased selection bias for study population because we used probability systematic sampling method so that it could be possible to generalize to the Addis Ababa population.
- Since limited studies were conducted in this area at national and regional level, it provides information for those interested.

7.2 Limitation

- The use of cross- sectional design has limited the degree of cause and effect associations among variables of interest.
- The behavioral study outcomes are based on self- reported information which subjected to bias since the study raised personal issue, the possibility of under estimation cannot be ruled out.
- Lack of Qualitative aspect in the study.
- There was no international standardized questionnaire on Breast self - examination practice that may limit comparing the findings of this study with other studies.

8. CONCLUSION

The result of this study demonstrated that, below one fourth 46 (11.3%) of the participants engaged in the BSE practice, at least once in their life time and from that only 6% of the respondents practiced regularly. Regarding the factor associated with BSE practice, the level of knowledge of the participants about BSE was low around 88(21%), and they have a good perception on the benefit, confidence, barrier and motivation except on the susceptibility and seriousness matters. BSE practice has a statistically significant association with knowledge and perceived confidence, but not significantly associated with age, marital status, education level, monthly income, perceived susceptibility, perceived seriousness, perceived barriers, perceived benefit and perceived motivation.

9. RECOMMENDATION

Based on the findings of this study, the following recommendations were forwarded to concerned bodies:

- Develop practical strategies to reduce the risk of developing breast cancer, by promoting BSE and other screening methods.
- Considering source of information access to women about BSE in this study, provide effective trainings for health professionals to enhance more practice of BSE.
- Integration of education campaign and screening services into already existing programs like Family planning and reproductive health services, VCT (voluntary counseling and treatment), and so on.
- Develop information access about breast cancer and BSE in the facility by Distributing different printed materials like Magazines, leaflets and facilitate Internet access.

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APPENDIXE

APPENDIX I: PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

AAU, COLLEGE OF HEALTH SCINENCE, SCHOOL OF PUBLIC HEALTH, MPH
EXTENSION PROGRAM

Hello. My name is _____, I am here to collect data for the research purpose which is conducted to complete a thesis for Master's Degree of Public Health.

The purpose of this study is to assess Breast self- examination practice and associated factors among women attend public health center.

You are selected to be one of the participants in the study. I would like to ask you to fill this questionnaire that takes 20 to 30 minute of your time. No harm is imposed to you except the time you commit for interview but some of the question may look too personal but it is helpful for the study. In addition, there is no payment for participation even though the result of the study may benefit as a citizen. The questionnaire Participation in this study is voluntary, you have the right to refuse or with draw from the study at any time for any reason without penalty. However, your honest answers to these questions are important since it provide relevant information to design interventions that aims to improve the practice of Breast self- examination among women.

The information you provide is confidential and it will be used only for study purpose and it will not be disclosed to anyone. A code number will be used to identify the participant therefore, writing your name is not needed.

If you have something that is not clear about the study please contact the principal investigator, Mahlet Mekonnen (Mobile0912-81-85-75, email natanmahi@gmail.com) at any time. Are you willing to participate in this study? 1. Yes 2. No

Signature of data collector certifying verbal informed consent_____

Thank you

APPENDIX II: DATA COLLECTION INSTRUMENT QUESTIONNAIRE (ENGLISH VERSION)

Instruction- Interview

Part I Socio-Demographic characteristics

SR	Question	Response	Skip pattern
Q101	Age	_____ Years	
Q102	Marital status	1. Single 2. Married 3. Divorced 4. Widowed 5. Separated	
Q103	Educational level	1 No formal education 2.Primary education(1-8) 3.Secondary education (9-12) 4. tertiary and above	
Q104	What is your job?	1. Student 2. Self-employed 3.Government employee 4.Private company employee 5.No job 6.Others	
Q105	What is your average monthly income?	_____ Ethiopian Birr	

Part II History of Breast cancer

SR	Question	Response	Skip pattern
Q201	Do you have any family history of Breast cancer (mother, sister, grandmother, aunt)?	1.Yes 2.No	Q203
Q202	If yes, who is affected	1. mother 3. grand mother 2. sister 4. aunt	
Q203	Do you have personal history of breast cancer?	1.Yes 2. No	End the interview
Q204	Do you know someone suffering from breast cancer?	1.Yes 2.No	

Part III Knowledge of Breast self- examination

SR	Question	Response	Skip pattern
Q301	Which sex group does breast cancer affect?	1.Female 2. Male 3. Both (male and female)	
Q302	Do you believe early detection of breast cancer improve chance of survival?	1. Yes 2. No 3. I don't know	
Q303	Do you think breast cancer is curable if detected at earlier stage of the disease?	1. Yes 2.No 3.I don't know	

Q304	Do you know about presence of breast cancer screening methods?	1.Yes 2. No 3.I don't know	Q 307
Q305	Do you know the types of screening methods?	1. Yes 2. No 3. I don't know	
Q306	If yes to Q305 , which screening methods do you know? (Multiple answers is possible)	1. Breast self- examination 2. Clinical breast examination 3. Mammography	
Q307	Have you ever heard about breast self-examination?	1. Yes 2. No	Q 309
Q308	From where did u hear about Breast self- examination?(multiple answer is possible)	1. Television 2. Radio 3.Magazines/newspapers 4. Health professionals 5. Breast cancer patient 6.Friends/relatives 7. Brochures 8. Others specify.....	
Q309	Who should perform Breast self-examination?	1.Female 2. Male 3. Both male and female 4. I don't know	
Q310	When should a girl begin Breast self-examination?	1. At age less than 20 years 2. At age 20 years and above 3. At age greater than 35 years 4. I don't Know	
Q311	How often should be Breast self-examination performed?	1.Once in a week 2.once in a month 3.once in 3month	

		4.once in 6month 5 I don't know	
Q312	What do we look during Breast self-examination?(more than one answer is possible)	1. Breast lump 2. size of the breast 3. change in the nipple and unusual discharge 4. change in skin color 5. others, specify_____	
Q313	What will be the position of body while performing Breast self-examination?	1. standing straight in front of a mirror 2. Lying down 3. Standing in front of a mirror or sitting down and lying down 4. I don't know	
Q314	How is Breast self-examination done?	1. palpate with palm and three middle fingers 2. palpate with any of the fingers 3.I Don't know 4.others,specify_____	
Q315	What are the advantage of regular breast self-examination?(multiple answer is possible)	1. detect any abnormality in the breast 2. to learn how the breast normally looks and feels 3. to detect breast cancer earlier and promote treatment 6. Other ,specify_____	

Part IV Perception towards Breast self-examination

SR	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q401	I worry a lot about getting breast cancer					
Q402	There is a good possibility I will get breast cancer in the next 10 years.	1	2	3	4	5
Q403	My chances of getting breast cancer are great.	1	2	3	4	5
Q404	I am more likely than the average women to get breast cancer.	1	2	3	4	5
Q405	I feel I will get breast cancer sometime during my life.	1	2	3	4	5
Q406	The thought of breast cancer scares me.	1	2	3	4	5
Q407	When I think about breast cancer, my heart beat faster.	1	2	3	4	5
Q408	I am afraid to think about breast cancer.	1	2	3	4	5
Q409	Problems I would experience with breast cancer would last a long time.	1	2	3	4	5
Q410	Breast cancer would threaten a relationship with my boyfriend, husband or partner.	1	2	3	4	5

Q411	If I had breast cancer my whole life would change.	1	2	3	4	5
Q412	If I developed breast cancer, I would not live longer than 5 years.	1	2	3	4	5
Q413	When I do breast self-examination I feel good about myself.	1	2	3	4	5
Q414	When I complete monthly breast self-examination I don't worry as much about breast cancer.	1	2	3	4	5
Q415	Completing breast self-examination each month will allow me to find lumps early.	1	2	3	4	5
Q416	If I complete breast self-examination monthly during the next year I will decrease my chance of dying from breast cancer.	1	2	3	4	5
Q417	If I complete breast self-examination monthly I will decrease my chances of requiring radical or disfiguring surgery if breast cancer occurs.	1	2	3	4	5
Q418	If I complete monthly breast self-examination it will help me to find a lump which might be cancer in	1	2	3	4	5

	the future.					
Q419	It is hard to remember to do breast examination	1	2	3	4	5
Q420	Doing breast self-examination will make me worry about breast cancer.	1	2	3	4	5
Q421	Doing Breast self-examination will be embarrassing to me.	1	2	3	4	5
Q422	Doing breast self-examination will take too much time	1	2	3	4	5
Q423	Doing breast self-examination cause Discomfort.	1	2	3	4	5
Q424	I don't have enough privacy to do breast self-examination.	1	2	3	4	5
Q425	I know how to perform breast self-examination.	1	2	3	4	5
Q426	I am confident I can perform breast self-examination correctly	1	2	3	4	5
Q427	If I were to develop breast cancer I would be able to find a lump by performing breast self-examination.	1	2	3	4	5
Q428	I am able to find a breast lump if I practice breast	1	2	3	4	5

	self-examination.					
Q429	I am sure of the steps to follow for doing breast self-examination.	1	2	3	4	5
Q430	I am able to identify normal and abnormal breast tissue when I do breast self-examination.	1	2	3	4	5
Q431	I want to discover health problems early.	1	2	3	4	5
Q432	Maintaining good health is extremely important to me.	1	2	3	4	5
Q433	I search new information to improve my health.	1	2	3	4	5
Q434	I feel it is important to carry out activities which will improve my health.	1	2	3	4	5
Q435	I have regular health check-ups even I am not sick.	1	2	3	4	5

Part V Practice of breast self- examination

SR	Question	Response	Skip pattern
Q501	Did you perform Breast self-examination?	1. Yes 2.No	Q508
Q502	Why do/did you perform breast self- examination?	1. Had previous breast problem 2. fear of breast cancer from familyhistory	

		3. Recommended by Health professional 4. for early detection and treatment 5. Fear of developing breast cancer 6.other, specify_____	
Q503	How often you practice Breast self-examination?	1.once in a week 2.once in a month 3.once in 3month 4. once in 6month 5.once in a year 6. when it comes to mind 7. I don't know 8.others,specify_____	
Q504	At what age you started practicing Breast self- examination?	1. Less than 25 years of age 2. Between 25 and 30 years of age 3. Between 31 and 35 years of age 4. above 35 years of age	
Q505	When do you perform Breast self-examination?	1. 2 to 3 days after session of menstruation 2.When it comes to mind 3. A regular days of each month 4. few days before menses 5. any time during the month	

Q506	How many times in the last 12 months did you perform breast self-examination?	1.10-12times 2. 7-9times 3. 4-5 times 4.1-3times 5. I did not perform breast self-examination in last12 month.	
Q507	If it is not10-12 times in the last 12month what was the barrier to perform it?	1.Forgetfulness 2. too busy/not having enough time 3.performing it causes discomfort 4.Fear of finding something or having breast cancer 5. I don t know how to do it 6.not convinced about its effectiveness 7.Others, specify_____	
Q508	If you don't practice breast self-examination what are the reasons?	1. I don't have breast problem 2. I don't feel comfortable doing it 3. I am scared of being diagnosed with breast cancer 4. I don't believe that it is beneficial 5. I don't know how to do it 6. _____ others, specify_____	

APPENDIX IV: DATA COLLECTION INSTRUMENT QUESTIONNAIRE (AMHARIC VERSION)

አዲስአበባዩንቨርሲቲ፣የጤናሳይንስኮሌጅ፣የሕብረተሰብጤናት/ቤት፣የማታትምህርትየሕብረተሰብሳይንስየድህረመረቃመርሃ
ግብር

የጥናቱ/ የምርምሩመጠየቂያቅፅ

ክፍልአንድ፡- ማህበራዊአናየስነ- ህዝብመረጃ

ተ.ቁ	ጥያቄ	ምላሽ	መለያ
101	እድሜሽሰንትነው	-----ዓመት	
102	የጋብቻሁኔታ	1. ያላገባ 2. ያገባ 3. የፈታ 4. የትዳርአጋርየሞተባት 5. ተለያይተውየሚኖሩ	
103	የትምህርትደረጃ	1. ያልተማረ 2. የመጀመሪያደረጃ (1-8) 3. ሁለተኛደረጃ (9-12) 4. ሦስተኛደረጃ (ዲፕሎማ ¹ / ₂ ዲግሪ) 4. ሌላካለጥቀስ -----	
104	ስራሽምንድንነው	ተማሪ የግልሠራተኛየ(የራስ) የመንግስትሠራተኛ የግልድርጅትሠራተ ሥራአጥ ሌላ (ይገለፅ)-----	
105	ወርሀዊገቢሽምንያህልነው	-----ብር	

ክፍልሁለት፡- የቤተሰብእናየግልየጡትካንሰርበሽታንበተመለከተ

ተ. ቁ	ጥያቄ	ምላሽ	መለያ
201	በቤተሰብሽውስጥበጡትካንሰርበሽታየታመመወይምበጡትካንሰርምክንያት የሞተሰውአለ ? (አያት፣እናትእህት፣አክሰት)	1. አለ 2. የለም	ወደጥያቄ 203
202	ለጥያቄ 201 ምላሽ “አዎአለ” ከሆነ በጡትካንሰርበሽታየተያዘውየቤተሰብአካልማንነው?	1. እናት 2. እህት 3. አያት 4. አክሰት 5. _____ _____	
203	በምርመራየተረጋገጠየጡትካንሰርበሽታአለብሽ?	1. አዎ 2. የለብኝም	መጠይቃችንን እናጠናቅቃለን እናመሰግናለን
204	በአሁኑወቅትበጡትካንሰርበሽታየታመመሰውታውቂያለሽ?	1. አዎ 2. አላውቅም	

ክፍለሦስት፡- ስለራስበራሰየጡትምርመራእውቀትንበተመለከተ

ተ.	ጥያቄ	ምላሽ	መለያ
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ቁ			
30 1	የትኛውን ጾታ ነው ጡት ካንሰር የሚያጠቃው?	1. ሴት 2. ወንድ 3. ሁለቱም	
30 2	የጡት ካንሰርን በጊዜ ማወቅ በህይወት የመኖር እድልን ይጨምራል?	1. አዎ 2. አይጨምርም 3. አላውቅም	
30 3	የጡት ካንሰር በሽታ በጊዜው ከታወቀ ይደናገዳል?	1. አዎ 2. አይደለም 3. አላውቅም	
30 4	የጡት ካንሰርን መመርመር መሪያዘዴዎች መኖራቸውን ታውቂያለሽ?	1. አዎ 2. አላውቅም	ወደጥ ያቄ 307
30 5	የጡት ካንሰርን በጊዜ ለመለየት የሚያገለግሉ የመመርመር መሪያዘዴዎች አይነት ታውቂያለሽ?	1. አዎ 2. አላውቅም	ወደጥ ያቄ 407
30 6	ለጥያቄ ቁጥር 305 መልስ “አዎ” ከሆነ የትኞቹን የመመርመር መሪያዘዴዎች ታውቂያለሽ? (ከአንድ በላይ መልስ መስጠት ይቻላል)	1. የራስ በራስ የጡት ምርመራ 2. የሃኪም ቤት የጡት ምርመራ 3. መመርመር ያማሞግራፊ	
30 7	ስለራስ በራስ የጡት ምርመራ ስምተሽታው ቂያለሽ?	1. አዎ 2. አላውቅም	ወደጥ ያቄ 409
30		1. ከቴሌቪዥን	

8	ሰለራስበራስየጡትምርመራከምንሰማሽ? (ከአንድበላይመልስመስጠትይቻላል)	2. ከራድዮ 3. ከመጽሔት/ጋዜጣ 4. ከጤናባለሞያ 5. የጡትካንሰርበሽታከተያዘለዉ 6. ከዳደኛ 7. በራሪወረቀት 8. ሌላካለይጠቀስ _____	
30 9	የራስበራስየጡትምርመራማድረግያለበትማንነው?	1. ሴት 2. ወንድ 3. ሁለቱም	
31 0	አንድሴትከየትኛውየእድሜደረጃጀምሮየራስበራስየጡትምርመራማድረግመጀመርአለባት?	1. ከሀያአመትበታች 2. ከሀያአመትእናከዛበላይ 4. ከሰላሳአመትአመትበላይ 5. አላውቅም	
31 1	የራስበራስየጡትምርመራበየስንትጊዜመተግበርአለበት?	1. በሳምንትአንድጊዜ 2. በወርአንድጊዜ 3. በሶስትወርአንድጊዜ 4. በስድስትወርአንድጊዜ 5. አላውቅም	
31 2	የራስበራስየጡትምርመራስናካሂድምንእንመለከታለን? (ከአንድበላይመልስመስጠትይቻላል)	1. የጡትእጢ 2. የጡትመጠንለውጥ 3. የጡትጫፍለውጥእናያልተፈለገፈሳሽ 4. የጡትቆዳቀለምመቀየር 5. የብብትስርየንፍፊትእብጠት 6. ሌላካለይጠቀስ _____	

31 3	የራስበራስየጡትምርመራስናደርግየተከለሰውነትሁኔታእንዴትመሆንአለበት?	• መስታዎትፊትለፊትበመቆም • ጋደምበማለት • መስታዎትፊትለፊትበመቆም፤በመቀመጥእናጋደምበማለት • አላውቅም	
31 4	የራስበራስየጡትምርመራእንዴትይተገበራል?	• በመዳፍናበሶስትመሀልጣቶችበመዳሰስ 2. በማንኛውምጣትበመዳሰስ 3. አላውቅም 4. ሌላካለይጠቀስ_____	
31 5	የራስበራስየጡትምርመራለምንይጠቅማል? (ከአንድበላይመልስመስጠትይቻላል)	1. ማንኛውንምየጡትችግርለመለየት 2. ጤነኛጡትምንእንደሚመስልለማወቅ 3. የጡትካንሰርንቀድመንለመለየትናአስፈላጊውንእርምጃለመውሰድ 4. ሌላካለይጠቀስ_____	

ክፍልአራት፡- ሰለራስበራስየጡትምርመራአመለካከትንበተመለከተ

ተ. ቁ.	ጥያቄ	በፍጹምአልሰማማም	አልሰማማም	ሀሳብየለኝም	እሰማማለሁ	በጣምእሰማማለሁ
401	እኔስለጡትካንሰርስለመያዝበጣምእጨነቃለው	1	2	3	4	5
40	በሚቀጥለውአስርአመትውስጥበጡትካንሰርየመያዝእድልይኖረኛል፡፡	1	2	3	4	5

2						
403	በጡትካንሰር የመያዝ እድሉ ሰፊ ነው	1	2	3	4	5
404	ከአብዛኛው ሴቶች በላቀ ለጡትካንሰር በሽታ ተጠቂ ነኝ።	1	2	3	4	5
405	በህይወት ዘመኔ የሆነ ጊዜ ላይ በጡትካንሰር እንደምያዝ ይሰማኛል	1	2	3	4	5
406	ስለጡትካንሰር በሽታ ሳስብ ፍርሀት ይሰማኛል	1	2	3	4	5
407	ስለጡትካንሰር ሳስብ ልቤ በጣም ይመታል።	1	2	3	4	5
408	ስለጡትካንሰር ማስብ እፈራለሁ።	1	2	3	4	5
409	የጡትካንሰር ቢኖርብኝ በጡትካንሰር ምክንያት የሚመጣ ብኝት ግርለረጅም ጊዜ ይቆያል።	1	2	3	4	5
410	የጡትካንሰር ከፍቅር ጓደኛዬ ወይም ባለቤቴ ጋር ያለውን ግንኙነት ያሻክራል።	1	2	3	4	5
411	የጡትካንሰር ቢኖርብኝ አጠቃላይ ህይወቴ ይለወጣል።	1	2	3	4	5
412	በጡትካንሰር ብያዝ ከአምስት አመት በላይ በህይወት አልኖርም።	1	2	3	4	5

4 1 3	የራስበራስየጡትምርመራሳካሂድስለራሴጥሩስማትይስማኛል፡፡	1	2	3	4	5
4 1 4	በየወሩየራስበራስየጡትምርመራሳደርግስለጡትካንስርብዘምአልጨነቅም፡፡	1	2	3	4	5
4 1 5	በየወሩየራስበራስየጡትምርመራማድረግየጡትእጢንበጊዜውእንዳገኝይረዳኛል፡፡	1	2	3	4	5
4 1 6	በሚቀጥለውአመትበየወሩየራስበራስየጡትምርመራባደርግበጡትካንስርየመሞትእድሌንአቀንሳለሁ፡፡	1	2	3	4	5
4 1 7	በየወሩየራስበራስየጡትምርመራባደርግበጡትካንስርብያዝምእንኳንየሰውነትቅርጹንከሚለውጥቀዶህከምናየመጋለጥእድሌንአቀንሳለሁ፡፡	1	2	3	4	5
4 1 8	በየወሩየራስበራስየጡትምርመራባደርግወደፊትወደካንስርሊቀየርየሚችልየጡትእጢንለማግኘትይረዳኛል፡፡	1	2	3	4	5
4 1 9	የራስበራስየጡትምርመራንለማድረግማስታወስይከብዳል	1	2	3	4	5
4 2 0	የራስበራስየጡትምርመራማድረግስለጡትካንስርእንድጨነቅ/እንዳስብያደርገኛል፡፡	1	2	3	4	5
4 2 1	ለእኔየራስበራስየጡትምርመራማድረግአሳፋሪነው፡፡	1	2	3	4	5
4 2 2	የራስበራስየጡትምርመራማድረግረጅምጊዜይወስዳል፡፡	1	2	3	4	5

4 2 3	የራስበራስየጡትምርመራማድረግምችትንአይሰጥም፡፡	1	2	3	4	5
4 2 4	የራስበራስየጡትምርመራንብቻዬንበነጻነትየማደርግበትምቹየሆነበታየለኝም፡፡	1	2	3	4	5
4 2 5	የራስበራስየጡትምርመራእንዴትእንደሚደረግአውቃለሁ፡፡	1	2	3	4	5
4 2 6	የራስበራስየጡትምርመራንበትክክልማድረግእንደምችልበራሴእተማመናለው	1	2	3	4	5
4 2 7	የጡትካንሰርቢኖርብኝየራስበራስየጡትምርመራንበመተግበርየጡትእጢንማግኘትእችላለው፡፡	1	2	3	4	5
4 2 8	የራስበራስየጡትምርመራንከተገበርኩየጡትእጢንማግኘትእችላለሁ፡፡	1	2	3	4	5
4 2 9	የራስበራስየጡትምርመራንለማካሄድየሚያስፈልጉትንቅደምተከተሎችበእርግጠኝነትአውቃለው፡፡	1	2	3	4	5
4 3 0	የራስበራስየጡትምርመራንሳደርግጤነኛየሆነንእናጤነኛያልሆነንጡትመለየትእችላለው፡፡	1	2	3	4	5
4 3 1	የጤናችግሮችንበጊዜውመለየትወይምማወቅእፈልጋለው፡፡	1	2	3	4	5
4 3 2	የራስጤንነትንመጠበቅለእኔበጣምጠቃሚነው፡፡	1	2	3	4	5
4	የእኔንየጤናሁኔታለማሻሻል	1	2	3	4	5

3	/ለመጠበቅ አዳዲስ መረጃዎችን አፈላፊ ጋለሁ/ እዳስሳለው					
3						
4	የግልጤንነቴን የሚያሻሽሉ እንቅስቃሴዎችን ማካሄድ፣ ጠቃሚ መሆኑ ይሰማኛል፡፡	1	2	3	4	5
3						
4						
4	ባልታመምም እንኳን በየወቅቱ የጤናምርመራ አደርጋለው፡፡	1	2	3	4	5
3						
5						

ክፍል አምስት፡- የራስ በራስ የጤና ምርመራ ተግባርን በተመለከተ

ተ. ቁ	ጥያቄ	ምላሽ	መለያ
50			
1	የራስ በራስ የጤና ምርመራን አድርገሽታው ቂያለሽ	1. አዎ 2. አላውቅም	ወደጥያቄ 508
50			
2	ለምን ድንኳን የራስ በራስ የጤና ምርመራ የምታደርገው?	• ከዚህ በፊት የጤና ጥያቄዎችን አሳስባለሁ • በቤተሰብ የጤና ካህናት ለሰላም ፈራ • በጤና ባለሙያ ሰላሚ መከር • በጊዜ ለማወቅ እና እርምጃ ለመውሰድ • በጤና ካህናት ለመምረቅ • ሌላ ካለ ይጠቀስ _____	

50 3	የራስበራስየጡትምርመራበየምንያህልጊዜታደርጊያለሽ?	1. በሳምንትአንድጊዜ 2. በወርአንድጊዜ 3. በሶስትወርአንድጊዜ 4. በስድስትወርአንድጊዜ 5. በአመትአንድጊዜ 6. ትዝባለኝጊዜ 7. አላውቅም 8. ሌላካለይጠቀስ _____	
50 4	በስንትአመትሽነውየራስበራስየጡትምርመራማድረግየጀመርሽው?	• ከሀያአምስትአመትበታች • ከሀያአምስትእስከሰላሳባለውእድሜውስጥ • ከሰላሳአንድእስከሰላሳአምስትባለውእድሜውስጥ • ከሰላሳአምስትአመትበላይ	
50 5	የራስበራስየጡትምርመራመቼነውየምታደርገው?	• የወርአበባዋከቆመከሁለትእስከሶስትቀንበኋላ 2. ትዝባለኝጊዜ 3. በየወሩቋሚየሆነቀን 4. የወርአበባከመምጣቱከጥቂትቀናትበፊት • በወርውስጥበማንኛውምጊዜ	
50 6	ባለፈውአስራሁለትወርውስጥየራስበራስየጡትምርመራንምንያህልጊዜአደረግሽ?	• ከአስርእስከአስራሁለትጊዜ • ከሰባትእስከዘጠኝ • ከአራትእስከአምስት • ከአንድእስከሶስት • ባለፈውአስራሁለትወርውስጥአላደረኩም	

50 7	ከአስርእስከአስራሁለትጊዜካልሆነአንዳታደርጊያደረገሽምከንያ ትምንድንነው?	• መርሳት • በቂጊዜአለማግኘት • ምርመራማድረጉምችትስለማይሰጠኝ • በጡትካነስርመያዝንሰለምፈራ • እንዴትእንደሚመረመርሰለማላውቅ • ውጤታማነቱንስለማላምንበት • ሌላካለይጠቀስ _____	
50 8	ለጥያቄ 501ምላሽ “አላውቅም” ከሆነየራስበራስየጡትምርመራየማታደርገውበምንምከንያትነው?	1. የጡትበሽታየለብኝም 2. ማድረግምችትአይሰጠኝም 3. በጡትካነስርመያዝንሰለምፈራ 4. ይጠቅማልብዬአላስብም 5. እንዴትእንደሚመረመርአላውቅም 6. ሌላካለይጠቀስ _____	

ስለትብብርእጅግበጣምአመሰግናለሁ፡፡

APPENDIX: V Frequency of Perceived Susceptibility, Seriousness, Benefit, Barrier, Confidence and Motivation of BSE practice among women attend public Health Centers in A.A, Ethiopia, 2015

Statement	Strongly disagree (N (%))	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N(%)
Perceived susceptibility					
• Worry a lot about getting breast cancer	49(12.1)	120(29.6)	24(5.9)	163(40.1)	50(12.3)
• There is a good possibility I will get breast cancer in the next 10 years	115(28.3)	225(55.4)	44(10.8)	20(4.9)	2(1.5)
• My chances of getting breast cancer are great	112(27.6)	228(56.2)	30(7.4)	30(7.4)	6(1.5)
• I am more likely than the average women to get breast cancer	108(26.6)	239(58.9)	17(4.2)	37(9.1)	5(1.2)
• I feel I will get breast cancer sometime during my life	107(26.4)	238(58.6)	26(6.4)	29(7.1)	6(1.5)
Perceived seriousness					
• The thought of breast cancer scares me	59(14.5)	111(27.3)	25(6.2)	182(44.8)	29(7.1)
• When I think about breast cancer, my heart beats faster	58(14.3)	172(42.4)	36(8.9)	108(26.6)	32(7.9)
• I am afraid to think about breast cancer Problems	63(15.5)	143(35.2)	22(5.4)	149(36.7)	29(7.1)
• I would experience with breast cancer would last a long time	49(12.1)	120(29.6)	55(13.5)	154(37.9)	28(6.9)
• Breast cancer would threaten a relationship with others	49(12.1)	138(34)	61(15)	131(21.5)	27(6.7)
• If I had breast cancer my whole life would change	56(13.8)	155(38.2)	37(9.1)	133(32.8)	25(6.2)
• If I developed breast cancer, I would not live longer than 5 years	64(15.8)	198(48.8)	72(17.7)	59(14.5)	13(3.2)
Perceived Benefit					
	16(3.9)	42(10.3)	137(33.7)	166(40.9)	45(11.1)

- When I do breast self-examination I feel good about myself - When I complete monthly BSE I don't worry as much about breast cancer - Completing BSE each month will allow me to find lumps early - If I complete BSE monthly during the next year I will decrease my chance of dying from breast cancer - If I complete BSE monthly I will decrease my chances of requiring radical or disfiguring surgery if breast cancer occurs - If I complete monthly BSE it will help me to find a lump which might be cancer in the future	18(4.4)	79(19.5)	143(35.2)	133(32.8)	33(8.1)
	8(2.2)	32(7.9)	105(25.9)	208(51)	53(13.1)
	9(2.2)	34(8.4)	82(20.2)	227(55.9)	54(13.3)
	14(3.4)	44(10.8)	103(25.4)	214(52.7)	31(7.6)
	5(1.2)	33(8.1)	87(21.4)	230(56.7)	51(12.6)
Variable	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)
Perceived Barrier					
1. It is hard to remember to do breast examination	30(7.4)	135(33.3)	71(17.5)	156(38.4)	14(3.4)
2. Doing breast self-examination will make me worry about breast cancer.	39(9.6)	103(25.4)	48(11.8)	109(46.8)	26(6.4)
3. Doing Breast self-examination will be embarrassing to me	107(26.4)	233(57.4)	33(8.1)	28(6.9)	5(1.2)
4. Doing breast self-examination will take too much time	68(16.7)	251(61.8)	56(13.8)	31(7.6)	0
5. Doing breast self-examination causes Discomfort.	49(12.1)	222(54.7)	56(13.8)	43(10.6)	36(8.9)
6.I don't have enough privacy to do breast self-examination	55(13.5)	208(51.2)	50(12.3)	56(13.8)	37(9.1)
Perceived confidence					
1. I know how to perform breast self-examination.	39(9.6)	156(38.4)	28(6.9)	147(36.2)	36(8.9)
2. I am confident I can perform breast self-examination correctly	44(10.8)	182(44.8)	35(8.6)	114(28.1)	31(7.6)
3. If I were to develop breast cancer I would be able to find a lump by performing breast self-examination.	36(8.9)	103(25.4)	73(18)	162(39.9)	32(7.9)
4. I am able to find a breast lump if I					

practice breast self-examination.	29(7.1)	85(20.9)	66(16.3)	190(46.8)	36(8.9)
5. I am sure of the steps to follow for doing breast self-examination.	38(9.4)	202(49.8)	47(11.6)	95(23.4)	24(5.9)
6. I am able to identify normal and abnormal breast tissue when I do breast self-examination.	26(6.4)	81(20)	52(12.8)	201(49.5)	46(11.3)
Perceived health motivation					
1. I want to discover health problems early	3(0.7)	11(2.7)	13(3.2)	279(68.7)	100(24.6)
2. Maintaining good health is extremely important to me	1(0.2)	5(1.2)	7(1.7)	269(66.3)	124(30.5)
3. I search new information to improve my health	2(0.5)	26(6.4)	32(7.9)	256(63.1)	90(22.2)
4. I feel it is important to carry out activities which will improve my health	4(1)	7(1.7)	11(2.7)	267(65.8)	117(28.8)
5. I have regular health check-ups even I am not sick	41(10.1)	191(47.0)	34(8.4)	111(27.3)	29(7.1)