ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

Assessment of knowledge, attitude and practice of breast self-examination among women aged 20-49 years in Addis Ababa, Ethiopia.

PI - Chala Chimdi (BSc**)**

Advisor: Wubegzier Mekonnen (PhD, Assistant professor)

Co-Advisor: Gebretsadik Shibre (**MPH**)

A Research Thesis to Be Submitted to Addis Ababa University College of Health Sciences, School of Public Health, for the partial fulfillment of the Requirements For the Degree of Master of Public Health.

June, 2017

Addis Ababa, Ethiopia

Acknowledgment

First thanks to almighty God for His grace and mercies and my families for their encouragement which inspired me to study further.I would like to express my heart full thanks to my advisor Dr.Wubegzier Mekonnen for his unreserved guidance and constructive advice throughout the paper work and also I would like to thank the co-advisor Gebretsadik shibre. I would like to thanks all Addis Ababa City administration health bureau, sub city health offices administrators, woreda health office, study participants, data collectors and supervisors for their cooperation during the study period.

Table of Contents

Pages

List of Tables

List of Figures

Acronomy and Abbreviation

ACCR Addis Ababa Cancer Registry

AOR Adjusted Odd Ratio

BSE Breast Self Examination

BCRF Breast Cancer Research Foundation

CBE Clinical Breast Examination

CI Confidence Interval

COR Crude Odd Ratio

GLOBOCAN Global Burden of Cancer

HBM Health Belief Model

HEW Health Extension Worker

IARC International Agency for Cancer Research on Cancer

SPSS Statically Package for Social Science

U.S.A United States of America

WHO World Health Organization

Abstract

Introduction: Breast cancer is the most prevalent cancer among women globally and the second commonest cancer overall. In Africa, breast cancer was also the most commonly diagnosed cancer and the second leading cause of death among women in 2008. In Ethiopia it is also an emerging public health problem and top leading causes of cancer mortality and morbidity among women of reproductive age group. However, only few researches were done regarding knowledge, attitude and practice of breast cancer self-examination.

Objective: To assess the knowledge, attitude and practice of breast self-examination among women aged 20-49 years in Addis Ababa, Ethiopia, 2017.

Methodology: A community based cross- sectional study was conducted with a sample of 630 women aged 20-49 years in Addis Ababa. A multi-stage sampling technique was applied to select the study participants. Four out of ten sub-cities were selected randomly. One woreda was randomly selected in each sub-cities and systematic random sampling technique was used to select households in each selected Woreda .If there are more than one woman in the selected household one of them were randomly selected. A pretested structured questionnaire was used to collect data. Likert's scale was applied to measure attitude and bloom cut classification score for knowledge score. Data was entered in to epidata and analyzed by (SPSS) software version 20. A Cross-tabulation was used to know the overall association of explanatory variables with breast self-examination. Bivariable and multi-variable binary logistic regression were also fitted to identify factors associated with breast self-examination practice.

Result A total of 608 respondents participated in the study, of these only 155 (25.6%) of them had good knowledge and 53.4% had positive attitude towards breast self examination. Only 241 (39.6%) of the respondents had practiced BSE, from these study subjects only 96 (39.8%) of them practiced monthly. Occupational status and good knowledge of BSE were found to be significant association with the practice of breast self examination. Women of reproductive age group who are government employee were about 2 times more likely to practice breast self examination than those non-governmental employee [AOR=2.13, 95%, CI (1.19,3.84),p=0.011].Women who had good knowledge towards of breast self examination were 6 times more likely to practice BSE than those who had poor knowledge [AOR=5.99, 95%CI (4.1, 8.9), p=0.000]

Conclusion and recommendation: knowledge and practice of breast self examination was low, even if majority of them had positive attitude. I suggest that the ministry of health and other concerned bodies should have to promote awareness creation for the community about breast cancer and BSE

1. Introduction

1.1. Back ground of the study

Cancer is group of diseases characterized by uncontrolled growth and spread of abnormal cells.

Breast cancer is a kind of cancer that develops from breast cells. And it is one of the non-communicable disease and most common cancer in women worldwide. Breast self examination is a process whereby women examine their breast regularly to detect any abnormal swelling in the breast (1)

Breast cancer is the common cause of cancer related death among women with 522,000 deaths in 2012 alone. And it is the most frequently diagnosed cancer among women in 140 of 184 countries globally. Between 2008 and 2013, breast cancer incidence has increased by more than 20%, while mortality has increased by 14%. Incidence rate of breast cancer remain highest in more developed regions, but mortality is relatively much higher in less developed countries due to lack of early detection and access to treatment facilities (1).

The growth and aging of the population of the countries of low or middle income countries, together with westernization of life style and the rapid growth of tobacco smoking, change in life style habits (more sedentary lifestyle, weight gain and obesity) and societal changes (increasing age at first birth and decreasing parity in women) are leading to large increases in breast and colorectal cancer (2).

In United States, an estimated 246,660 new cases of invasive breast cancer are expected to be diagnosed in women in 2016, and about 40,450 of these women are expected to die (3).

Many low and middle income countries now face a double burden of breast cancer and cervical cancer which together represent the highest deaths in women over the age of 30 years.

In Africa, breast cancer was also the most commonly diagnosed cancer and the second leading cause of death among women in 2008, 92,600 cases and 50,000 deaths were reported that year. Cancer are growing burden, and continues to receive relatively low public health priority in Africa, because of limited resource and more attention given to communicable disease(4,5).

In Ethiopia cancer cases are rising and the disease is becoming a public health burden. Currently about 60,000 new cases of cancer is diagnosed each year and each day around ten to fifteen new patient seen (6).

The study conducted by Addis Ababa city cancer registry from 2011 to 2014, found out that there were 5701 cancer cases. Breast cancer is the leading type among females and accounts for 33% of all cases of cancer (7).

According to Addis Ababa city cancer registry, breast cancer is the most commonly leading cancer among females accounting for 33% of the cases followed by cervix uteri which accounts for 17%(7) .

The frequent age affected by breast cancer in Ethiopia is the age group between 30 and 39 accounting for 32% followed by the age group between 40 and 49 accounting for 29% and 20-29 aged only 10% (8). Each year, on average, 216 cases of breast cancer is reported according to Tikur Anbessa Specialized Hospital (8).

Mammography is the best screening method to prevent breast cancer morbidity and mortality, but in countries like Ethiopia, where resources are scarce, BSE should be encouraged for early detection of breast cancer (9).

Across-sectional study was conducted in Nigeria, in 2006 on knowledge, attitude and practice of breast cancer screening from a total of 393 female health worker showed that 55% had poor knowledge about risk factors and low level of breast cancer screening. Many participants (80.7%) were aware of mammography as breast cancer diagnostic and 45.8% was mentioned breast self examination or clinical breast self examination are methods of breast cancer screening (10,11,12)

And yet another study done among female health science students at Adama science and technology university showed knowledge and practice of breast self examination was low .The knowledge of the student regarding of breast self examination was assessed and only 8(5.5%)of the respondents practiced breast self examination .This survey showed that only 8.7% of the respondent had good knowledge and the rest 91.3% have satisfactory to poor knowledge regarding to breast self examination screening(13). Few studies were done in Ethiopia regarding knowledge, attitude and practice of breast self examination. Women don't have adequate knowledge about risk factors, early detection measure and warning sign of breast cancer. The case is also similar in most African countries (5,12,13).

According to studies carried out in Ethiopia, there are several factors often cited by study participants as reasons for them not performing BSE. The prominent ones constitute lack of adequate awareness about the disease, not knowing the techniques, not seeing problems such as lumps on their breasts and having little or no information about BSE and its importance (9,12,13).

1.2. Statement of the problem

Breast cancer is one of the most commonly diagnosed cancer globally which accounts for 1.7 million cases in 2012 and there were 6.3 million women diagnosed with breast cancer in the previous five years (1).

Early diagnosis remains an important early detection strategy, particularly in low and middle income countries where breast cancer is diagnosed in late stage and resources are scarce. (4)

Currently cancer accounts for four per cent of all deaths in Ethiopia. Many of these deaths can be avoided if the cancer can be detected and treated early (6).

In Ethiopia breast cancer is fatal because of women's inadequate knowledge and awareness of breast cancer signs. Moreover, women reach health care facilities late after the disease has spread (42).

Advanced breast cancer has the lowest survival rate and requires huge resource to make treatment available. (43).

Regarding early detection of breast cancer, mammography, CBE and self-breast examination are the main screening methods usually employed. Mammography cannot be applied always in countries with limited health service resource like Ethiopia. Clinical breast examination also needs professional skill and women should visit health facilities. Breast self-examination is still recommended and easy to apply, in expensive method for early detection of breast cancer in events of limited resource.

In Ethiopia around 60,000 new cases of cancer are diagnosed annually. Because of this disease burden raised our country planned strong initiatives designed by the government whose objective is to expand oncology departments in five regional university hospitals including Jimma, Gondar, Hawassa, Mekelle and Haromaya. Study conducted in Adama, health science and technology university showed that knowledge and practice of breast self examination was low which accounts (8.7%) and 39.4%) respectively (6,13) .The gaps are women in a community lack awareness and knowledge about breast cancer screening methods, breast cancer warning signs, breast cancer risk factors and perception towards breast cancer. So, this study might fill the gap based on these findings

1.3. Significance of the study

The study is important in providing information towards knowledge, attitude and practice of self-examination among women in Addis Ababa. Increasing women awareness, knowledge and practice of breast self-examination is important to government and other responsible bodies to design strategies on prevention and control of breast cancer through increased awareness. Also the study may help other researchers and policy makers to build up on this research thus could be used as a base line study for anyone who wishes to conduct such kind of studies on community.

This study will establish the status of current public awareness on knowledge and practice of self-breast examination for early diagnosis. Furthermore, it will establish the information gap that needs to be filled so as to increase awareness at community level. Finally, it can be a great asset for public and private health facilities as it assists them to prepare health education programs and awareness creation seminars. Now days a burden of breast cancer increases and the government adopted national non-communicable disease strategic action plan in 2014, aimed at alleviating problems related to cancer and other non-communicable diseases. So this study might be contributing something by raising awareness creation on early diagnosis or detection of breast cancer and early signs and symptoms.

2. Literature review

The incidence rate of cancer is rising in many parts of the world. The international agency of research on cancer estimated that for the year 2008 there were 12.4 million new cases of cancer, 7.6 million deaths from cancer(1).

Breast, lung and colorectal cancers represent 42.5% of the total deaths in women in developed countries. Cancer of the uterine cervix ranks first in less developed countries, with an estimated 275,000 cancer deaths (13.9% of the total) followed by breast cancer with 252,000 deaths for accounting for 12.7% (2).

Breast cancer is the most frequent cancer of women (23% of all cancers), with an estimated 1.15 million cases in 2002, ranking the second overall. More than half of the cases are in industrialized countries about 361,000 in Europe 27.3% cancers in women and 230,000 in North America 31.3% (14).

Cancer is an emerging public health problem in Africa. About 715,000 new cancer cases and 542,000 cancer deaths occurred in 2008 on the African continent. The number of cases expected to double in the coming 20 years because of aging and growth of population (5). In several sub-Saharan Africa, Cervical cancer was the commonly diagnosed in the past years and now breast cancer become the most commonly diagnosed cancer in women(5).

In Ethiopia around 60,000 new cases of cancer are diagnosed annually. Currently cancer accounts 4% of all deaths (6).

2.1. Breast cancer

According to a cross- sectional survey study conducted in Buea, Cameron in the year 2014, from a total of 166 study participants, only 5(3%) of the respondents had a family history of breast cancer (17).

When it comes to Ethiopia, a study conducted in 2011 on 845 house hold women in Mekele town on knowledge of breast cancer and its prevention showed that high percentage of women with personal and family history of breast cancer practiced BSE compared with those with no personal and family history (26).

Also in a similar study conducted in Iran, from a sample of 1402 women studied, 138(10%) of the participants had positive family history of breast cancer. And among those with family member with breast cancer, 36% reported that their first degree relative (Mother, Sister or daughter) had been affected with breast cancer (27).

Another cross- sectional survey conducted in Ede, Osun state Nigeria from June to August 2010 among women with family history of breast cancer showed that from a total of 189 study participants, 81(42.9%) were not aware of their susceptibility to breast cancer and 25(12.2%) have family members with breast cancer, among which mothers, sisters and grandmothers accounted for 6.3%, 6.3% and 0.5% respectively.

2.2. Knowledge about breast self examination

A cross -sectional study was done on women in rural area of Turkey, on the knowledge and attitude of breast self examination and mammography on 244 women aged between 20-64 years shows that women of 23.4% had no knowledge about breast cancer and 27.9% had no concept of breast self examination, 89.3% had never had a mammography and 75% never had CBE. Regarding knowledge and practice of breast self examination, 72.1% of the participants have a knowledge of BSE(15).

A cross-sectional study was carried out in Pakistan on breast cancer risk factor knowledge among nurses in teaching hospital in 2006 shows that 35% of the nurses have good knowledge of breast cancer risk factors(16).

Another institutional based cross- sectional study was conducted from April to July 2014, on female under graduate students in the south west region of Cameron to assess knowledge, attitude and practice of breast self examination. From a total of 166 respondents 91% do not know how to perform BSE.

The overall study showed that the main reason for not performing BSE were lack of knowledge which accounts 44% followed by not to have any sign of breast cancer (36.7%) ,fear of finding breast lumps (7.8%) and (4.8%) were due to embracement. So, Knowledge of the study participant was significant association to perform BSE and attitude to practice BSE on the study (17).

Similarly a facility based study conducted among female university students at the Presbyterian university collage of Ghana, in 2007 to assess the knowledge, attitude and practice of self breast examination. From a total 250 nursing students only 60% of participants were know BSE is screening method for detection of breast cancer. In addition, respondents were asked the methods how to performing breast self examination and 38% showed standing and looking for discharges in front of mirror, 19% indicating feeling for changes in their breast while showering and 49% showing that feeling for changes in the breast during lying down(18).

Across-sectional study was conducted on awareness, attitude and practice of breast cancer screening women and the associated socio-demographic characteristics in north Iran. From a sample of 500 women aged 20-65 years, 33 cases (6.6%) had family history of breast cancer and 238(47.6%) women of study participant have no information regarding to breast cancer (39).

2.3. **Attitude towards breast self examination**

The study conducted on Attitude of south Asian women to breast health and breast cancer screening in community based sample in the U.S showed that women's are low perceived fear and low susceptibility towards getting breast cancer (19).

Another cross- sectional survey conducted among 513 African American women to assess the understanding perceived benefit of early cancer detection in south los Angels, in 2012. From 513 women, 355 (69%) of the study participant reported one of their family members (blood relatives) had been diagnosed cancer .Only16% of the study participants' belief that increases of women age have high risk of developing cancer and they have positive perception about early detection of breast cancer. From the study participants74% of belief that if breast detected early a person's chances of survival are good (20).

Across- sectional study was conducted in Saudi Arabia from May to June 2005 to assess the knowledge, attitude and practice of breast self examination. From a total of 300 female, 20-70 years age attending primary health care. Most of the study participants were educated and their knowledge about breast cancer were 95.7%. The attitude of participants towards BSE was assessed and 75.3% of the respondents strongly agreed to early detection of breast cancer increase the survival of the patient (21).

Another institutional based cross- sectional study was conducted from April to July 2014, on female under graduate students in the south west region of Cameron to assess knowledge, attitude and practice of breast self examination. The majority (88.6%) of the respondent perceived BSE is an important method in the early detection of breast cancer.(17)

A cross- sectional study was conducted in Jordan on 519 sample of female students, where it was found that more than one-third (37%) of the sample did not believe they were susceptible to breast cancer. This study showed that frequency of performing BSE in the past 12 months is positively correlated to both perception of confidence in practicing BSE ($r=0.37$, $p<0.01$) and susceptibility to breast cancer ($r=0.15$,$p<0.01$) (22).

Across-sectional study was conducted on awareness, attitude and practice of breast cancer screening women and the associated socio-demographic characteristics in north Iran ,only 36% of women have perceived breast cancer is a serious disease and 63.2% have believed the benefit of breast cancer screening(39)

2.4. **Practice of breast self examination**

Across-sectional study was done on women in rural area of Turkey, on the knowledge and attitude of breast self examination and mammography on 244 women aged between 20-64 years only 40.9% of the women practiced BSE ever and 10.2% of women performed BSE on regular basis monthly. So, those women are significant and positive correlation were found between knowledge of breast cancer and perception of confidence in practice of BSE ($r=0.18$, $P<0.001$), BSE- benefit shows ($r=6.5$, $P<0.001$) (15)

Another study conducted on 519 female students on factors associated with of breast self examination on university of Jordan revealed that 67% of the respondent heard about BSE and only 26% of the student practiced BSE in the last 12 months. Only 7% of the students performed BSE on a regular basis monthly. Television and radio were the main source of information about breast cancer and its self breast examination which accounts 62% and 42% respectively (22).

Similarly, a study conducted on 100 recruited women on effect of education on HBM on screening behavior in high risk women for breast cancer. In Tehran, Iran, more than 70% of the participant did not perform regular breast self examination in the past year and 61% of participant did not know about the time of monthly breast self examination (23).

Across- sectional study was conducted in Turkey, in 2007 to assess knowledge, attitude about breast cancer and practice of Breast cancer screening. It showed that only 27.3% of health care professionals performed BSE monthly or once per menstrual cycle (24).

In a study conducted in rural area of Turkey, from a total of 244 women 40.9% of women practiced BSE at least once and only 10.2% of women performed BSE on regular basis monthly. Similar studies conducted in Jordan and Tehran, Iran also showed that regular practice of breast self examination were low accounting for just 7% and 30% respectively (15,22, 23).

When it comes to Ethiopia, a study conducted in 2014 on 368 Female health science students at Adama Science and Technology University in Ethiopia indicated about 60.6% of the participants did not ever examine their breast and only 5.5% of study participant practiced breast self examination monthly (13). Another descriptive cross- sectional study done in Tikur Anbessa specialized hospital and St. Paulos General hospital in 2011, to assess the knowledge of breast cancer and screening methods among female nurses,the knowledge of nurses about sign of breast cancer showed that 45.2% of the respondent mentioned that early breast cancer not causes pain and symptoms. From a total of 281 study participants 139 (51.5%) of them practiced breast self examination monthly 1-7 days after menses (25).

On the other hand across-sectional study was conducted in Mekele town in 2011,to assess knowledge on breast cancer and its prevention among women households heads. From a total of 845 women aged 20-75 years households heads, only 86(12.7%) had high knowledge level regarding breast cancer risk factors.

Also from 304 study area who had information on BSE, only 163(53.6%) have ever practiced breast self examination and only 46 (29.5%) of the study participant practiced BSE monthly. The main reason for participants not to performing breast self examination were fear of breast cancer which accounts 64.4% and for other it were due to absence of breast problem and forgetfulness mentioned as a barrier to perform breast self examination(26).

When it comes to Ethiopia, the practice of breast self examination is very low as in the case in most sub-Saharan Africa countries. Studies conducted in some universities and hospitals across the country have confirmed that the practice is almost nonexistent and a lot of work is needed in raising awareness among woman

2.5. Factors associated with breast self examination

Age:-Practice of BSE increased significantly with age 20-29 years (65.2%) to 100% in those who were 60 years and above (10).

A population based randomized trial was conducted in Tehran, Iran on women age 20-80 years on awareness of warning sign and effective screening methods. From 1402 women interviewed most women, 44% perceived a painless breast lump as a symptoms of breast cancer. While 39% of respondents does not knows about breast cancer screening using breast self examination and 64% does not know how to do BSE. This showed that performing BSE is significantly related to age (x^2=28.9, P=0.006) (27).

A study was conducted in Alberta, Canada on age as factors in breast cancer knowledge, attitudes and screening behavior on a sample of 1284 women aged 40 to75 years who did not have breast cancer. The knowledge about breast cancer risk factors was assessed and the younger the age group the higher the awareness of risk factors and of the incidence of breast cancer.(32)

Another cross-sectional study was conducted in young Malaysian women to assess practice and barriers to wards breast self examination. From a total of 251 students participated in this study, regarding the factors that influenced their practice of breast self examination, age is significantly influenced the practice of BSE (p=0,045) (33)

Across-sectional study was conducted on awareness, attitude and practice of breast cancer screening women and the associated socio-demographic characteristics in north Iran. The level of knowledge about breast cancer risk factors was significantly higher in women aged 50 years or older as compared with less than 50 years(p=0.03). Also, Significant association was observed between age of women and educational levels with regular practice of BSE (p=0.005 and p=0.007)(39).

Knowledge:-Cross sectional study was conducted in Benin-city, Edo state, Nigeria from February to May 2006, to assess knowledge, attitude and practice of breast cancer screening among female health

workers with a mean age of 39.2 ± 9.9 years. Also the study showed that a respondent who had a good knowledge about breast cancer risk factors practice BSE than who do not know about risk factors (10).

Across -sectional study was conducted in 2013 in Mekele University, Tigray regional state to assess knowledge of breast cancer and its early detection measures among female students. From a total 760 respondents a large number of study participant 477 (62.8%) did not practice self breast self examination. From this survey result 57.4% of the respondent reasoned that because of not having breast problem and 24.9% not know how to examine or how to do self breast examination (26).

Across-sectional study was conducted in young Malaysian women showed that , the majority of participants who never practiced BSE mentioned that lack of knowledge was their main barrier to practicing BSE(20.3%),followed by do not have the symptoms(14.3%),then scared of being diagnosed with breast cancer(4.4%).(33).

Across-sectional study was conducted in united Arab Emirates, from April 2011to June2012, on breast cancer awareness among female university students in Ajman.The knowledge of the study participant was assessed regarding to risk factors, warning sign and early detection of breast cancer, the study participants have low knowledge which accounts 40.6%, 45.9% and 86.5% respectively.

Only 89(22.7%) study participants having ever conducted BSE and only 13(3.3%) of participants practiced monthly BSE (34).

Across-sectional study was conducted in Harmaya university, Harar, Ethiopia on breast cancer awareness and practice of breast self examination among female medical students. From 126 students participated in the study the awareness level of BSE among students were high 87.3%. About 87% of the students knew how to perform BSE and 91% of the students agreed that BSE is important. Despite good knowledge of BSE, 77% of the students had never performed BSE. The main reasons were have no sign or symptoms (28.8%),forgetfulness(17%),fear of detecting abnormality(16.4%),lack of privacy(15.4%) and 11,3%) were not aware exactly how is BSE done. (35).

Across-sectional study was conducted from march 1 to march 30,2013 among 316 female teachers, kafa zone, southern part of Ethiopia, to assess the predictors of BSE using HBM. In this study 52 (16.5%) of women heard about BSE and from those who heard about BSE 38(73.3%) of them screened for breast cancer. Knowledge about BSE was significant in explaining BSE performance. The study showed that participant knowledge increases the odds of performing BSE also increase (AOR 1.1(95% CI 1.05-1.1)(37).

Educational factors:-Also women with higher education and more informed about breast cancer better performed breast self examination. (x^2=73.1, P< 0.0001) (27).

A cross- sectional survey also conducted in Nigeria from June to August,2010. From a total of 189 study participant large number 81(83.6%) of the respondents with secondary school education and below have never performed BSE compared with 12(16.4%) of those with education level above secondary school. So, the study showed that high level of education was significantly associated with practice of BSE (31).

Across-sectional study was conducted on awareness, attitude and practice of breast cancer screening women and the associated socio-demographic characteristics in north Iran, showed that awareness level of risk factors was significant associated with educational level of women (p=0.04) and women with education at university level had higher level of awareness compared with low education(39).

Attitude :-A study was conducted in Alberta, Canada on age as factors in breast cancer knowledge, attitudes and screening behavior on a sample of 1284 women aged 40 to75 years who did not have breast cancer showed that the attitude and belief of women in their 40s were significantly more likely to believe that they would have breast cancer someday than women in their 50s (p=0.005),where as women in their 60s (p=0.002) and70s (p<.001) were significantly less likely to believe that they would have breast cancer some day. Women 60 years of age and over were less certain than those 50 to 59 years old that they undergo physical examination of the breast by health professionals (32).

Across-sectional study was conducted in Harmaya university, Harar, Ethiopia on breast cancer awareness and practice of breast self examination among female medical students. About 85.7% of study participants agreed that early detection of breast cancer improve survival and 93.6% agreed that BSE can be an important tool for early detection for breast cancer.(35).

Another survey study was conducted in outpatient clinic at King Abdul-Aziz medical city, Riyadh Saudi Arabia to predict BSE using health belief model among Saudi women, the domain of attitude to breast cancer and BSE was measured by HBM, the overall percentage mean score of seriousness is low (55.6%), with less likelihood to practice BSE. Majority of women disagreed/strongly disagreed that breast cancer is hopeless disease (78.5%) and that they would not live more than 5years with breast cancer(66.2%). The percentage mean score for susceptibility domain is low(44.8%),with less likelihood to practice BSE .less than 10% of all women who agreed/strongly agreed they are susceptible to breast

cancer in the future,4.8% feel that the chance of getting breast cancer as big and 4.1% feel highly susceptible to breast cancer in the next 10 years(36).

The percentage mean score of confidence is also low (56,5%),reflecting less likely to practice BSE. The majority of women agreed/strongly agreed that performing BSE monthly would help in early detection of breast cancer (78.5%), detection of tumors before going to doctors (69.1%) and decreasing of complication(64.1%). The overall Percentage mean score of barrier domain is low (41.7%), with more likelihood to practice BSE. The barrier of BSE 71.6% would make shame and embarrassment or unfavorable things accounted 63.7%. (36).

Across-sectional study was conducted from march 1 to march 30,2013 among 316 female teachers, kafa zone, southern part of Ethiopia, found that increases in total score of perceived susceptibility and severity towards breast cancer the odds of performing BSE increased by (AOR 1.95,95% CI,1.44-2.63) and (AOR 1.24,95% CI,1.11-1.46) respectively.(37)

Family history of breast cancer:-Across-sectional study was conducted in young Malaysian women to assess practice and barriers to wards breast self examination showed that family history of breast cancer significantly influenced the practice of BSE (p=0.017).(33).

Across-sectional study was conducted in united Arab Emirates, from April 2011to June2012,to asses breast cancer awareness among female university students in Ajman. From a total of 392 students participated on study, family history of breast cancer was reported by 36(9.2%). Regarding methods for early detection of breast cancer, only 69(17.6%) correctly identified mammography as a methods for early detection of breast cancer and 46.2% and 55.9% BSE and clinical breast examination respectively. The majority of the study participants, 98% did not have any knowledge regarding the recommended frequency of BSE.(34).

Another survey study was conducted in outpatient clinic at King Abdul-Aziz medical city, Riyadh Saudi Arabia to predict BSE using health belief model among Saudi women.

From 374 outpatient women, family history of breast cancer was reported by 22.9% of women 3.3% near relatives' and 19.6% far relatives. The finding of the study showed that, regarding practice of BSE only 43.5% reported that they are practicing BSE monthly and 44.8% should done BSE five days after menses.(36)

Marital status:- A cross-sectional study conducted in different countries like Jordan ,Ethiopia and Iran showed that marital status has significant association with breast self examination (22,25,39)

However, according to studies conducted in mekele town on community and Nigerian women of community dwelling showed that marital status does not have significant association with breast self examination (26,40)

Occupational status:- Study done in northern Iran on awareness ,attitude and practice of breast cancer screening showed that women who worked outside of their houses as compared with house wives had significantly lower performance of breast self examination(39)

Study conducted on knowledge, attitude and practice towards breast cancer on Nigerian women of community dwelling showed that performance of breast self examination was significant association with occupation. Self employed participants involved in small businesses such as trading and hair dressing jobs had significantly poorer scores compared with those employed in professional jobs like teaching and nursing($x^{2=}$47.11,p<o.0001) (40)

Across-sectional Study done in Mekele town showed that occupation(x^2=38.364,p=0.000) of respondents found to be a significant influence on the knowledge of breast cancer(26).

When to summarize the overall literature review, breast cancer is the most frequent cancer of women (23%) of all cancer, with an estimated 1.15 million cases in 2002. Breast cancer is the most common cancer in women worldwide and the second most common cancer overall. Breast cancer is an emerging public health problem in sub Saharan Africa including Ethiopia. In our country also breast cancer is the first ten top cases of all cancers. Many studies also showed that women lack the knowledge to perform breast self examination. The knowledge of study participants is closely associated to the practice of BSE and attitude towards BSE. Knowledge, age and educational status were the most determinants of breast self examination..

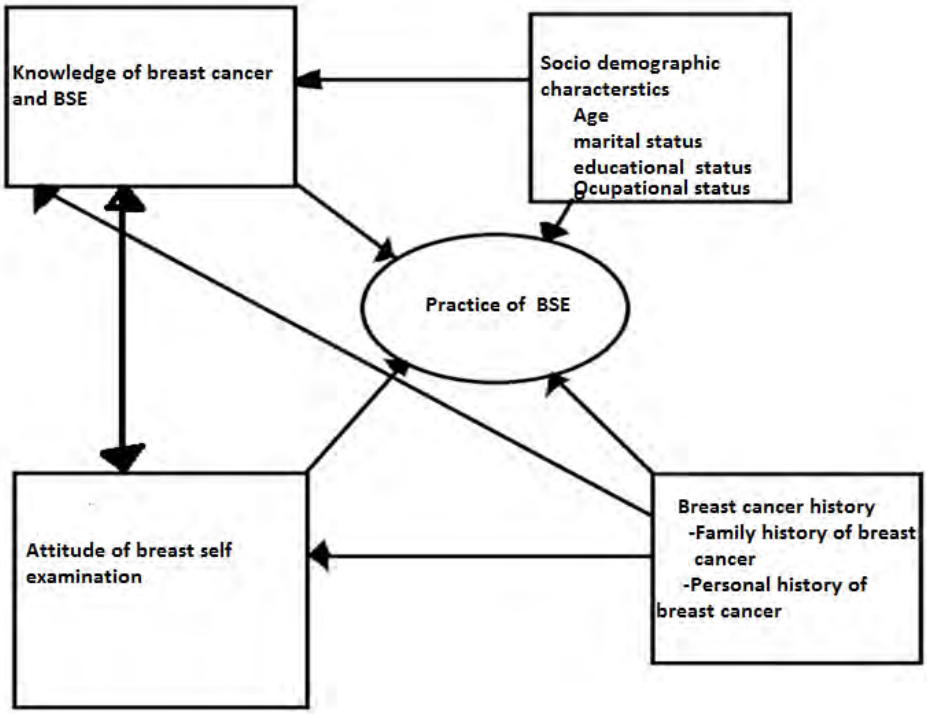

Figure 1 Conceptual framework on knowledge, attitude and practice of breast self-examination among women aged 20-49 years old in Addis Ababa, Ethiopia, 2017(45)

3. Objective of the study

3.1. General objective

The general objective of this study was to assess the knowledge, attitude and practice of breast self-examination among women aged 20-49 years in Addis Ababa, Ethiopia 2017.

3.2 Specific objective

1. To determine the level of knowledge on breast cancer and its self-examination among women aged 20-49 years.

2. To assess the attitude towards BSE among women aged 20-49 years old.

3. To assess practice of breast self-examination among women aged 20-49 years old in Addis Ababa, Ethiopia.

4. To identify factors associated with practice of breast self-examination among women aged 20-49 years.

4. Methods

4.1 Study area

The study was conducted among women aged 20-49 years old in Addis Ababa city administration. Addis Ababa is the capital city of Federal Democratic Republic of Ethiopia.

The city has 10 sub-cities and 116 woredas.The total population of the city was estimated to be 3,433,999 of whom 1,809,000 were women (28).TikurAnbessa specialized hospital is the only government hospital that give breast cancer screening and two private health facilities, Bethezata General Hospital and united vision clinic are privately owned health facilities under going breast cancer screening in the city.

4.2 Study design

A cross-sectional community based study was conducted to assess knowledge, attitude and practice on breast self-examination in Addis Ababa, among women aged 20-49years.

4.3. Source population

The source population for this study was all women of 20-49 years old group are permanently residents of the Addis Ababa city administration.

4.4. Study population

The study population was selected women aged 20-49 years who has been living in study setting for at least six months during the study.

4.5. **Study period**

The study was conducted from April 1-30/2017.

4.6 **Inclusion and exclusion criteria**

4.6.1 Inclusion criteria

Women aged 20-49 years old who stayed for at least six months in Addis Ababa and found in their usual residence houses during the time of data collection.

4.6.2 **Exclusion criteria**

Women who were seriously sick and mentally impaired and who are unable to respond the survey questions were excluded from the study.

4.7. Sample size determination

The required sample size was determined by using a single population proportion formula, by considering the following assumptions:-

NO	Variables	prevalence	Type1 error	power	Estimated sample size	Non-respondent rate	Final sample size
1	Knowledge(26)	34.7	5%	80	348	10%	382
2	Attitude(13)	59.2	5%	80	371	10%	408
3	Practice(26)	53.6	5%	80	382	10%	420

- Prevalence of self-breast examination practice is equal to 53.6% (26).
- Confidence level (95%)
- margin of error(d)=5%
- 10% of the calculated sample size was added to compensate non-response rate

The formula for calculating the sample size (n) was:-

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

Therefore "n" becomes:

$$\mathbf{n} = \frac{(1.96)^2 \times 0.536 \times 0.464}{(0.05)^2} = \frac{3.84 \times 0.248704}{0.0025} = \frac{0.95502336}{0.0025} = \mathbf{382}$$

By adding 10% non-response rate the total sample size required for the study will be 420 and design effect of 1.5 the total sample size will be 630.

4.8. Sampling procedure

Multi- stage random sampling was used to select the study participant. Addis Ababa city administration has 10 sub-cities and 116 woreda. Out of ten sub cities in the administration, four were selected using lottery method to represents 40% of the total sub-cities. Repeating the same technique, one woreda was selected from each of the four sub-cities and the calculated sample size was proportionally allocated to each selected woreda. From each selected woreda, two zones /*ketenas*/were selected by using simple random sampling procedure. Study households in each *ketena* were selected by employing systematic random sampling procedure. First lists of few houses were prepared, from which one house was randomly selected as the starting house. Then follows selecting of households at fixed intervals/every k^{th} /based on the sampling fraction until the last household allocated for each *Ketena* was selected. If there are more than one eligible woman aged 20-49 years in the selected household one of them was randomly selected as a study participant.

Proportionate allocation:

$$\mathbf{n_j = \frac{n.N_j}{N}}$$

Where

nj =sample size in j^{th} ketena house holds

Nj = Total number of households in j^{th} ketena

n = n1+n2+n3+…nk Estimated final sample size

N = N1 + N2 + N3 +…Nk Total number of households in each ketena/zone/.

K=N/n 4500/630 =7

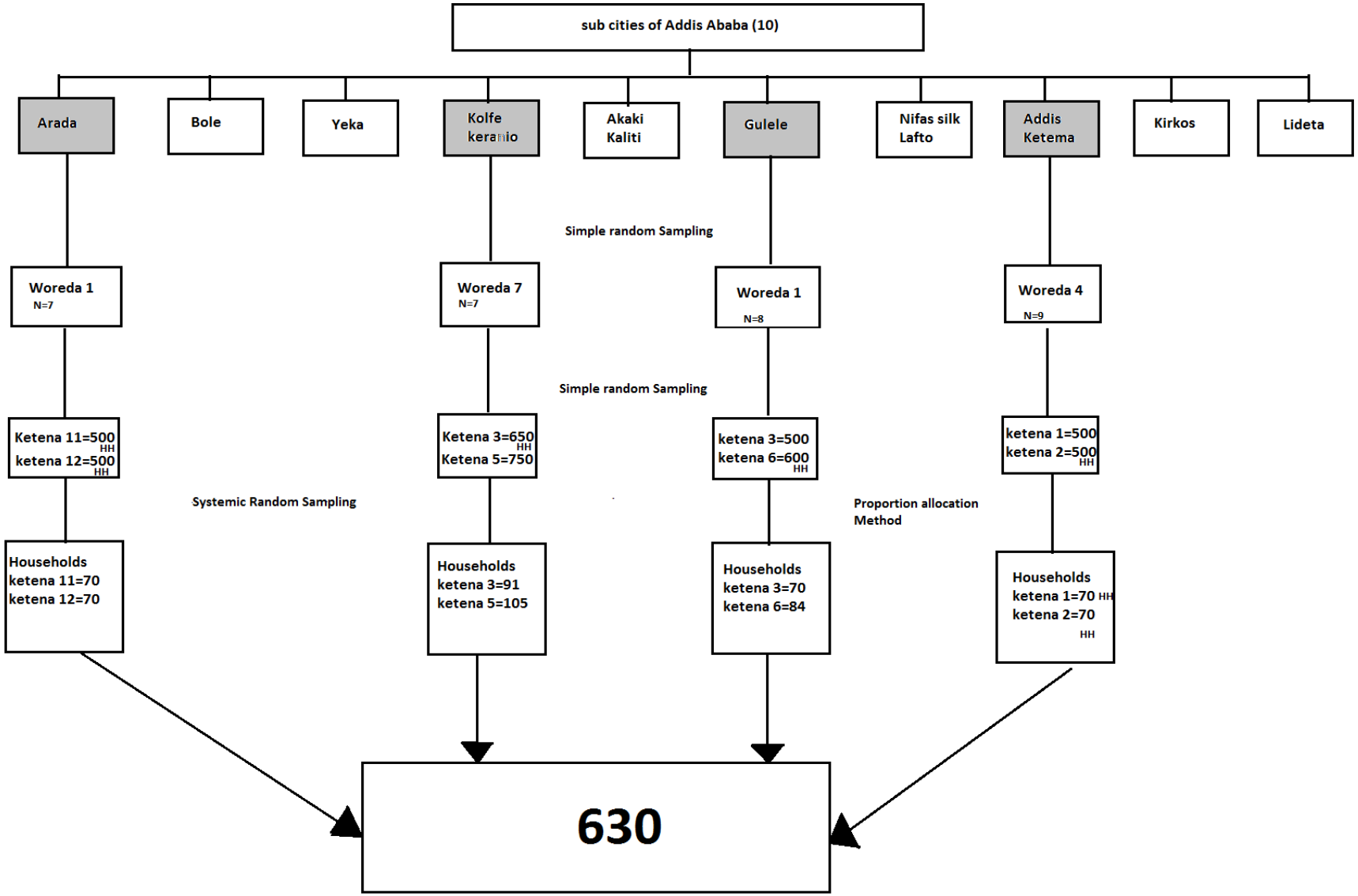

Figure 2: Schematic presentation of sampling procedure used in the study

4.9. Data collection tools and procedure

Data was collected using pre-tested structured questionnaire and the pre- test was given at Addis ketema sub-cities woreda 9, ketena 1 and 2. The questionnaire was first prepared in English reviewing pertinent literature using a rigorous search then it was translated in to Amharic language, for data collection purpose and back to English again by different person of language translators in order to check clarity of the translation of the instrument. The survey was supervised by two health professional with a (BSC degree) and 10 data collectors with diploma in nursing working as health extension workers was recruited. All of the field staffs were females and face to face interview was conducted with study participants.

4.10. Data quality assurances

The questionnaire was pre-tested on 30 mothers (5% of the total sample size) before conducting the actual data collection. A pre-tested result helps to see the accuracy of tool to the required information from study participants. If the drafted tool was devoid of this capacity, the questionnaire was adjusted accordingly.

Training was given for data collectors and supervisors for one day by the principal investigator on the purpose of the study, methods of interviewing and keeping confidentiality of information and other basic principles related to data collection. The data collection instrument was prepared in English translated in to Amharic, and then back to English by different person of language translators to check its consistency.

The completeness of the questionnaire was checked by supervisors at the end of each day and double checked by the researcher /principal investigator/.

4.11. Data processing and analysis

After the data collection was completed, data was checked for completeness and consistencies, then entered and cleaned using Epidata version 3.1 and exported to SPSS version 20 for analysis.

Descriptive statistics was used to see frequency, mean, median, standard deviation and percentage. Presentation of data was done by using tables and figures. Binary logistic repression was used to assess the relationship between independent variable with the outcome variable of interest.

The knowledge of breast cancer and breast self-examination was assessed by multiple questions each correct answer was given as score of 1 and a wrong response a score of 0.

According to bloom's classification cut off points for knowledge score, points was used where a score of 80-100% of correct responses for a good knowledge , a score of 60-79% put satisfactory knowledge and poor knowledge with score less than 60% of the correct response.

On the other hand, the attitude towards BSE was again measure using composite variable:

The belief and feelings was assessed by liker's scale rating system. The question of liker's scale that ranged from strongly agree, agree, neither agree nor disagree, disagree and strong disagree. The scoring system used with respects to respondents were as follows, strongly agree was scored as 5, agree 4, neutral 3, disagree 2, strongly disagree 1. The responses were summed up and a total score was obtained from each respondent. The skewness of the distribution of the cumulated score was explored either the mean or the median score was used to dichotomize it. Then, those scored above the mean or median was positive attitude and below the mean or median was considered has having a negative attitude towards breast self-examination for breast cancer.

Moreover, the practice of breast self-examination was assessed by asking each respondent whether she had any experience of breast self-examination in her life time and for those who had such a practice they were asked the frequency of practice in the past three months, month and week before the study. .

Then socio-demographic characteristics of study participants were presented using tables. Besides knowledge, attitude and practice levels have been presented using tables and figures as necessary. The overall associations between the different covariates with BSE were done with a chi-square test.

Those who turned out statistically significantly associated with BSE were modeled using binary logistic regression. The odds ratio along with their 95% CI was used to measure the degree and direction of association in addition to ascertaining statistical significance.

4.12 Measurement variables

Independent variables

- Socio-demographic characteristics:-
  - Age in years
  - Marital status
  - Educational level of women
  - Occupational status
- Breast cancer history
  - Family history of breast cancer
  - Personal history of breast cancer
- Knowledge on breast self-examination
- Attitude towards breast self-examination

Dependent variable

- Practice of breast self-examination

4.12. Operational Definitions

Breast self examination:-is an examination done by women to her own breasts to check for lumps or other changes. According to this study, breast self examination is described as women in a community who use their hands to inspect and palpate their breast and the surrounding areas for any abnormality.

2Knowledge on breast self-examination:- is the fact of having information about breast self-examination.

According to bloom's classification cut off points for knowledge score

1. Good knowledge a score of 80-100%
2. Satisfactory knowledge a score of 60-70%
3. Poor knowledge a score less than 60% of the correct response.

Attitude towards BSE:- is the belief and feeling of the respondent (what should BSE for breast cancer).

Positive attitude:- participants who scored points equal to and greater than median of attitude questions.

Negative attitude: participants who scored point equal to and less than the median of attitude questions.

Practice of breast self-examination:-is the process of palpating one's own breast at least once a month. In this study, practice of breast self examination is considered as to perform breast examination on their own breast (13).

Permanently resident means for this study women who live in Addis more than six month.

Zone is just like ketena in Addis Ababa which is below woreda according to woreda structure.

4.13. Ethical consideration

Ethical approval has been secured from the research ethics committee of the School of Public Health, College of Health Sciences in Addis Ababa University and Addis Ababa Health Bureau Public Health Research and Emergency Management core Process. So, that permission could be secured at all levels. The respondents were informed about the purpose of the study and they were told to decline to participate in the study if they are not convinced on its purpose. The privacy of respondents was respected. In addition, confidentiality of information were ensured.

The study would not have any harm for study participants except consuming their valuable times. However, an attempt was made to give valuable information on how to make breast self-examination to early diagnose of breast cancer. Study participants were participating in this study without any interference and they won't lose any service even if they decide to decline from the study.

4.14. Dissemination of results

The thesis will be presented in an open defense at the school of public health, Addis Ababa University. The finding will be submitted to Addis Ababa Health Bureau Public Health Research and Emergency Management Core Process. Another copies were also be shared with the Ethiopian cancer association and others governmental and non-governmental organizations. An attempt will also be made to publish and present the findings in scientific conferences.

5. Result

5.1 Socio demographic characteristics of respondents

From a total of 630 sample size 608 participants responded making the response rate 96.5%. The participants ranged from ages of 20 to 49, the mean age being 31.3 with a [SD±7.4]. Regarding their marital status, the majority of the study participants 403(66.3%) were married followed by singles which accounts 133 (21.8%).

Their educational status was also diverse with a little more than one third of the participants 225(37%) achieving secondary education and above while 111(18.3%) participants were illiterate. Most of the interviewees accounting 283(46.5%) were house wives. The least represented group was merchants accounting only for 31(5.1%) of the participants. From the occupational status of study participant private employee accounting 94(15.5%) and 51(8.4%) was student. [Table1].

Table 1. Socio demographic characteristics of the women aged 20-49 years old in Addis Ababa, Ethiopia, 2017

Variable	N= (608)	Percent
Age group (years)		
20-29	283	46.5
30-39	217	35.7
40-49	108	17.8
Marital status		
Single	133	21.8
Married	403	66.3
Divorced	29	4.8
Widowed	28	4.6
Separated	15	2.5
Educational status		
Illiterate	111	18.3
Read and write	80	13.2
Primary school	192	31.5
Secondary school and above	225	37.0
Occupation		
House wife	283	46.5
Government employee	101	16.6
Private employee	94	15.5
Merchant	31	5.1
Daily laborer	48	7.9
Student	51	8.4

5.2. Family and personal history of breast cancer of respondents

Majority of study participants 556 (91.4%) have reported that they did not have history of breast cancer in their families. Twenty one (39.6%) of the participants said it is their aunts who had breast cancer while only 13(24.5%) reported their mothers had breast cancer. Regarding their personal history, only 51 (8.4%) had reported having breast cancer.[Table 2]

Table 2: Family and personal history of breast cancer among women aged 20-49 years old in Addis Ababa, Ethiopia, 2017

Variable	Number	Percent
Family history of breast cancer		
Yes	52	8.6
No	556	91.4
Family members who are affected with breast cancer N=52		
Mother	13	24.5
Sister	7	13.2
Aunt	21	39.6
Grand mother	11	20.8
Personal history of breast cancer		
Yes	51	8.4
No	557	91.6

5.3. Knowledge of respondents towards breast cancer and breast self examination

Among the study participants majority, 319 (52.5%), of them had poor knowledge of breast self examination for breast cancer, but only few 155 (25.5%) had good knowledge.Majority, 399 (65.6%) of respondents, responded yes when asked if early detection of breast cancer would increase chance of survival. The study participant was asked which sex group breast cancer affect more frequently and 547(90%) of respondent said female. From the study respondents 239(39.4%) answer to question the recommended age to begin BSE was age greater than 20 years and 32.8% of the respondents did not know when to start BSE. Among the study subjects 288(47.3%) of the respondents said that breast cancer is not hereditary and 56.6% said that breast cancer presents as painless lump.

An assessment of study participants' knowledge regarding screening methods showed that, 245 (59.6%) participants knew breast cancer screening methods. Three hundred nineteen (52.4%) of the study participants ever heard about breast self examination. The major source of information was mass media (TV, Radio, News paper, Magazine), 183 (57%) ,health professional 174 (54.9%) and friends 46 (14.5%).[Table 3]

Figure 3: Overall assessment of knowledge of breast self examination for breast cancer among women aged 20-49 in Addis Ababa, Ethiopia, 2017.

Table 3: Knowledge of respondents on breast self examination for breast cancer among women aged 20-49 years in Addis Ababa, Ethiopia, 2017

Variables	N=608	Percent
Which sex group does breast cancer affect more frequently?		
Female	547	90
Male	4	0.7
Both	57	9.3
Early detection of breast cancer increase chance of survival ?		
Yes	399	65.6
No	110	18.1
I don't know	99	16.3
Breast cancer is curable if detected at early stage		
Yes	464	76.3
No	144	23.7
Know methods of breast cancer screening		
Yes	245	59.6
No	363	40.4
Hear about breast self examination		
Yes	319	52.4
No	289	47.6
Source of information for breast self examination		
Mass media(TV, Radio, Magazine/News paper)	183	57.0
From friends	46	14.5
Health professional	175	54.9
From others	3	0.9
Breast cancer is inherited		
Yes	158	26
No	288	47.3
I don't know	162	26.7
Recommended age to begin BSE (years)		
Age >20	239	39.4
Age <20	170	27.8
I don't know	199	32.8
Breast self examination should be done by standing in front of mirror		
Yes	256	42
No	159	26.2
I don't know	193	31.8
breast cancer present as painless breast lump		
Yes	344	56.6
No	264	43.4

Among the study participants majority, 376(61.8%) ever used any family planning methods. From those 159 (26.2%), uses inject able family planning ,18.9% pills,16.3% implants and 7.1% uses IUCD respectively. The mean age of study participant started first sex was 20.4 years [SD±3.6]. Among study participants 503(82.7%) had started penetrative sexual intercourse .From those study participants 378(64.8%) did not ever breast feed their child and 316(52%) did not exclusively breast feed their last child.[Table 4]

Table 4: The frequency distribution of risk factors to breast cancer among women aged 20-49 years in Addis Ababa, Ethiopia, 2017

Variable	Frequency	Percent (%)
Have you started penetrative sexual intercourse?		
Yes	503	82.7
No	105	17.3
Ever used any family planning method?		
Yes	376	61.8
No	232	38.2
Which family planning methods did use? N =425		
Pills	115	18.9
Injectable	159	26.2
Implants	99	16.3
IUCD	43	7.1
Condoms	8	1.3
Sterilization	0	0
Traditional methods	1	0.2
Have you given birth to child?		
Yes	394	64.8
No	214	38.2
Ever breast feed your child?	N =394	
Yes	230	37.8
No	378	64.8
Exclusively breast feed your last child?		
Yes	292	48
No	316	52

5.4. Attitude of study participant's towards breast self examination.

The median for total attitude score pertaining to BSE was 41.9.More than half of the study participants 325(53.4%) had positive attitude towards breast self examination.[Figure 4]

Among the study participants, 187 (30.8%) of the respondents worry about getting breast cancer, but nearly half 296 (48.8%) of the study participants do not believe their chance of getting breast cancer is high. More than one quarter 171 (28.2%) fear that breast cancer would threaten their relationship with a partner. And 264 (43.5 %) of respondents expressed that they feel good when they perform breast self examination. About 180(29.6%) agreed to the assertion that doing breast self examination will make them worry about breast cancer. More than half 356(58.1%) of study participants disagree to the statement of doing breast self examination will be embarrassing me and nearly half 271(44.6%) was agreed to the statement iam afraid to think about breast cancer. About 12.9 % of the study participants agreed to doing breast self examination will take much time. From those study respondents 234(38.6%) agree to the statement when I think about breast cancer my heart beat faster. [Table 5]

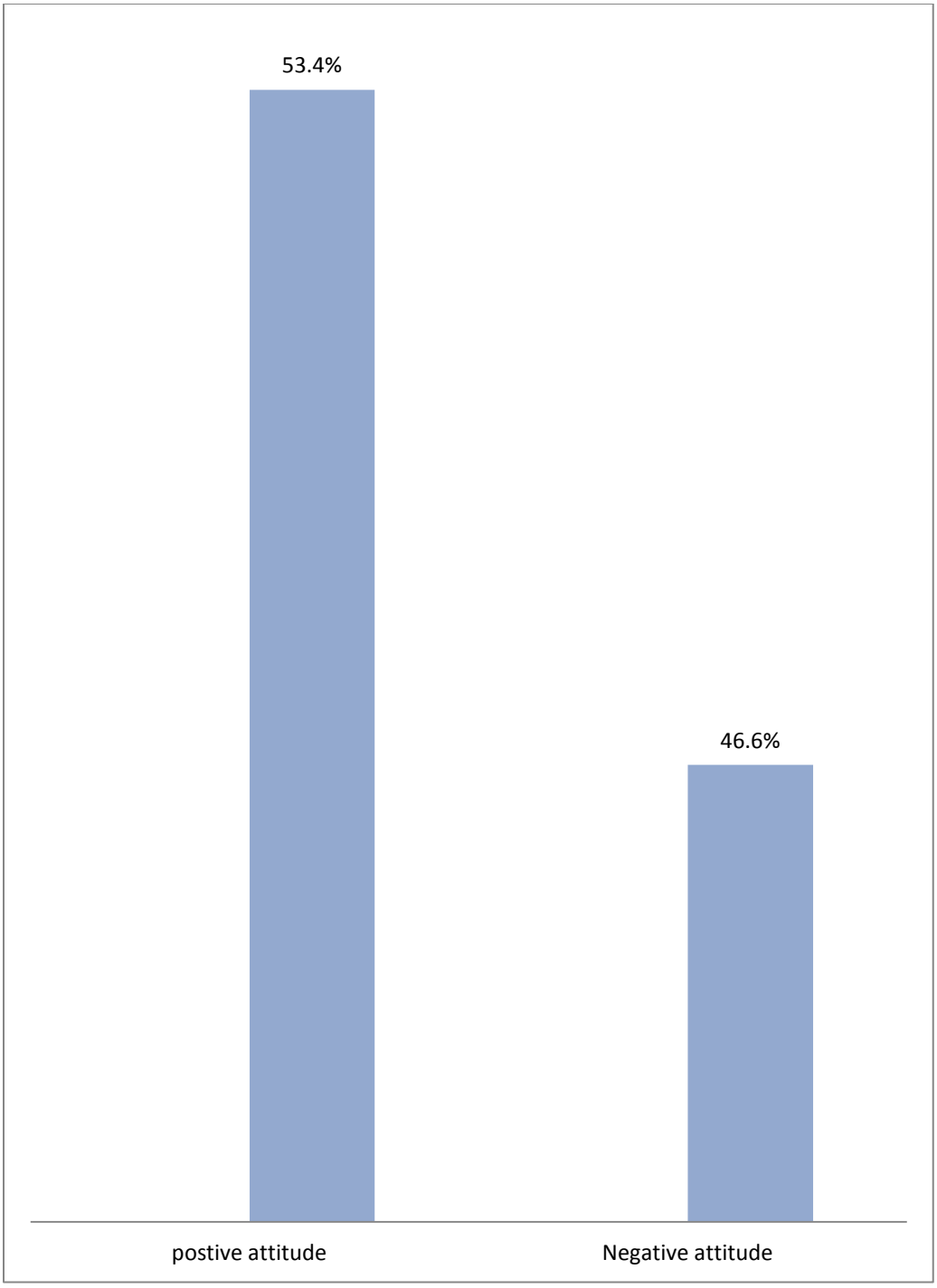

Figure 4.Over all assessment of attitude of breast self examination among women aged 20-49 in Addis Ababa, Ethiopia 2017

Table 5: Frequency distribution of attitude towards breast self examination among women aged 20-49 years old, in Addis Ababa, Ethiopia, 2017

Variables	Strongly disagree N (%)	disagree N (%)	neutral N (%)	agree N (%)	Strongly agree N (%)
Worry about getting breast cancer	33(5.4)	94 (15.5)	39(6.4)	255 (41.9)	187 (30.8)
Chance of getting breast cancer is high	47(7,7)	296(48.8)	120(19.6)	94(15.5)	51(8.4)
When I think about breast cancer my heart beat faster	33(5.4)	149(24.4)	43(7)	234(38.6)	149(24.6)
I am afraid to think about breast cancer	36(5.9)	120(19.7)	43(7)	271(44.6)	137(25.5)
breast cancer would threaten a relationship with boy friend /husband	52(8.4)	178(29.4)	118(19.4)	171(28.2)	89(14.7)
When I do breast self examination I feel good about my self	11(1.8)	83(13.7)	142(23.2)	264(43.5)	108(17.8)
If practiced monthly breast self examination , I don't worry as much about breast cancer	23(3.6)	105(17.3)	115(18.9)	273(44.9)	92(15.2)
If I complete breast self examination , It will help me to find lump which might be cancer in the future	17(2.8)	108(17.6)	116(19.1)	269(44.3)	98(16.1)
Doing breast self examination will make me worry about breast cancer	55(9.06)	254(41.9)	77(12.5)	180(29.6)	42(6.9)
Doing breast self examination will be embarrassing to me	89(14.7)	356(58.6)	52(8.6)	94(15.3)	17(2.8)
Doing breast self examination will take much time	78(12.9)	354(58.1)	87(14.3)	78(12.9)	11(1.8)
I am able to find lump if I perform Doing breast self examination	18(2.8)	100(16.5)	105(17.3)	301(49.6)	84(13.8)
I am able to identify normal and abnormal breast tissue when I do breast self examination	15(2.5)	85(14)	103(17)	306(50.4)	99(16.2)

5.5. Practice of study participants towards breast self examination

This study indicated that only 241 (39.6%) of the study participants ever practiced breast self examination.[Figure 5]. From these, 182 (75.8%) perform for the sake of early detection and treatment of breast cancer while 58 (23.8%) do it for the fear of developing breast cancer, 22(9.2%) had breast problem and 14(5.8%) fear of breast cancer from family. Regarding frequency of performing breast self examination, 63 (26.3%) practice once in a week while 96 (39.8%) do it once in a month and still 52 (21.7%) perform the activity once every six month. And 94 (39.2%) of the interviewees perform the BSE at the right time, which is 5-7 days after menstruation and 117(48.8%) of the respondents practicing BSE at any time during the month. [Table 6]

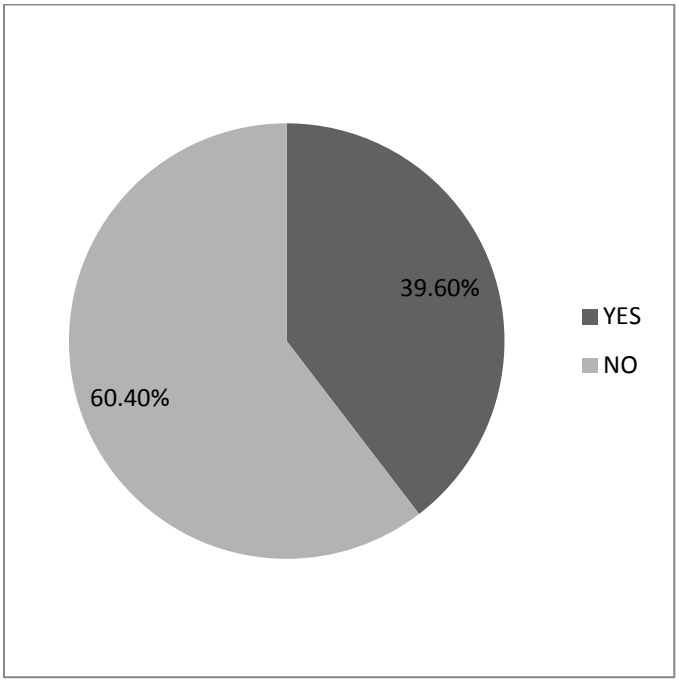

Figure 5:-Breast self examination practice among women aged 20-49 years old in Addis Ababa, Ethiopia, 2017

About 367 (60.4%) did not have ever practiced breast self examination. The main reason they give for not performing is diverse. Not having breast problem accounted for 28.9%, followed closely by not having breast cancer symptom accounting for 25.8% , and still 34.4% did not perform the examination because they do not know how to do it and 10.7% did not know the importance of BSE .Only 106 (17.4%) had ever gone to a physician to have their breast examined.[Figure 6]

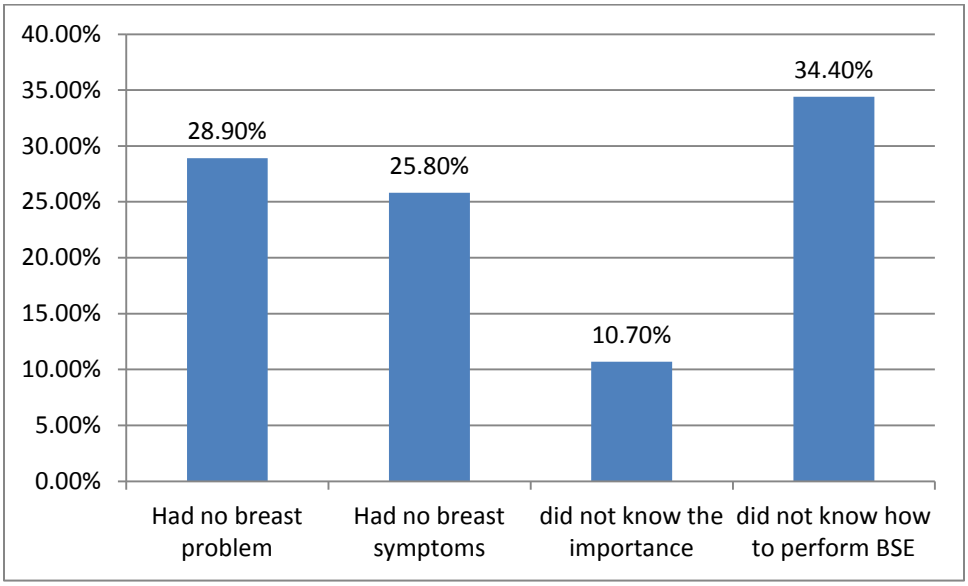

Figure 6 :-Reason for not practicing BSE among women aged 20-49 years old in Addis Ababa, Ethiopia, 2017

Table 6. Assessment of breast self examination practice among women aged 20-49 years old in Addis Ababa, Ethiopia, 2017

Variables	N =608	Percent (%)
Ever performed BSE		
Yes	241	39.6
No	367	60.4
Reason to perform BSE N =276		
Had breast problem	22	9.2
Fear of breast cancer from family	14	5.8
For early detection and treatment	182	75.8
Fear of developing breast cancer	58	23.8
Frequency of performing BSE		
Once in a week	63	26.3
Once in a month	96	39.8
Once in six month	52	21.7
Once in a year	30	12.5
Duration to perform BSE		
5-7 days after menses	94	39.2
2-3 days before menses	30	12.0
Any time during the month	117	48.8
Main reason why you don't practice breast self-examination		
I don't have breast problem	106	28.9
I don't have breast symptom	95	25.8
I don't know how to perform BSE	127	34.4
I don't think it is important	39	10.6
Have you ever had breast examination by a doctor		
Yes	106	17.4
No	502	82.6

5.6. Factors associated with practice of breast self examination

Binary logistic regression analysis was done to identify factors influencing practice of breast self examination in women of reproductive age group in Addis Ababa. On binary analysis educational status, marital status, occupational status, ever use of family planning, ever gave birth and ever breast feeding, knowledge towards BSE and personal history of breast cancer were significantly associated with practice of breast self examination. On binary logistic regression educational status of secondary school and above showed [COR=2.75,95% (1.67,4.53),p=0.000],personal history of breast cancer [COR=1.96,95% CI(1.1,3.5),P=0.022] and from marital status, married was [COR=1.31 95% CI (,0.87,1.96),p=0.19,ever use of family planning [COR=1.38,95% CI(0.98,1.94),P=0.062 and gave birth[COR=1.56,95% CI[1.11,2.23],p=0.01 was significant association on bivarate analysis and then the variables that were $p<0.25$ were taken to multivariable logistic regression and after controlling confounders only two variables, occupational status and knowledge towards BSE were significant association with practice of breast self examination. Those women of reproductive age group who were being employed are about 2 times more likely to practice breast self examination than those non-governmental employee.[AOR=2.13,95% CI(1.19,3.84),p=0.011].There is strong association between knowledge and practice of breast self examination. Regarding knowledge of BSE, those women of reproductive age group who had good knowledge towards BSE were 6 times more likely to practice BSE than those who had poor knowledge[AOR=5.99,95%CI(4.1,8.9) ,p=0.000]. [Table 7].

Table 6:Factors associated with practice of BSE among women aged 20-49 years old in Addis Ababa, Ethiopia, 2017

Variables	BSE Practice		COR(95% CI)	p-value	AOR(95%CI)	P-value
	No n(%)	Yes n(%)				
Educational status						
Illiterate	82	29	1			
Read and write	52	28	0.5 (0.82,2.84)	0.19*	1.4 (0.67,2.75)	0.38
Primary school	119	73	1.74 (1.03,2.93)	0.036*	1.23 (0.68,2.22)	0.49
Secondary and above	114	111	2.75 (1.67,4.53)	0.000*	1.59 (0.89,2.94)	0.15
Marital status						
Single	86	47	1		1	
Married	235	168	1.31(0.87,1.96)	0.19*	1.32 (0.69,2.51)	0.4
Divorced	28	16	1.05 (0.51,2.13)	0.90	0.91(0.35,2.32)	0.84
Widowed	18	10	1.02 (0.43,2.38)	0.97	1.4 (0.4,4.2)	0.54
Occupation						
House wife	182	101	1		1	
Govt. employee	42	59	2.53 (1.59,4.03)	0.000*	2.13 (1.19,3.8 4)	0.011**
Private employee	60	34	1.02(0.63,1.7)	0.93	1.05(0.58,1.89)	0.86
Merchant	20	11	0.99(0.46,2.15)	0.98	0.74 (0.29,1.91)	0.54
Daily laborer	31	17	0.98(0.52,1.87)	0.97	1.36 (0.64,2.9)	0.43
Student	32	19	1.07(0.58,1.98)	0.83	1.19 (0.51,2.84)	0.68
Personal history of breast Cancer						
No	344	213	1	1		
Yes	23	28	1.96 (1.1,3.5)	0.022*	1.51 (0.76,2.97)	0.23
Ever use FP						
No	151	81	1			
Yes	216	160	1.38 (0.98,1.94)	0.062*	0.92 (0.56,1.51)	0.74
Ever breastfeed						
No	153	77		1		
Yes	214	164	1.5 (1.1,2.14)	0.016*	1.31 (0.38,4.47)	0.67
Gave birth						
No	144	70		1		
Yes	223	181	1.56 (1.11,2.23)	0.01*	1.5 (0.42,5.73)	0.52
Knowledge on BSE						
Poor	265	70	1			
Good	102	171	6.34(4.43,9.09)	0.000**	5.99(4.1,8.9)	0.000**

** Significantly associated

6. Discussion

6.1. Knowledge of breast self examination

This study tried to assess knowledge, attitude and practice of breast self examination among women aged 20-49 in Addis Ababa, Ethiopia. One hundred fifty six (25.6%) of the respondents have good knowledge towards breast self examination. A cross-sectional study done among female medical students in Adama health science and technology university, Ethiopia showed that only (8.7%) of the study participants had good knowledge of breast self examination (13). This significant difference may be attributed to the difference in the number of participants. Another study carried on nurses at Addis Ababa university hospital found out that 202(74.8%) had knowledge of breast cancer and breast cancer screening. This is significantly different from the result found in this study. One reason for this gap could be the difference in the careers of participants. Nurses are likely to know about breast cancer and screening more than just ordinary residents of Addis Ababa city (25). This study also found out the participants with good knowledge (25.6%) is less than the figures found for a study conducted in rural area of turkey 76.6 %(15).

Study conducted on women house hold heads in Mekele city, Ethiopia showed that 34.7% had knowledge on breast cancer and its prevention and this study found out that only 25.6 % had good knowledge which is a bit lower. In this study 65.6% of women believed early detection of breast cancer increases chances of survival, while high percentage (90.2%) of the study participants in Mekele city agreed on the statement. This could also be due to the difference in number of study participants (26).

Four hundred sixty four (76.3%) correctly noted that breast cancer is curable, if detected early which is high when compared to a study done in Nigeria on knowledge ,attitude and practice which was 41.4% (40).

On assessment of participants' knowledge on symptoms of breast cancer, this study found out that 344(56.6%) replied correctly by saying breast cancer is presented as painless lump which is high than the study in Nigeria which was at 21.4% (40)

The finding of the study among Female University students in Presbyterian University College, Ghana showed that 95% of the respondents had good knowledge about breast cancer and BSE (18) which was higher compared to this study. This might be explained by the fact that the study participants were female nursing students who had better clinical knowledge about BSE.

The study done in Haromaya University also showed that among the study participants 85.7% noted that early detection of breast cancer increases chance of survival and 65% of students knew all the three methods of breast cancer screening which is mammography, CBE and BSE (35).The difference in this study, may be due to fact that, study participants were health science students who are expected to be knowledgeable on breast cancer self examination than women in the community of Addis Ababa.

According to this study, 319(52.4%) of the study participants had heard about breast self examination previously. On the contrary, 304(45%) of study participants had breast cancer information and heard about breast self examination (26).

In this study the major source of information about BSE was mass Media (TV, Radio, Magazine and Newspaper) which accounted for 57%. The case was similar in other studies conducted in Ghana (48%) and Mekele, Ethiopia, 58.5% (18,26).

This study revealed that 239(39.4%) of the study participants noted that the recommended age to begin BSE was beyond the age of 20 years, and 199(32.8%) did not know when to start BSE. Another study done in Ethiopia, Mekele city showed that study participants know that BSE should be started after the age of 20, which accounts for 67% and 19.4% did not know at what age BSE should begin(26).

6.2. Attitude towards breast self examination

This study showed that 325(53.4%) of respondents had positive attitude towards breast self examination. The study carried out in Adama health science and technology university, showed that 59.2% of the study participants had positive attitude towards breast self examination (13).The gap might be due to the fact students had better opportunity to get information from college than women in community. Another study conducted in Haromaya University, showed

that study participants believed that breast self examination can be key instrument for early detection of breast cancer and most of the students had positive attitude (35).

Study done in female student in Jordan, indicated that 37% of the students did not believe they were susceptible to breast cancer (22). This study also showed that 15.5% of study respondents did not worry about getting breast cancer.

A cross-sectional study conducted in south west Cameron, to assess knowledge, attitude and practice of breast self examination, showed that 88% of students perceive breast self examination as an important method in the early detection of breast cancer (17). In contrast, 50.4% of the study respondents believe that doing breast self examination helps to identify breast normal and abnormal tissue at early stages. The gap might be the study participant in Cameron was student and the study respondents of this were women of reproductive age group in community and the student might be get information from school, friends and from media than women in a community. So community awareness creation should be needed for early detection of breast cancer.

The study finding in buea, Cameron showed that 7.8% and 4.8% of the study participants were fearful of breast lump and the embracement to do breast self examination respectively (17). And in this study, high percentage 44.6% have fear of breast cancer and 15.3% are embarrassed by doing breast self examination. The discrepancy might be sample size of study participants in Cameron were 166 which is low compared to this study participant and may be students had an information regarding BSE and breast cancer and majority(88%) perceived breast self examination is important for early detection of breast cancer. I suggest that community awareness creation was needs to increase good perception towards breast cancer and BSE.

6.3. Practice of breast self examination

In this study, 39.6% of the study participants have practiced breast self examination at least once. The study done in Adama Health Science and Technology University, showed almost similar practice of BSE at 39.4% (13).In my opinion the similarity might be there is no curriculum at school that give some knowledge or training on screening methods and early detection of breast cancer and students are not more practice breast self examination and they reflect the lack awareness regarding BSE in both student and community.

Another study done in Cameron showed that only 62(41%) of the study participant had performed BSE. This discrepancy may be attributed to the fact that study participants in the Cameron study were health science students compared to community based study participants in this study. (17).

Compared to this study, the finding of the study done in Mekele city indicated that higher percentage of participants 53.6% practiced BSE. (26).

The study carried out in Haromaya University Ethiopia, on breast cancer and practice of BSE reveal that 77% had never performed BSE.

In this study, from those who have performed BSE, 96(39.8%) performed BSE monthly on a regular basis which is higher than other studies done in Turkey(10.2%),Jordan (7%), Adama Ethiopia (5.5%) and Mekele city (29.5%) (15,22,13,26).

This study found out that majority of the study participants, 39.2% performed BSE at the right time of 5-7 days after menstruation. Studies in Tikur anbessa specialized referral Hospital and at St.Paulos General Hospital showed that 51.5% of respondents practiced breast self examination monthly 1-7 day after menses (25).

The difference may be due to study participant in university hospital were nurses and have knowledge on screening methods from experience and training and they know time how often to practice breast self examination than this community study participant. So, community awareness creation at different level were needed and especially the health facility should give information at morning during health education give taught on the techniques how to practice BSE and when to practice and how often to practice breast self examination.

In this study the main reasons for not practicing BSE as explained by participants were not knowing how to perform breast self examination at 34.4%, not having breast problem at 28.9%, not having breast cancer symptoms at 25.8%, and the rest 10.6% don`t know the importance of BSE. Similarly, in the study carried out in Buea, Cameron the number one reason for not performing BSE was having no sign of breast cancer at 36.7% (17). Another studies conducted in Mekele, Gojam, Ethiopia also showed that the main reasons for not performing breast self examination were having no breast problem, not knowing breast self examination

technique, not knowing the importance of breast self examination and absence of breast symptoms or disease (9, 26).

6.4. Factors associated with practice of breast self examination

This study also found out that there is significant relationship between practices of breast self examination and some variables like, occupational status and knowledge of BSE. Other socio-demographic factors like age of the respondent, marital status and family history of breast cancer, personal history of breast cancer, educational status were found to be not significantly associated with practice of breast self examination in multivariate analysis. But in bivariate analysis education was strongly associated with practice of breast self examination. women of reproductive age group who achieve primary school were nearly 2 times more likely to have practice BSE than those who have no formal education[COR =1.74 ,95%CI (1.03,2.93),P=0.036] while those women of reproductive age group with secondary education and above are about 2.7times more likely to practice than those with no formal education [COR =2.75 ,95% CI (1.67,4.53) ,P=0.000].Also study participants who had personal history of breast cancer were 2 times more likely to practice BSE than those who have no personal history of breast cancer [COR= 1.96, 95% CI (1.1, 3.5), P=0.022].

Another study conducted in Nigeria, showed that higher level of education was significantly associated with practice of breast self examination (31).

Women with higher education and thus more informed about breast cancer better performed breast self examination. (x^2=73.1, P< 0.0001) (27). A study carried out in Kefa province in Ethiopia showed that participant knowledge increases the odds of performing BSE.(AOR= 1.1(95% CI 1.05-1.1) (37).

According to this study those women of reproductive age group who had good knowledge towards breast self examination were 6 times more likely to practice BSE than those who had poor knowledge [AOR=5.99, 95%CI (4.1, 8.9),p=0.000

In similar study carried out in Nigeria, participants with higher knowledge were about 3 times more likely to practice BSE (AOR = 2.95, 95% CI 2.15–4.05) (40).

Cross-sectional studies conducted in different countries like Jordan ,Ethiopia and Iran all showed that marital status has significant association with breast self examination (22,25,39) .
In this study why marital status was not significant association might be age variation which is reproductive age group 20-49 years old and in other study Jordan age ranged from 18 to 59, Ethiopia, 21 to 58 and Iran, 20 to 80 years old females.

This study also indicated that there is a significant association between occupational status and practice of breast self examination. Women of reproductive age group who are working in government employee are about 2 times more likely to practice breast self examination than those non-governmental employee.[AOR=2.13,95% CI(1.19,3.84),p=0.011.

7. Strength and limitation

7.1. Strength

This study is among the few community based study conducted in Addis Ababa.

7.2. Limitation

Respondent's bias as Likert's scale was used to assess attitude of study participants.

The use of cross- sectional study design has limitation to know the cause and effect.

8. Conclusion

- Among study participants majority had poor knowledge of breast self examination
- More than half of the study participants had positive attitude towards breast self examination
- Among the study participants, practiced of breast self examination was low.
- Age, marital status ,educational status, personal history and family history of breast cancer were not found to be significant association with breast self examination practice
- Occupational status and having good knowledge towards BSE were significant association with practice of breast self examination.

9. Recommendation

- As results show that practice of BSE and knowledge among these reproductive age group women was inadequate. Efforts should be made to strengthen community based health education to increase knowledge related to breast cancer as well as the practice of breast self-examination.
- So, Federal Ministry of Health, Addis Ababa health Bureau and Ethiopian cancer association were responsible bodies to promote awareness creation in the community level on breast cancer and breast self examination.
- Finally, additional community based research should be needed for the future to improve understanding of the community on practice of breast self examination

10. References

1. IARC WHO(2013) latest world cancer statistics
2. WHO (IARC) World Cancer Report 2008
3. Breast cancer.Org. *U.S. Breast Cancer Statistics. U.S. Breast Cancer Statistics _Breastcancer.org.html (accessed 16 October 2016).*

4.WHO. *Breastcancer:*preventionandcontrol. *http://www.who.int/cancer/detection/breastcancer/en/ (accessed 17 October 2016).*

5. Jamal A, DVM, PhD1; Bray F, PhD2; Forman D, PhD2; Brien M, PhD3; Ferlay J, BS2; Melissa Center, MPH1; and Parkin M.D, MD4,5. Cancer Burden in Africa and Opportunities for Prevention. *Wiley Online Library (wileyonlinelibrary.com)* 17 January 2012; 118(18): 4372-4384.

6. World health organization. *Cancer - a Growing Public Health Concern for Ethiopia. http://www.afro.who.int/en/ethiopia/press-materials/item/7062-cancer-a-growing-public-health-concern-for-ethiopia.html (*accessed14November2016*).*

7. AFCRN. *AddisAbabaCity Cancer Registry. http://afcrn.org/membership/members/100-Addisababa (*accessed *29 October 2016).*

8. Abate SM, Yilma Z, Assefa M, Tigeneh W (2016) Trends of Breast Cancer in Ethiopia. Int J Cancer Res Mol Mech 2(1): doi http://dx.doi. org/10.16966/2381-3318.121

9. Azage M., Abeje G., and Mekonnen M. Assessment of Factors Associated with Breast Self-Examination among Health Extension Workers in West Gojjam Zone, Northwest Ethiopia. *International Journal of Breast* Cancer 2013;

10. Akhigbe O.A*1 and Omuemu O.V2. Knowledge, attitudes and practice of breast cancer screening among female health workers in a Nigerian urban city. *BioMed Central* 25 June 2009; 1471-2407(9/203): 1-9.

11. Makanjuola O.J., Amoo .P. O., Ajibade B.L., Makinde .O.Y.. Breast Cancer: Knowledge And Practice Of Breast Self Examination Among Women In Rural Community Of Ondo State, Nigeria.. *IOSR Journal of Pharmacy and Biological Sciences* 2013; 8(1): 32-37.

12. Hailu T., Berhe H., Hailu D, *, Berhe H. Knowledge of breast cancer and its early detection measures among female students, in Mekelle University, Tigray region, Ethiopia. *Science Journal of Clinical Medicine* 2014; 3((4):): 57-64.

13. Segni T.M*, Tadesse M.D, Amdemichae.R , and Demissie F.H. Breast Self-examination: Knowledge, Attitude, and Practice among Female Health Science Students at Adama Science and Technology University, Ethiopia. *Gynecology Obstetrics* 2016;6(4):

14. Dr. D. Max Parkin MD, Mr. Freddie Bray, Mr. J. Ferlay, Dr. Paola Pisani PhD. Global Cancer Statistics 2002. *A cancer journal for clinicial* March 2005; 55(2): 74-108.

15. Dündar EP., Özmen .D, Öztürk. B, Haspolat .G, Akyıldız F, Çoban S., and Çakıroğlu G. The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in western Turkey. *BioMed Central* 24 February 2006; 1471-2407(/6/43): 1-9.

16. Ahmed .F, •Mahmud. S, • Hatcher.J and • Khan M.S. Breast cancer risk factor knowledge among nurses in teaching hospitals of Karachi, Pakistan: a cross-sectional study. *BioMedcenteral* 2006;5(6):17. Nde P.F, Assob N.CM, Kwenti E.T, Njunda L.A and Tainenbe G.RT. Knowledge, attitude and practice of breast self-examination among female undergraduate students in the UniversityofBuea. *BMCResearchNotes* 2015;8(43):

18.Sarfo.A.K*, Peasah A.D, Acheampong E, and Asamoah. F. Knowledge, attitude, and practice of self-breast examination among female university students at Presbyterian University College, Ghana. *American JournalofResearchCommunication* 2013;1(11):395-40.

19. Poonawalla B.I, Goyal S, Mehrotra N, Allicock M , Balasubramanian A.B*. Attitudes of South Asian Women to Breast Health and Breast Cancer Screening: Findings from a Community Based Sample in the United States. *Asian PacificJournalofCancerPrevention,* 2014;15(20):8719-8724.

20. Bazargan M, PhD,. Wright LA, MA, Jones L, MA, .Vargas, R. PhD, Vadgama V.J, PhD,1 Manly.S. Understanding Perceived Benefit of Early Cancer Detection: Community-Partnered Research with African American Women in South Los Angeles. *JOURNAL OF WOMEN'S HEALTH* 2015; 24(9):761-767.

21. Jahan.S,MPH,FCPS,Alsaigul.M.,MuzamilH.A.,Gadir. A. phD.Msc. Knowledge, attitude and practices of breast self examination among women in Qasim region of Saudi Arabia. Saudi Med J.2006;27(11).

22. Petro-Nustus W, Mikhail IB. Factors Associated with Breast Self-Examination Among Jordanian Women. *Public Health Nursing* July/August 2002; 19(4): 263-271.

23. Hajian S, Vakilian K, Najabadi MK, Hosseini J, Mirzaei RH. Effects of Education Based on the Health Belief Model on Screening Behavior in High Risk Women for Breast Cancer, Tehran, Iran. *Asian Pacific Journal of Cancer Prevention* 2011; 12(): 49-54.

24. Akpınar YY, Baykan Z*, Naçar M, Gün I, Çetinkaya F. Knowledge, Attitude about Breast Cancer and Practice of Breast Cancer Screening among Female Health Care Professionals: A Study From Turkey. *Asian Pacific JournalofCancerPrevention* 2011;12():3063-3068.

25.Lemlem BS, Sinishaw W, Hailu M,* Abebe M, and Aregay A. Assessment of Knowledge of Breast Cancer and Screening Methods among Nurses in University Hospitals in Addis Ababa, Ethiopia,. *PMC* 2013;

26.Legesse B, Gedif T*. Knowledge on breast cancer and its prevention among women household heads in Northern Ethiopia. *Open Journal of Preventive Medicine* 2014;4(1):32-40.

27. Montazeri A., Vahdaninia M., Harirchi I.,Harirchi MA., Sajadian A, Khaleghi F.. et.al. Breast cancer in Iran: need for greater women awareness of warning signs and effective screening methods. *Asia Pacific Family Medicine* December 2008; 7(6):

28. Federal Democratic Republic of Ethiopia,Centeral statics Agency, Population projection of Ethiopia for all regions at woread level from 2014-2017 G.C.

29.FMOH:National non-communicable disease strategic action plan march 10,2014 PdF.

30.WHO(2015). Pink Month Commemorated at WHO Ethiopia.

31. Adelekan LM., Edoni RE. Awareness, Knowledge and Practices of Breast Cancer Prevention among Women with Family History of Breast Cancer in Ede, Osun State, Nigeria. *IOSR Journal of Dental and Medical Sciences* 2012;2(2):42-47.

32. Mah Z., MSc; Bryant H., MD, PhD, CCFP, FRCPC. Age as a factor in breast cancer knowledge, attitudes and screening behaviour. *CAN MED ASSOC J* 1992; 146(12): 2167-2174.

33. Al-NaggarAR., Al-Naggar HD, Bobryshev VY, Chen R, Assabri A. Practice and Barriers Toward Breast Self-Examination Among Young Malaysian Women. *Asian Pacific J Cancer Prev,* 2011; 12(2011): 1173-1178

34. Al-Sharbatti SS., Shaikh BR., Al-Biate AM. Assessment of Breast Cancer Awareness among Female University Students in Ajman, United Arab Emirates. *SULTAN QABOOS UNIVERSITY MED J* November 2014; 14(4): 522-529

35.Ameer K, Abdulie SM, Pal SK. Breast Cancer Awareness and Practice of Breast Self-Examination among Female Medical Students in Haramaya University , Harar , Ethiopia. Int J Interdiscip Multidiscip Stud (IJIMS),. 2014;2(2348 –0343):109–19

36. Abolfotouh AM., BaniMustafa A.A, Mahfouz A.A, Al-Assiri HM,Al-Juhani FA and Alaskar S.A. Using the health belief model to predict breast self examination among Saudi women. *Abolfotouh et al. BMC Public Health (2015) 15:1163*

DOI10.1186/s12889-015-2510-y 2015;15(1163):3-12.

37. Birhane N, Mamo A, Girma E and Asfaw S. Predictors of breast self - examination among female teachers in Ethiopia using health belief model. *Archives of Public Health* 2015; 73(39):

38. Abu-Helalah MA ., Alshraideh HA., Al-Serhan AA, Kawaleet M., Nesheiwat AI. Knowledge, Barriers and Attitudes Towards Breast Cancer Mammography Screening in Jordan. *Asian Pac J Cancer Prev, 2015;* 16 (9), 3981-3990.

DOI:http://dx.doi.org/10.7314/APJCP.2015.16.9.3981

39. Tilaki KH and Auladi S. Awareness, Attitude, and Practice of Breast Cancer Screening Women, and the Associated Socio-Demographic Characteristics, in Northern Iran. Iran J Cancer Preven. 2015;8(4):e3429

40. Okobia NM., Bunker HC., Okonofua EF and Osime U. Knowledge, attitude and practice of Nigerian women towards breast cancer: A cross-sectional study. *World Journal of Surgical Oncology* 21 February 2006; 4(11)

41. Ethiopian Cancer Association. Fight against tobacco to reduce the Risk of cancer through Anti-tobacco youth clubs in Ethiopia.2008. Availableat:http://www.yeeca.org/Projects2 html.2007 .

42.Dye TD, Bogale S, Hobden C, Tilahun Y, Deressa T, Reeler A. Experience of Initial Symptoms of Breast Cancer and Triggers for Action in Ethiopia. International J breast cancer. 2011;2012:1–5.

43.Anderson BO, Shyyan R, Eniu A, Smith R a, Yip C-H, Bese NS, et al. Breast cancer in limited-resource countries: an overview of the Breast Health Global Initiative 2005 guidelines. Breast J .2006;12 Suppl 1:S3–15. Available from:

http://www.ncbi.nlm.nih.gov/pubmed/16430397

44. Supa pengpid,karlpelter. Knowledge, Attitude and Practice of Breast Self-examination Among Female University Students from 24 Low, Middle Income and Emerging Economy Countries . *Asian Pac J Cancer Prev,* **15 (20)**, 8637-8640

45. Amare MG. Assessment of knowledge and practice of breast self examination among female undergraduate students in Addis Ababa university, college of business and economics, Ethiopia. Addis Ababa university digital library 2016.

11. Annexes

I. Information sheet

Questioners prepared to measure **knowledge, attitude and practice of self breast examination and to identify factors associated with breast cancer self examination among women aged 20-49 years in 2016/2017**

Good morning /Good afternoon ,I am…….working as data collector in this study that asses knowledge, attitude and practice of self breast examination in women aged 20-49 years in Addis Ababa .Dear respondents here are lists of questioners with different sections ,which are designed for research work to be conducted in partial fulfillment of in master Degree in public health by Chala Chimdi from School of public health, Addis Ababa .I am going to ask you some very personal questions that some people find it difficult to answer .Your responses are completely confidential .Your name will not be written on these questionnaire, and will never be used in connection with any of the information you provided .You don't have to answer any question that you do not want to answer, and you may decide not to participate in the study any time you want .However ,your honest response to this questions will help us to better understand on knowledge, attitude and practice of self breast examination for cancer screening. We would greatly appreciate your help in responding to these questions. It will take about 30 minutes and there is no benefit or payment that you get for your participation in this study. But your honest & genuine response to each question will play a major role in the attainment of the objective of the study. Therefore we thank you in advance and greatly appreciate your helping. Do you understand all that has been said so far?

In case you need to contact the principal investigator here are his contact details:

Contact Address of the Investigators :- **Chala Chimdi** Tel.0911727358

Email chimdi_i@yhoo.com or

chalachimdi@gmail.com

II. Consent form

I heard the information sheet above clearly & understood the purpose, benefit and what is required from me if I take part in the study. I understood that all the information regarding me like name and all answers given by me must not be transferred to a third party. I also understand that I can decide whether or not to take part in the study or even withdraw from the study at any time. So I am willing to participate in the study.

Yes ☐ No ☐

Signature/finger print of participant----------Date----------

Data collector Name----------sign----------Date----------

House hold number----------

III. English questionnaire form

Section 1: Socio-demographic characteristics

SNo	Question	Response	Skip
101	How old are you ?	----------years	
102	What is your educational status?	1.Illiterate 2.Read and write 3.Primary school 4.Secondary school and above	
103	Have you started penetrative sexual intercourse?	1.Yes 2.No	If your answer is NO go to number 107
104	What is your age at first sex ?	_____age	
105	What is your current marital status?	1.Single 2.Married 3.Divorced 4.Widowed 5.Separated	
106	What is your age at first marriage?	----------completed years	
107	What is your occupation	1.House wife 2.Govenment employee 3.Private employee 4.Merchant 5.Daily laborer 6.Student	
108	Have you ever used any family planning method?	1.yes 2. No	If your answer is NO go to number 111
109	Which family planning methods did use?(multiple response is possible)	1.Pills 2.Injectables 3.Implants 4.IUCD 5.Condoms 6.Sterlization 7.Traditional methods	
110	How long have you been using modern family planning methods?	_____months _____years	

111	Have you given birth to a child?	1.Yes 2.No	If your answer is NO go to number 201
112	Did you ever breastfeed your child?	1.Yes 2.No	If your answer is NO go to number 201
113	How long have you breast feed your last child?	_____months	
114	Did you exclusively breastfeed your last child?	1.Yes 2.No	

Section 2.Family and Personal history Breast cancer

201	Do you have any family history of breast cancer?	1.Yes 2. No	If your answer is NO go to number 203
202	If yes for Q.201 who is affected? (multiple answer is possible)	1.Mother 2.Sister 3.Aunt 4.Grand mother 5.Other specify-------	
203	Do you have personal history of breast cancer?	1.Yes 2.No	

Section 3.Knowldege about breast cancer and self examination

301	Which sex group does breast cancer affect more frequently?	1.Female 2.Male 3.Both are affected	
302	Early detection of breast cancer increase chance of survival?	1.Yes 2.No 3.Idon't know	
303	Breast cancer is curable if detected at early stage of the disease?	1.Yes 2.No	
304	Do you know methods of breast cancer screening?	1.Yes 2.No/don't know/	
305	Did you hear about breast self examination?	1.Yes 2.No	If your answer is NO go to number 307
306	If yes for Q.NO 305 where did you hear about breast self examination?(multiple	1.Mass media/ TV, Radio and from magazine/	

	response is possible).	2. Friends/relatives 3.Health personnel 4.From Others----------	
307	Breast cancer is inherited?	1.Yes 2.No 3.Idon't know	
308	When should a girl begin breast self examination?	1.Age > 20 years 2.Age < 20 years 3.Idont know	
309	BSE should be done by standing in front of mirror?	1.Yes 2. No 3.Idon't know	
310	Breast cancer usually present as painless breast lump?	1.Yes 2.No	

Section 4.Attitude towards breast self examination

S.No	Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
401	I worry a lot about getting breast cancer					
402	My chance of getting breast cancer is high					
403	When I think about breast cancer my heartbeat faster					
404	I am afraid to think about breast cancer					
405	Breast cancer would threaten a relationship with boyfriend or husband					
406	When I do breast self-examination, I feel good about myself					
407	If practiced monthly Breast					

	self examination, I don't worry as much about breast cancer.					
408	If I complete breast self-examination, it will help me to find lump which might be cancer in the future					
409	Doing breast self- examination will make me worry about breast cancer					
410	Doing breast self- examination will be embarrassing to me					
411	Doing breast self- examination will take too much time					
412	I am able to find lump if I perform breast self-examination					
413	I am able to identify normal and abnormal breast tissue when I do breast self-examination.					

Section 5. Practice of breast self examination

S.No	Question	Response	Skip pattern
501	Did you ever perform breast self-examination?	1.Yes 2.No	If NO go to Q. NO 505
502	Why do you perform breast self-examination?(more than one answer is possible)	1.Had breast problem 2.Fear of breast cancer from family 3.For early detection and treatment 4.Fear of developing breast cancer	
503	How often do you practice breast self-	1. Once in a week	

	examination?	2. Once in a month 3. Once in 6 month 4. Once in a year	
504	When do you perform breast self-examination?	1. 5-7 days after menses 2. 2-3 days before menses 3.Any time during the month 4.Idon't know	
505	For Q. Number 501 If you don't practice breast self-examination, what are the main reasons?	1.Idon't have breast problem 2.I don't have breast symptoms 3.Idon't know how to perform breast self examination 4.Idon't think it is important	
506	Have you ever had breast examination by a doctor?	1.Yes 2.No	

VI. Amharic version questionnarie

የመረጃ ወረቀት

በ2008 /2009 አድሜያቸው ከ20 እስከ 49 የሆኑ ሴቶችን የጡት የራስ በራስ ምርመራ እንዲሁም ከጡት ካንሰር ጋር ተያያዥነት ያላቸው ነገሮችን ለመለየት ያላቸው እውቀት፣ አስተሳሰብ እና ትግበራን ለመለካት የቀረበ መጠየቅ ነው።

እንደምን አደሩ / እንደምን ዋሉ እኔ _____እባላለሁ፡ በአዲስ አበባ ከተማ እድሜያቸው ከ 20 እስከ 49 ያሉትን ሴቶች የራስ በራስ የጡት ምርመራ እውቀት፣ አስተሳሰብ እና ትግበራን አስመልክቶ መረጃ ሰብሳቢ ሆኜ እየሰራሁ እገኛለሁ። ውድ ምላሽ ሰጪዎች እነዚህ ቃለ መጠየቆች የተለያዩ ክፍሎች ያላቸው ሆኖዉ ተዘጋጅተዋል። ይህም መጠየቅ በአቶ ጫላ ጭምዲ ከአዳስ አበባ የማህበረሰብ ጤና ትምህርት ቤት በሕብረተሰብ ጤና የሁለተኛ ዲግሪ ትምህርቱን በከፊል የማጠናቀቂያ ጥናት ለማድረግ የተዘጋጀ ነው። እንዲሁም እርስዎ የሚሰጡት ማንኛውም መረጃ ጋር ተያይዞ ስሞዎ አይጠቀስም። ለመመለስ የማይፈልጉትን ጥያቄን እንድመልሱ አይገደዱም። እንዲሁም በማንኛውም ጊዜ በጥናቱ ላይ ላለመሳተፍ መወሰን ይችላሉ። ይሁን እንጂ ለእነዚህ ጥያቄዎች የሚሰጡት ታማኝ መልሶች የጡት ካንሰር አስመልክቶ የራስ በራስ ጡት ምርመራን እውቀት፣ አስተሳሰብ እና ትግበራ ምን ደረጃ ላይእንደምገኝ ለማወቅ ይረዱናል። እነዚህን ጥያቄዎች ለመመለስ ላደረጉልን ድጋፍ አድናቆታችን የላቀ ነው። 30 ደቂቃን እወስዳለሁ። በዚህ ጥናት ላይ በመሳተፍዎ ምንም አይነት ጥቅምም ሆነ ክፍያ አይኖርም። ነገር ግን በእያንዳንዱ ጥያቄ ላይ የእርስዎ ታማኝነት እና ትክክለኛነት መሳተፍ የጥናቱን አላማ ከግብ ለማድረስ ከፍተኛ ሚናን ይኖረዋል። ዋና መርማሪን ለማነጋገር ቢፈልጉ የአድራሻው ዝርዝር እንደሚከተለው ነው።

መርማሪዎች አድራሻ አቶ ጫላ ጭምዲ ስልክ 0911727358

ኢሜይል - chimdi_i@yahoo.com ወይም chalachimdi@gmail.com

የስምምነት ቅፅ

ከዚህ ላይ የተጠቀሰውን መረጃ በግልፅ ተገንዝቤያለሁ። እንዲሁም አላማውን እና ጥቅሙን ተረድቻለሁ። በተጨማሪም በዚህ ጥናት ላይ ተሳታፊ ከሆንኩ ምን እንደሚጠበቅብኝ ተገንዝቤያለሁ።ሁሉም ስለ እኔ የተገለፁ መረጃዎች እንዲሁም በእኔ የተሰጡ ሁሉም መልሶች ለ3ኛወገንመተላለፍየለባቸውም።በዚህ ጥናት ላይ በተሳታፊ ለመሆን እና ላለመሆን መወሰንየምችል መሆኔን ተገንዝቤያለሁ። እንዲሁም በማንኛውም ጊዜ የጥናቱን ተሳትፎ ማቋረጥ እንደምችል ተገንዝቤያለሁ። ከዚህ በታች የተዘረዘሩት መጠይቆች ለመመለስ ፍቃደኛ ኖት ?

አዎ ☐

አይደለሁም ☐

የተሳታፊ ፊርማ/የጣት አሻራ _____ቀን _____

የመረጃ ሰብሳቢ ፊርማ/የጣት አሻራ _____ቀን _____

የቤት ቁጥር_____

ክፍል አንድ: ማህበራዊ እና የስነ-ህዝብ መረጃ

ቁጥር	ጥያቄ	መልስ	ወደ ሌላ ማስፍ
101	ዕድሜዎት ስንት ነው ?	----------ዓመት	
102	የትምህርት ደረጃዎን ይግለፁ?	1.ያልተማረ 2.ማንበብና መፃፍ የሚችል 3.አንደኛ ደረጃ 4.ሁለተኛ ደረጃ እና ከዛ በላይ	
103	የግብረ ስጋ ግኑኝነት ጀምረሻል	1.አዎ 2.አልጀመረኩም	መልሶ አልጀመረኩም ከሆነ ወደ ተራ ቁጥር 107 ይለፉ
104	ለመጀመርያ ጊዜ የግብረ ስጋ ግኑኝነት የፈፀምሽዉ በስንት አመትሽ ነዉ?	_____እድሜ	
105	የጋብቻ ሁኔታ?	1.ያላገባች 2.ያገባች 3.የፈታች 4.ባል የሞተባት 5.በትዳር ተለያይቶ መኖር	
106	የመጀመርያ ጋብቻ ስትፈፅሚ እድሜሽ ስንት ነበር?	_____እድሜ በሙሉ አመት	
107	ሥራዎት ምንድን ነው?	1.የቤት እመቤት 2.የመንግስት ሠራተኛ 3.የግል ሰራተኛ 4.ነጋዴ 5.የቀን ሠራተኛ 6.ተማሪ	
108	ከዚህን በፍት የቤተሰብ ምጣኔ አገልግሎት ተጠቅሞ ያቃሉ?	1.አዎ ተጠቅሜ አዉቃለዉ 2.ተጠቅሜ አላዉቅም	መልሶ ተጠቅሜ አላዉቅም ከሆነ ወደ ተራ ቁጥር 111 ይለፉ
109	ከተጠቀምሽ የትኛዉን የቤተሰብ ምጣኔ ዘዴ ነዉ የተጠቀሙት?(ከአንድ በላይ መልስ መስጠት ይቻላል)	1. የምዋጥ ክንን 2. በመርፌ መልክ የምሰጥ 3. በክንድ ቆዳ ስር የምቀበር/የምቀመጥ/ 4. በማህፀን ዉስጥ የምቀመጥ የወልድ መቆጣጠርያ(loop) 5. ኮንዶም በመጠቀም	

		6. የወንድ ዘር ፍረ መተሳሰፍያ ወይም የሴት እንቁላል መተሳሰፍያን ማስቁጠር 7.ተፈጥሮዊ የመከላከያ ዜዴዎች (የቀን መቁጠሪያ calander method)፣ ጡትበማጥባት(breast feeding)	
110	ዘመናዊ የቤተሰብ ምጣኔ ዘዴ ስምን ያህል ግዜ ነዉ የተጠቀምሽዉ?	_____በወራት ----------በአመት	
111	ከዚህ በፈት ወልደሻል?	1.አዎ 2. አልወለድኩም	መልሶ አልወለድኩም ከሆነ ወደ ተራ ቁጥር 201 ይለፉ
112	ልጅሽን ጡት አጥብተሻል ?	1.አዎ አጠብቻለዉ 2.አላጠባዉም	መልሶ አላጠባዉም ከሆነ ወደ ተራ ቁጥር 201 ይለፉ
113	የመጨረሻ ልጅሽን ስምን ያህል ጊዜ ጡት አጥብተሻል?	----------በወራት	
114	የመጨረሻ ልጅሽን ስ 6 ወር ጡት ብቻ ነዉ ያጠባሽዉ?	1.አዎ 2.አይደለም	

ክፍል ሁለት: የቤተሰብ እና የግል የጡት ካንሰር በሽታን በተመለከተ

201	ከቤተሰበዎ ዉስጥ በጡት ካንሰር የተያዘ ሰዉ አለ? /አናት፣አህት፣አክስት/	1.አዎ 2..የለኝም	መልሶ የለኝም ከሆነ ወደ ተራ ቁጥር 203 ይለፉ
202	ለተራ ቁጥር 201 መልሶ አዎ ከሆነ የተጐዳዉ ማን ነዉ?	1.እናት 2.እህት 3.አክስት 4.የሴት አያት 5.ሌላ -----	
203	ለስ ጡት ካንሰር የግል ታሪክ አለዎት?	1.አዎ 2..የለኝም	

ክፍል ሶስት: **ስለ ራስ በራስ የጡት ምርማራ** /Breast self examination/ “**<u>እውቀትን</u>**” **በተመለከተ**

301	**የትኛው የጾታ ክፍል ብዙውን ጊዜ በጡት ካንሰር ይጠቃል ብለዉ ያምናሉ**?	1.**ሴት** 2.**ወንድ** 3.**ሁለቱም ያጠቃል**	
302	**ስለቀድሞ የጡት ካንሰር ማወቅ የመኖር እድልን ይጨምራል**?	1.**አዎ ይጨምራል** 2.**አይጨምርም** 3.**አላውቅም**	
303	**የጡት ካንሰርን በመጀመሪያ ደረጃ ላይ ካወቁ መዳን ይቻላል ብለዉ ያምናሉ**?	1.**አዎ** 2 **አይደለም**	
304	**የጡት ካንሰር ምርመራ ዘዴዎችን ያውቃሉን**?	1.**አዎ** 2.**አላዉቅም**	
305	**ስለጡት የራስ በራስ ምርመራን ስምተው ያውቃሉ**?	1.**አዎ** 2.**አላዉቅም**	**መልሶ አላዉቅም ከሆነ ወደ ተራ ቁጥር** 307 **ይሰፉ**
306	**ስለጡት የራስ በራስ ምርመራን ከየት ሰሙ**?(**ከአንድ በላይ መልስ መስጠት ይቻላል**)	1.**ከብዙዋን መገናኛ ዘዴዎች(ከተለቭዝን፣ ከሬዲዮ፣.ከበራሪ ወረቀቶች** 2.**ከጓደኛ/ከዘመድ** 3.**ከጤና ባለሙያዎች** 4.**ሰላ ካስ ይግለፁ**---------- ----	

307	**የጡት ካንሰር በዘር የሚተላለፍ በሽታ ነው ብለሽ ታስባለሽ** ?	1.**አዎ** 2.**አይደለም** 3.**አላውቅም**	
308	**ሴት ልጅ የጡት የራስ በራስ ምርመራን መጀመር ያለባት መቼ ነው**?	1.**አድሜ** >20 **አመት** 2.**አድሜ**<20 **አመት** 3.**አላውቅም**	
309	**መስታዉት ፊት ለፊት በመቆም የጡት የራስ በራስ ምርመራ ማድረግ ይቻላል** ?	1.**አዎ ይቻላል** 2.**አይቻልም** 3.**አላውቅም**	
310	**የጡት ካንሰር እጢ ህመም የለዉም ብለዉ ያምናሉ**?	1.**አዎ** 2.**አይደለም**	

ክፍል አራት፡ስለ ራስ በራስ የጡት ምርመራ” <u>ስመለካከትን</u>” በተመለከተ

ቁጥር	ጥያቄ	በጣም አልስማማም(1)	አልስማማም (2)	ሀሳብ የለኝም (3)	እስማማለሁ (4)	በጣም እስማማለሁ(5)
401	በጡት ካንሰር መያዝ በጣም ያሳስበኛል					
402	በጡት ካንሰር የመያዝ እድሌ ከፍተኛ ነው					
403	ስለ ጡት ካንሰር ሳስብ የልብ ትርታዬ ይጨምራል					
404	ስለ ጡት ካንሰር ማሰብ ያስፈራኛል					
405	የጡት ካንሰር ከወንድ ጓደኛዬ ወይም ከባለቤቴ ጋር ያለኝን ግንኙነት ያሻክራል ብዬ እሰጋለሁ					
406	የጡት ካንሰር የራስ በራስ ምርመራን ሳደርግ ስለራሴ ጥሩ ይሰማኛል					
407	የጡት ካንሰር የራስ በራስ ምርመራን በየወሩ ካደረኩኝ ስለ ጡት ካንሰር ብዙም አልጨነቅም					
408	የጡት የራስ በራስ ምርመራን ካጠናቀቁኝ ለወደፊት ካንሰር የሚሆንን የጡት ጠጠር ለማግኘት ያስችለኛል					

ቁጥር	ጥያቄ	በጣም አልስማማም	አልስማማም	ሀሳብ የለኝም	እስማማለሁ	በጣም እስማማለሁ
409	የጡት የራስ በራስ ምርመራ ማድረግ ስለ ጡት ካንሰር እንዲጨነቅ ያደርገኛል					
410	የጡት የራስ ምርመራን ማድረግ ያሳፍረኛል					
411	የጡት የራስ በራስ ምርመራ ብዙውን ጊዜ ይወስዳል					
412	የጡት የራስ ምርመራን ካደረኩኝ					

	ጠጠር መሰል ነገር በጡት ውስጥ መኖሩን ማግኘት ይችላሉ					
413	የጡት የራስ ምርመራን በማድረግበት ወቅት ጤናማ እና ጤናማ ያልሆነ የጡት ጡንቻን መለየት እችላለሁ					

ክፍል አምስት: የራስ በራስ የጡት ምርመራ "ተግባርን" በተመለከተ

ተ.ቁ	ጥያቄ	መልስ	ወደ ሌላ ማለፍ
501	ከዚህ በፊት የጡት የራስ በራስ ምርመራን አድርገው ያውቃሉ?	1.አዎ 2.አላዉቅም	መልሶ አላዉቅም ከሆነ ወደ ተራ ቁጥር ጥያቄ 505 ይለፉ
502	የጡት የራስ በራስ ምርመራን ለምን ያደርጋሉ?(ከአንድ በላይ መልስ መመለስ ይቻላል)	1.የጡት ችግር ስለነበረብኝ 2.የቤተሰብ የጡት ካንሰር ስላለ 3.አስቀድሞ የመለየት እና ሕክምና ለማገኘት 4.የጡት ካንሰር ፍራቻ	
503	የራስ በራስ የጡት ምርመራን በምን ያህል ጊዜ ያደርጋሉ?	1.በሳምነት አንድ ጊዜ 2.በወር አንድ ጊዜ 3.በስድስት ወር አንድ ጊዜ 4.በአመት አንድ ጊዜ	
504	የራስ በራስ የጡት ምርመራን መቼ ያደርጋሉ?	1.ከወር አበባ በጓላ ከ5-7 ቀናት ውስጥ 2.ከወር አበባ በፍት ከ2-3 ቀናት ዉስጥ 3.በወር ውስጥ በማንኛውም ጊዜ	
505	ስጥያቄ 501 ምላሾ « አላውቅም» ከሆነ የራስ በራስ የጡት ምርመራ የማታደርገዎ በምን ምክንያት ነው?	1. የጡት በሽታ የለብኝም 2. የጡት ህመም ምልክት የለብኝም 3. እንዴት እንደሚመረመረ አላውቅም 4.ደጠቅማል ብዬ አላስብም	
506	ከዚህ በፊት በህክምና የጡት ምርመራ አድርገዉ ያቃሉ?	1.አዎ 2.አላዉቅም	

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 chala chimdi entitled ''Assessment of knowledge, attitude and practice of self breast examination among women of 20-49 years old in Addis Ababa,Ethiopia,2017''. 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 chala chimdi and examined the candidate.We recommend that the thesis be accepted as fulfilling the thesis requirements for the Degree of Master of public health.

_____	_____	_____
Internal examiner	Signature	Date
_____	_____	_____
External examiner	Signature	Date

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical Conduct of the research project and for provision of required progress reports as Per terms and conditions of the Research Publications Office in effect at the time of Grant is forwarded as the result of this application.

Name of the student: _____

Date._____ Signature _____

Approval of the primary Advisor

Name of the primary advisor:_____

Date._____ Signature _____