ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF MAGNITUDE AND ASSOCIATED FACTORS OF BREAST ABNORMALITIESAMONG WOMEN IN SELECTED HEALTH CENTERS IN ADDIS ABABA CITY, ETHIOPIA.

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Acronyms / Abbreviations

AA	Addis Ababa
AAU	Addis Ababa University
ADH	Atypical Ductal Hyperplasia
AD	Atypia Hyperplasia
ALH	Atypical lobular Hyperplasia
CIS	Carcinoma-In-situ
CM	Centimeter
DCIS	Ductal Carcinoma-In-situ
GC	Gregorian calendar
HC	Health Center
KM	Kilo Meter
LCIC	Lobular Carcinoma-In-situ
LMIC	Low and Middle Income Countries
NCDs	Non Communicable Diseases
OC	Oral Contraceptives
PI	Principal Investigator
SPSS	Statistical Package for Social Sciences
USA	United States of America

Abstract

Background: Breast disorders may be noncancerous (benign) or cancerous (malignant). Breast cancer is by far the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed in 2012.breast cancer is the leading reproductive cancer in Ethiopia with an estimated 12956 new cases and7089 deaths in 2012. Knowing the magnitude and associated factors of breast abnormality will help the government and other actors implementing strategies for early detection and minimization of breast abnormality occurrences in the community leading to reduced incidence of breast cancer.

Objectives: The aim of this study is to assess the magnitude and associated factors of breast abnormalities among women in selected health centers in Addis Ababa city.

Methods: The study was done in Addis Ababa, Ethiopia. The study population was all women above age of 18 attending the selected health centers at the time of the study. The study was conducted between April 1 and April 31, 2018. A facility based cross-sectional study design was employed. The total sample size of the study was 1173. Health centers were selected from sub cities proportionally based on their population size by simple random sampling technique. Data was collected using interview method and presence or absence of breast abnormality was determined by self-reporting of participants. Data was entered into Epi-info version7.1, cleaned and exported to SPSS v21 for analysis.

Result: According to this study the magnitude of breast abnormality among women above the age of 18 in Addis Ababa city is 51(4.63%). Based on this analysis age ≥45yrs has odds ratio of 5.4[AOR =5.409(1.196-24.460)]. The odds ratio for first degree relative with breast abnormality history is 9.44[AOR = 9.435(3.123 - 28.508)]. Similarly the odds ratio for previous history of breast abnormality is 10.99[AOR = 10.991(3.051 - 39.599)]. Age at menstruation also have odds ratio for both ages 12 – 13yrs and > 13yrs [AOR = 0.120(0.023 -0.622), 0.128(0.028 - 0.591)]. respectively. Odds ratio for Women who breast fed is [AOR= 0.103(0.031 - 0.343)].

Conclusion: Magnitude of breast abnormality is 51(4.63%). Breast abnormality were found to be significantly associated with age above 44yrs, first degree relative breast abnormality history, previous history of breast abnormality age at menarche and exposure to breast feeding.

1 Introduction

1.1. Background

Breast disorders may be noncancerous (benign) or cancerous (malignant) most are non-cancerous and not life threatening. Often they do not require treatment. In contrast breast cancer can mean loss of a breast or life. Thus, for many women breast cancer is their worst fear. The commonest forms breast disorders are breast cancer, breast cysts, breast lumps, breast infection and breast abscess, breast pain, Fibroadenomas of the breast, fibrocystic change of the breast and nipple discharges(1).

Breast lumps are a very common complaint in women. Breast lumps may occur spontaneously or gradually and may be accompanied by other symptoms such as breast pain, changes in the skin or changes in the nipple(2). A breast lump may or may not be noticeable to the patient; normal breast tissue can be quite lumpy in some women and some lumps can be small or located deep in the breast. Special tests such as a mammogram often detect breast lumps that cannot be felt(2).

Malignant breast disease or Breast cancer is breast disease that has become cancerous. It first present as a palpable breast lump and may be painless. Any changes in breast or skin appearance, nipple discharge, nipple inversion and breast pain might be symptoms of breast cancer(2).

Breast cancer is broadly classified as ductal (originating from the milk ducts inside the breast) or lobular (originating from the breast tissue surrounding the ducts). Breast cancer is preceded by a series of stages of cellular change; normal breast cells take an abnormal shape (atypical hyperplasia), develop into localized areas of cancerous cells (carcinoma-in-situ) and then into frank breast cancer that can spread to other areas of the body. These changes are also classified by the area (ductal or lobular), hence the terms ductal carcinoma-in-situ (DCIS) and lobular carcinoma-in-situ (LCIS). Approximately 80% of breast cancers are ductal in origin and 12% are lobular, with the remaining cases are made up by the more rare causes of breast cancer. Rare types of breast cancer include lymphoma of the breast, spread of cancer from other tissues to the breast (such as from small bowel cancer) or cancers of the blood vessels within the breast (mammary angiosarcoma)(2).

Over 90% of breast lumps are caused by benign breast disease the other 10% of people presenting with breast lumps turn out to have breast cancer(2). BBD is the most common cause of breast problems, at some time in their lives up to 30% of women will suffer from a benign breast disorder requiring treatment(3).

Breast cancer is the second most common cancer in the world and, by far the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed in 2012. A slight majority of cases occur in women in less developed regions. Incidence rates vary nearly fourfold across the world regions, with rates ranging from 27 per 100,000 in Middle Africa and Eastern Asia to 96 in Western Europe. Breast cancer ranks as the fifth cause of death from cancer overall (522,000 deaths) and while it is the most frequent cause of cancer death in women in less developed regions (324,000 deaths, 14.3% of total), it is now the second cause of cancer death in more developed regions (198,000 deaths, 15.4%) after lung cancer(4).

In east Africa the epidemiology of breast cancer shows that it is the second reproductive organ cancer next to cervical uteri cancer with an incidence of 33500 cases and with mortality of 17000 still following cervical uteri cancer(4).

The Ethiopian condition on the contrary is different from east Africa and in line with the cumulative world statistics by being the leading reproductive cancer with an estimated 12956 new cases and7089 deaths in 2012(4).

Global breast cancer incidence patterns reflect both risk factors and the availability of screening. The highest breast cancer incidence rates are in North America, Australia/New Zealand, and Northern and Western Europe, while the lowest are in Africa and Asia; Mortality rates on the other hand reflect the occurrence of the disease as well as the availability of early detection and treatment. Breast cancer mortality rates are higher in many LMICs, such as those in sub-Saharan Africa, despite their lower incidence because of late stage at diagnosis and limited access to treatment(5).

The purpose of this study is to assess the magnitude and associated factors of breast abnormalities in Addis Ababa which will help to quantify the proportion of breast Abnormalities and factors that put people at risk of acquiring them this will help individuals to get notice on how susceptible they are and get tested and treated early which will lead to favorable prognosis.

1.2. Statement of the problem

It is an agreement in the scientific community that certain types of breast masses pose an increased risk for breast cancer. Varies literatures suggest different amount of risks for different conditions for instance a book on principles of surgery suggests people with atypical hyperplasia have 4 times greater risk of acquiring breast cancer than healthy people other literatures done on the same area also support this finding claiming conditions such as atypia hyperplasia, proliferative lesions, lobular proliferation, Fibroadenomas, sclerosis adenosis might significantly increase the chance of breast cancer(6-9).

Breast cancer is the most frequently diagnosed cancer and the leading cause of cancer death among women worldwide. It is also the most frequently diagnosed cancer in the majority (140 of 184) of countries and accounts for 25% of cancer cases and 15% of cancer deaths among women worldwide(5). Five-year survival is 85% or higher in the US, Canada, Australia, Israel, Brazil, and many Northern and Western European countries, while it is 60% or lower in many LMICs, such as South Africa, Mongolia, Algeria, and India(5).

About 80% of reported cancer cases are diagnosed at advanced stages in Ethiopia, when very little can be done to treat the disease leading to low survival of patients. This is largely due to the low awareness of cancer signs and symptoms, inadequate screening and early detection and treatment services, inadequate diagnostic facilities and poorly structured referral(10).

Little is known about the scale of the problem, which makes it all the more difficult to formulate policies and/or develop practical strategies for dealing with it. It may be one of the reasons for absence of adequate facilities to fight against breast cancer in this country(10). Ethiopia is planning to provide clinical breast examination for all women above age 18 coming to health institutions for other complaints as a national strategy due to the consequences of late detection of cancer cases(10). But even if the strategy is planned in 2016 it hasn’t been implemented and early screening is still a problem in Ethiopia.

The data from this study will serve as a base line for planning, resource allocation of the mass breast assessment by the government and for formulation of new polices which may lead to early detection and treatment of breast abnormalities in the community leading to reduced incidence and mortality of breast cancer.

2 Literature review

Different sources suggest different proportions of benign and malignant breast masses, some state the malignancy level reaches from 20 – 25% while others put it only up to 10%and the odds are even lower in women aged less than 40 years(2, 11).As the numbers show BBD is the most common cause of breast problems, at some time in their lives up to 30% of women will suffer from a benign breast disorder requiring treatment(3). The greatest risk of breast masses is the possibility of malignancy because breast cancer is among the top killer NCDs among women.

Breast cancer is the highest incident cancer of all cancer cases worldwide in 2012 and the second killer of all cancer forms next to lung cancer; the age standardized incidence of breast cancer is 43.3 per 100,000 population while the mortality rate 4.6 per 100,000(4). Breast cancer incidence and mortality varies from region to region, the developed countries having the highest incidence i.e. 74.1 per 100,000 as compared to the less developed regions having incidence of 31.3 per 100,000 populations, on the other hand age adjusted mortality are high in less developed countries as compared to the incidence rates in this parts of the world (14.9/100,000 in more developed regions, 11.5/100,000 in less developed regions)(4, 5).

The American region has high incidence with a rate of 67.6 per 100,000, the highest rate recorded in north America (91.6 per 100,000) and the lowest in central America (32.8 per 100,000). This area has the second highest incidence rate next to Europe(4). According to a statistics by American cancer society an estimated 231,840 new cases of invasive breast cancer and 60,290 additional cases of in situ breast cancer will be diagnosed among women and also approximately 40,290 women are expected to die from breast cancer in the United States on 2015(12).

Europe being the region with the highest incidence rate across the world having 71.1 per 100,000 population breast cancer cases with western Europe leading the region and the least age adjusted rate being in central and eastern Europe(96.0 per 100,000western Europe, 47.7 per 100,000 central and eastern Europe)(4).

Asia is the continent with lowest cumulative adjusted rate in the world with 29.1 per 100,000 populations, western Asia showing the highest rate 42.8 per 100,000 and east assia the lowest rate 27.0 per 100,000 populations(4).

Africa has the second lowest breast cancer incidence rate which is 36.2 per 100,000 populations. When we look the regional incidences in the continent north Africa has the highest rate of 43.2 per 100,000 followed by south Africa 38.9 per 100,000, west Africa 38.6 per 100,000, east Africa 30.4 per 100,000 and the least rate being observed in central Africa 26.8 per 100,000(4).

An estimated 5 year prevalence of breast cancer in Ethiopia in adult population in 2012 was 39293 making it the most prevalent cancer type in the country. Addis Ababa's cancer registry data collected from 2011-2014 also shows that the city had 1881 cases of breast cancer making it the number one prevalent cancer in the city(10, 13).The five year mortality of breast cancer in Ethiopia was 7089 which makes it the number one killer cancer.

Breast cancer incidence and mortality reflects on different issues. Incidence for instance reflects on risk factors and the availability of screening this is why the highest breast cancer incidence rates are in, developed countries while the lowest are in less developed countries; on the other hand mortality reflects occurrence of the disease as well as the availability of early detection and treatment, this explains that Breast cancer mortality rates are higher in many LMICs, such as those in sub-Saharan Africa, despite their lower incidence because of late stage at diagnosis and limited access to treatment(5).

According to the only oncology center in the country (Tikur Anbessa (Black Lion) Specialized Hospital), about 80% of reported cases of cancer are diagnosed at when very little can be done to treat the disease. This is largely due to the low awareness of cancer signs and symptoms, inadequate screening and early detection and treatment services, inadequate diagnostic facilities and poorly structured referral. Data and research are crucial in prevention and control of any disease but Cancer research, comprehensive cancer surveillance system, and population-based cancer registry (limited to the Addis Ababa region at present) in Ethiopia are not commensurate with the magnitude of the problem. This is due to inadequate funding and training facilities in cancer research(10).

Varies studies throughout the world have tried to study the risk of having a lumps or more specifically benign breast diseases for acquiring breast cancer, a study done in Canada that tried to assess First Screen Results as Predictors of Future Breast Cancer risk claims that women who had a lump or possible lump are 1.65 times more likely to acquire breast cancer (14). According to these literatures the highest risk of breast cancer is exhibited in proliferative benign breast diseases with atypia such as atypical lobular hyperplasia and atypical ductal hyperplasia. Among this the highest risk was observed in the study "Stratification of Breast Cancer Risk in Women With Atypia: A Mayo Cohort Study" done in the united states in 2007, in this study women with multifocal atypia have a relative risk of 10.35; while the lowest risk was seen in the study "Risk Factors for breast cancer from benign breast disease in a diverse population" done in the same country in 2009, the relative risk among women with atypia in this study was 3.75(15-20). As compared to proliferative diseases non proliferative breast diseases have the lowest risk, a study conducted in Spain suggests the odds of a women with nonproliferative to acquire breast cancer is 2.23 times than their healthy equals(19). Another study done in the USA in 1991 also suggests fibroadenoma increases a risk of breast cancer by 70% but there is contradicting evidence on this condition showing a 35% decrease in risk due to this condition(16, 21). Although there is a consensus on proliferative breast diseases to increase the risk of breast cancer, there is a difference on non-proliferative breast diseases.

Many factors known to increase the risk of breast cancer are not modifiable, such as age, family history, early menarche, and late menopause. Factors that are modifiable include postmenopausal obesity, the use of exogenous hormones (oral contraceptives and combined postmenopausal hormone replacement therapy), alcohol consumption, no exercise, no breastfeeding and recent prospective studies have shown an association between smoking and breast cancer(5, 12).

Carcinoma of the breast is extremely rare below the age of 20 years but, thereafter, the incidence steadily rises so that by the age of 90 years nearly 20% of women are affected(3). Also a study done here in Addis Ababa at Black Lion Specialized Hospital also suggest risk of breast cancer increases with age(22, 23).

Hormone related factors are the prominent factors regarding breast diseases and many researchers have tried to measure their effect, it is now mostly believed that increased exposure to estrogen is associated with an increased risk for developing breast cancer(6). So menstruating

early in life than normally expected is believed to increase risk of breast cancer, this is supported by a study done in Pakistan(24). On the other hand the same study and another one done in Iran claim that late menopause increases the odds of having a breast cancer, particularly the one study on Iranian women claims late menopause increase the odds of acquiring breast cancer by 3.15 fold(24, 25). Having no children can also be a risk and on the contrary having many children has a preventive effect, according to Mojtaba, etal. The odds ratio for having children regarding breast cancer is 0.27. giving birth at early age mainly age less than 30 years is said to be one of the factors that minimize individuals risk to breast cancer, women who's late age at full term pregnancy is > 30 years are 3.77 times most likely to develop breast cancer(26). Breastfeeding for a year or more slightly reduces a woman's overall risk of breast cancer. The protective effect may be stronger if Breastfed for longer duration(12). Other factor related to estrogen hormone is oral contractive use, many literatures point that OC use contributes to overall breast cancer risk with odds of 1.33 but in most of the studies the risk is smaller than most of the above mentioned risk factors(25, 27, 28).

Risk factors related to lifestyle are drinking, smoking, exercise and obesity. These risk factors contribution to risk of breast cancer have been backed by research. Drinking Alcohol >15 g/day will increase hazard for breast cancer by 2.74 and another research on benign breast disease on adults shows a risk of 5.5 for those who drink 6 or 7 days a week(29). Regarding smoking, a study suggests smoking for 35 years and above leads to a hazard ratio of 1.6(30, 31). Exercise both walking and strenuous exercise is shown to reduce risk of benign breast disease and breast cancer and no exercise results in increased risk (32-34). Obesity increases the risk of postmenopausal breast cancer. Risk is about 1.5 times higher in overweight women and about 2 times higher in obese women than in lean women(12).

A meta-analysis done on women between age 40 and 49 found out that there is a 2 fold increase of breast cancer risk due to first degree family history and a 5.7 times increase in risk was observed in turkey women with first degree family history(35, 36).

Conceptual Framework

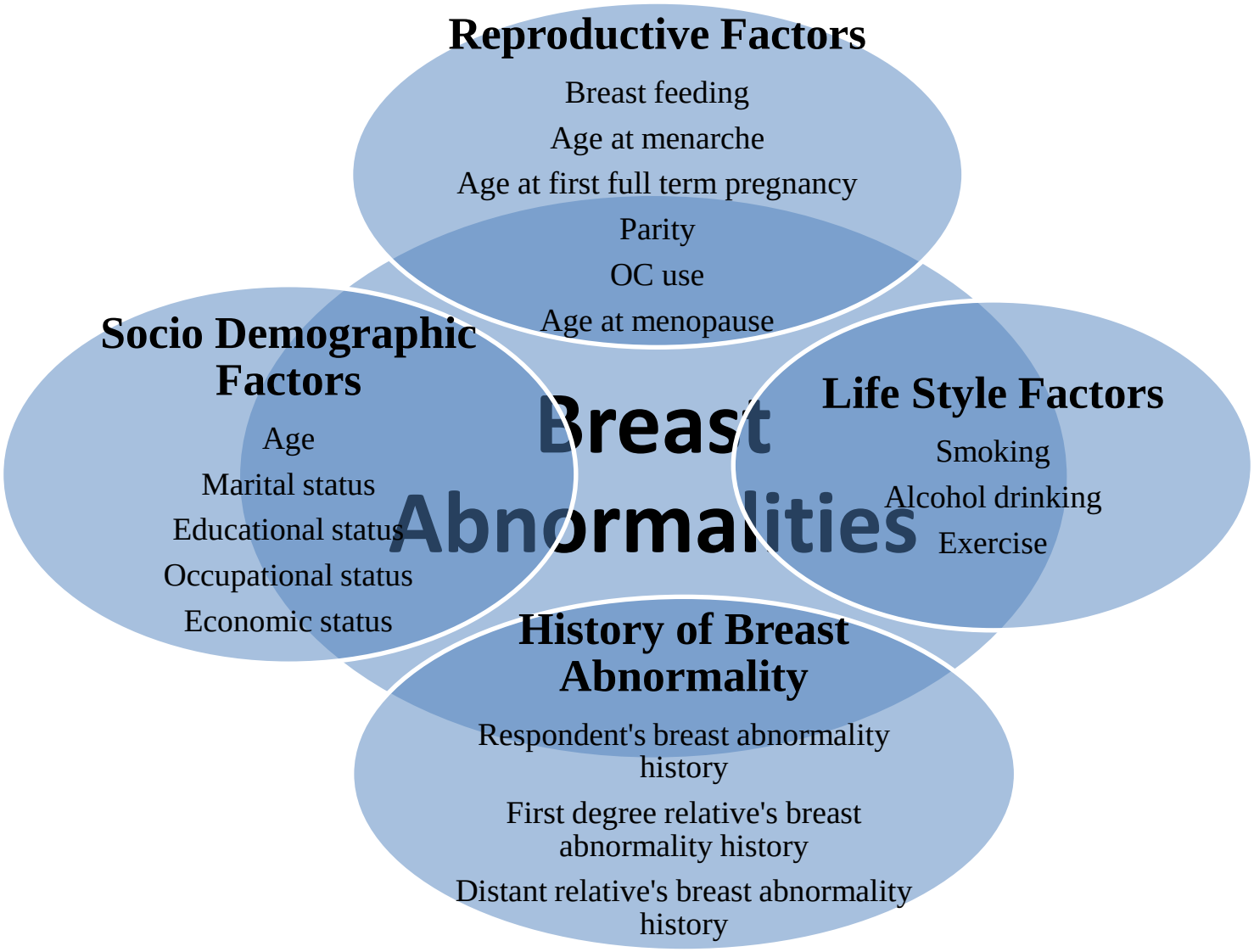

Figure 1:- Conceptual frame work on associated factors of breast abnormality among women health center clients, Addis Ababa, Ethiopia, 2018

The conceptual framework was developed by reviewing different literatures (5, 6, 25, 26, 29)

3 Objectives

3.1 General objectives

To assess the magnitude and associated factors of breast abnormalities among women in selected health centers in Addis Ababa city Administration in 2018.

3.2 Specific objectives

1. To determine the magnitude of breast abnormalities among women attending health centers in Addis Ababa in the year 2018.
2. To identify associated factors of breast abnormalities among women attending health center in Addis Ababa in 2018.

4 Methods

4.1 Study Design

A facility based cross sectional study was conducted among women at selected health centers in Addis Ababa city to determine the magnitude and determinants of breast abnormalities.

4.2 Study Area

The study was conducted in Addis Ababa. Addis Ababa is the Capital City and the seat of the Federal Government and Parliaments. The City has gained international status by being the seat of the African Union, several international organizations and numerous Embassies. Addis Ababa is located in the Central part of Ethiopia. All sides of the capital city is bordered by Oromia Regional State, and covers an area of 530 sq. km. The capital city, Addis Ababa is divided into ten sub cities and into 116 woredas. The spatial organization shows that Lideta, Kirkos, Arada and Addis Ketema represent the central areas, whereas Akaki Kaliti, Nefas Silk Lafto, Kolfe Keraniyo, Gulele, Yeka and Bole correspond partly to the expansion areas at their peripheries(37). Addis Ababa City Administration has an estimated population of 3,559,997 at2016 G.C from this, males account 1,628,140 and females account 1,931,857 of the population(38). Addis Ababa city has 40 Hospital, 97 Health Center and 359 clinics.

4.3 Study period

The study was conducted from April 1/2018 to April 31/2018.

4.4 Source population

The source population comprised of all women above age of 18 attending health center in Addis Ababa.

4.5 Study population

Study population comprised of all women above age of 18 attending the selected public health centers in Addis Ababa at the time of the study.

4.5.1 Inclusion and exclusion criteria

Inclusion criteria:

- Women above age of 18 attending the selected public health centers in Addis Ababa at the time of the study were included in the study.

Exclusion criteria:

- Women who have breast cancer

4.6 Sample size determination

Before sample size determination literature were reviewed to get information on the prevalence of breast abnormalities and its' associated factors from similar studies. There were no studies done on breast abnormality therefore 50% proportions were used to calculate sample size for magnitude. Because there was no data on the proportions of associated factors of breast abnormalities the sample size formula for single population proportion of the first objective was used for both objectives and 3% margin of error was used.

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

$$n = \frac{(1.96)^2 * 0.5(0.5)}{(0.03)^2} = 1066$$

Considering 10% non-response rate, the total **sample size was =1173**

Where:

$P_=$ the prevalence of Breast abnormalities in women 50%

$d_=$ margin of error considered to be 3%

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

$n_=$ the required sample size

4.7 Sampling procedure

The sample is distributed proportionally for each sub city according to their population size and Health centers were selected by simple random sampling technique from each sub city based on the proportion. There are a total of 97 health centers in Addis Ababa. Among those, 15(15.5% taken from the total HC) health centers were selected. The sample size in each health center was proportional to population size. The study participants were selected using Systematic Random Sampling Technique.

To calculate the sampling interval (K), the average number of women who visited selected health centers was divided by number of women required in each HC. The third woman to visit the facility was used as starting point and the next participant was determined by the sampling interval. If the selected individual did not fulfill the inclusion criteria, she was replaced by the next client and the interval continued accordingly.

Table 1:-Sampling table of the study population in Addis Ababa, Ethiopia, 2018

No.	Sub city	Sample allocated proportionally per sub city	Health Center Name	No. of women HC clients per day	No. of Sample	No. of women required per day	Sampling interval/ k
1.	Addis Ketema	110	Woreda 10	81	110	7	12
2.	Akaki Kaliti	82	Saris	106	82	6	18
3.	Arada	93	Arada	65	93	6	11
4.	Bole	131	Bole 17	93	60	4	23
5.			Summit	118	71	5	24
6.	Gulele	115	Shiro Meda	62	45	3	21
7.			Shegole	98	70	5	20
8.	Kirkos	96	Kirkos	148	96	6	25
9.	Kolfe Keranio	178	Keranio	106	110	7	15
10.			Lomi meda	58	68	5	12
11.	Lideta	89	Beletshachew	111	89	6	19
12.	Nifas Silk	133	Woreda 11	137	90	6	23
13.			Woreda 5	89	43	3	30
14.	Yeka	146	Yeka	91	54	4	23
15.			Entoto No.2	132	92	6	22
Total sample size		1173			1173		

4.8 Data collection procedure

A semi-structured questionnaire developed after reviewing relevant literatures was used to collect data. The questionnaire was initially prepared by reviewing different literature and then translated to Amharic language, and was translated back to English to check any inconsistency in addition the questionnaires was examined by senior experts to the area of study for content validity.

Six data collectors and one supervisor were used for data collection; all of them were BSC health professionals that have experience conducting breast examinations. Data collectors and supervisor training was given by the investigator to make them familiar with the data collection tool. The questionnaire contains three parts, comprising of socio demographic, determinants of breast mass and tool for determining breast abnormality presence.

Data was collected using interview method and presence or absence of breast abnormalities was determined by self-reporting of participants. Data collectors explained procedures of breast self-examination and participants performed breast self-examination at the spot. Separate room and place for interview was arranged to keep the privacy of the women. Completeness of questionnaire was checked and final reviewed questionnaire was returned to the principal investigator.

4.9 Study Variables

4.9.1 Independent Variables

1. Socio-demographic variables

- Age
- Marital status
- Education
- Occupation
- Income

2. Life style

- Smoking

- Alcohol drinking
- Exercise

3. Reproductive factors

- Age at menarche
- Age at menopause
- Number of pregnancies
- Number of live births
- Contraceptive use
- Breast feeding duration

4. History of disease

- Family history of breast abnormalities/cancer
- Own previous history of breast abnormality or other cancer
- Sign and symptoms
- Diagnostic service used
- Result of diagnosis
- Cancer co morbidity
- Time since it started
- Drug use

4.9.2 Dependent Variables

- Breast Abnormality

4.10 Operational definitions

- Breast abnormality: Any form of morbidity on or in the breast.
- First degree relatives: Parents, siblings related both by mother and father or children
- Distant relatives: Half brothers, aunts, uncles, grand parents or children, nephews, nieces, cousins and any other relative linked by blood and not first degree relative.

4.11 Data quality management

The principal investigator who is the study facilitator took the responsibility for the editing/coding and entry of the data to the computer. Computer data cleaning was also done to check for the consistency of data and identify errors that occurred during data collection or entering process. Training was given for both data collectors and supervisors on data collection tool for 2 days by the principal investigator. In the actual data collection process, the principal investigator strictly ensured the data collected fulfilled the expected procedures and keep every question responded properly by the respondent, through spot checking. When data collectors face/encounter problems during interview, the principal investigator actively supported them.

Initially the questionnaire and the informed consent was developed in English language for ease of understanding and then translated into Amharic to ensure consistency of understanding among data collectors and respondents.

4.12 Data Analysis procedures

Data was entered into Epi-info version7.1 software and then cleaned through analysis of range and distribution of study variables and their mutual consistency in SPSS v21. Descriptive statistics was computed for all variables according to their type. Frequency, mean and standard deviation was obtained for continuous variables while the categorical variables were assessed by computing frequency and percentages. Significance was determined using crude and adjusted odds ratios with 95% confidence interval. To assess the association between the different predictor variables with the dependent variable, first bivariate relationships between each independent and outcome variable was analyzed using a binary logistic regression model. Those independent models found to be significant with p-value less than 0.05 was further analyzed using multivariable logistic regression model to control for confounding. All the analyses were performed with SPSS v21 software after being exported from Epi-info version7.1 software.

4.13 Ethical consideration

To maintain the broadly agreed upon norms of ethical research, the following issues were carefully considered:

Initially the proposal was ethically cleared from the School of public health ethical review committee then approval was requested and obtained from the management of Addis Ababa Regional Health Bureau to access the necessary data.

Participation in the research was voluntary, that they have the freedom to withdraw from the study at any time without any consequences. The purpose of the research was clearly communicated to the participants and the stations at which the study was conducted, for what purpose, what outcomes are expected, and who will benefit from the results. Interview was carried out after receiving oral consent from the participants. The process of administrating the questionnaire has ensured anonymity. All information obtained in the process of the research was maintained confidentially. The data was only used for research purposes and final report will be made available to the organization for use. Research participants who reported breast abnormality were linked with health centers.

4.14 Dissemination of results

The thesis will be submitted to AAU College of Health Science, school of public health as partial fulfillment of master's in public health. After the presentation at school of public health, necessary comments will be offered and modification will be made based on the comments. Then, study will be disseminated to Addis Ababa Regional Health Bureau, Addis Ababa University School of public health. Efforts also will be made to present on professional seminars and publish on national and international scientific journals.

5 Result

5.1 Status of Breast Abnormality of study participants

A total of 1102 women were interviewed. Among these respondents 51(4.63%) were found to have at least one type of breast abnormality. When we try to look at the distribution of breast abnormalities with in sub cities Akaki Kality takes the lead with 9(17.6%) cases followed by Yeka and Kolfe Keranio both exhibiting 7(13.7%) cases and the least number of cases were found in bole sub city which is 2(3.9%) (see Table 2).

Table 2:- Distribution of breast abnormality with in sub city of respondents in selected heath centers in Addis Ababa, April 2018

Variables	Frequency	Percent
Distribution of breast abnormality with in Sub city		
Addis Ketema	5	9.8
Akaki Kaliti	9	17.6
Arada	3	5.9
Bole	2	3.9
Gulele	5	9.8
Kirkos	5	9.8
Kolfe Keranio	7	13.7
Lideta	3	5.9
Nifas Silk	5	9.8
Yeka	7	13.7

5.2 Socio economic and demographic Variables of the Study Participants

The mean age of the participants is 31 years with a standard deviation $\pm$10.64. Out of the total respondents822 (74.6%) were Married and only 43(3.9%) were widowed. Regarding educational status of respondents 488(44.3%) were7-10 grades, 178(16.2%) 1-6 grades and 161(14.6%) were higher education graduates. When we look at the Occupational status of respondents 468(42.5%) were house wives and 346(31.4%) were employed (see Table 3).

Table 3:- Distribution of socio economic and socio demographic variables of respondents in selected heath centers in Addis Ababa, April 2018

Variables	Frequency	Percent
Age		
<25	329	29.9
25-34	456	41.4
35-44	192	17.4
≥45	125	11.3
Marital status		
Single	186	16.9
Married	822	74.6
Widowed	43	3.9
Divorced	51	4.6
Educational status		
Illiterate	164	14.9
1-6 grades	178	16.2
7- 10th grade	488	44.3
11-12th grades	111	10.1
Higher education	161	14.6
Occupational status		
Employed	346	31.4
Self employed	194	17.6
House wife	468	42.5
Others	94	8.5
Monthly income		
<1001	226	20.5
1001-4000	741	67.2
4001-7000	107	9.7
>7000	28	2.5

5.3 Personal and family history of breast abnormality and other cancers of participants

Regarding history of breast abnormality in their families 61(5.5%) respondents answered yes for having history in their first degree relatives most of whom 37(60.7%) being their mother and 144(13.1%) said yes for having a distant relative breast abnormality history. Looking at the previous history of breast abnormality of the respondents 27(2.5%) of them claimed of having previous history of breast abnormality. On the other hand for having a history of cancer other than breast cancer 4(0.4%) respondents said yes (See table 4).

Table 4:-Distribution of personal and family history of breast abnormality and other cancers of participants in selected heath centers in Addis Ababa, April 2018

Variables	Frequency	Percent
First degree relative abnormality history		
No	1041	94.5
Yes	61	5.5
First degree Family member with abnormality history		
Mother	37	3.4
Sister	22	2.0
Daughter	2	0.2
Distant relative with abnormality history		
No	956	86.8
Yes	144	13.1
Personal history of breast abnormality		
No	1075	97.5
Yes	27	2.5
Personal history of cancer other than breast		
No	1098	99.6
Yes	4	0.4

5.4 Reproductive history of the study participants

The mean age at first marriage of the respondents was 20 with a standard deviation ±4.56.And regarding age at menstruation the mean was 14 with a standard deviation ±1.31. When we look at age at first pregnancy 376(43%) were25-34 and 118(18.1%) were above the age of 34. Out of the 1102 participants 290(26.3%) of them never gave birth and the other 812(73.4%) gave birth at least once in their life. When we look at status of breast feeding of respondents out of 807 mothers that has children 775(96%) of them has breast fed and 347(44.8%) of the children had been breast fed between 6 and 12 months (see Table 5).

Table 5:- Distribution of reproductive history of respondents in selected heath centers in Addis Ababa, April 2018

Variables	Frequency	Percent
Age at first marriage		
<25	769	82.2
25-34	162	17.3
≥35	5	0.5
Age started menstruating		
<12	24	2.2
12-13	317	28.8
>13	761	69.1
Age at first pregnancy		
<25	287	32.8
25-34	376	43.0
≥35	158	18.1
Number of children born		
0	290	26.3
1-2	499	45.3
>2	313	28.4
Have you ever breast fed your children		
No	32	4.0
Yes	775	96.0
Average duration of Breast feeding		
less than six months	250	32.2
six months to a year	347	44.8
more than a year	178	22.9

Majority of the mothers 674(61.2%) use contraceptives, 208(31%) of the respondents used pills and 4(0.6%) used tubaligation. Out of these contraceptive users 224(33.1%) of them used contraceptives for a year and 187(27.7%) used for 2 to 3 years (see Figure 2&3).

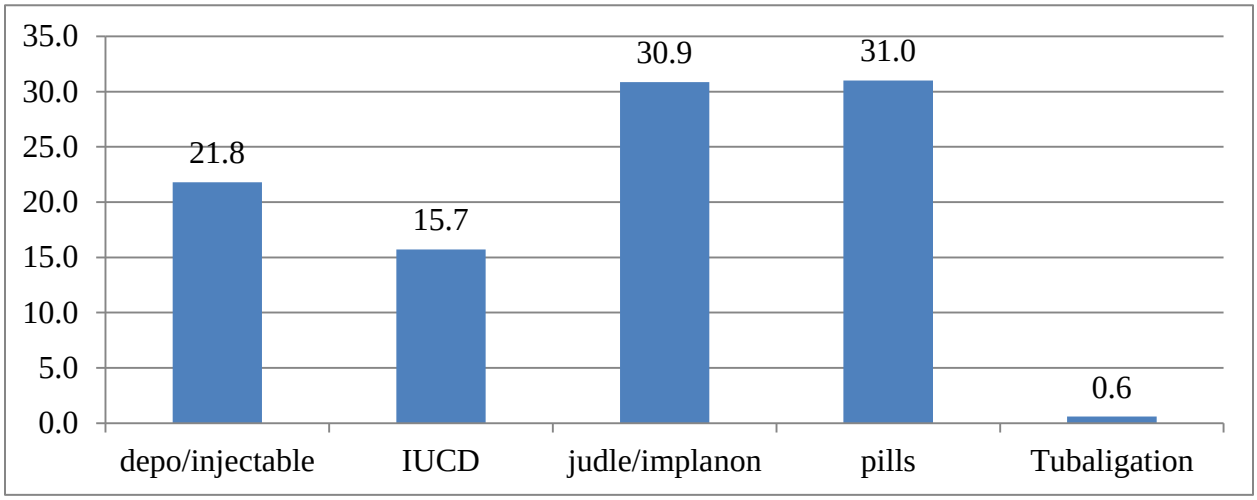

Figure 2:- Distribution of type of contraceptive used by respondents in selected heath centers in Addis Ababa, April 2018

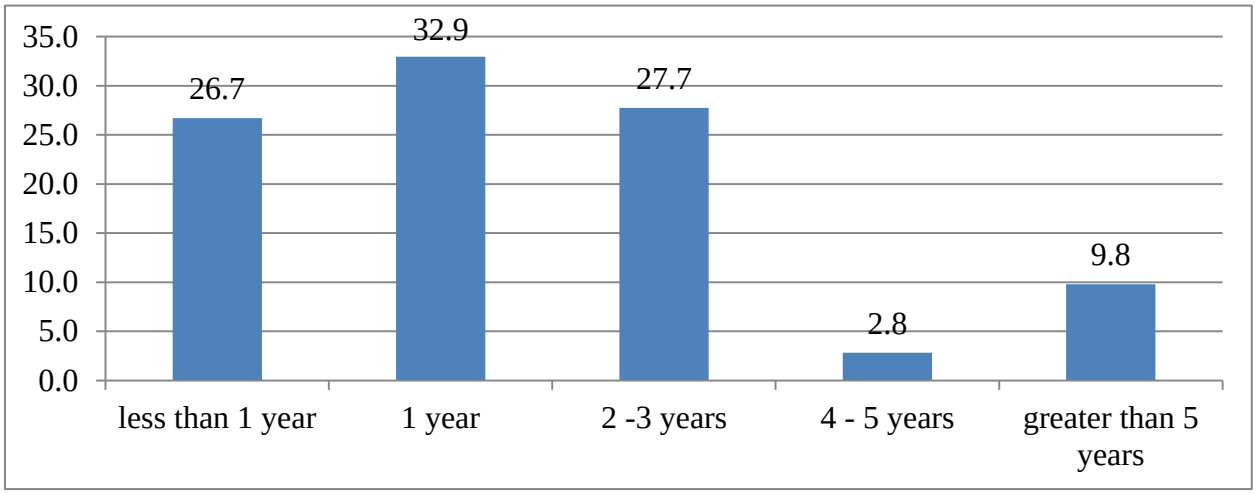

Figure 3:-Distribution of contraceptive use duration of respondents in selected heath centers in Addis Ababa, April 2018

5.5 Life style factors of the study participants

Almost all women 922(83.7%) travel by foot with in a day the minimum time traveled by foot being 5 minutes and the maximum being 880 minutes. A total of 8(0.7%) people have a history of smoking out of the 1102 (see Table 7).

Table 6:-Distribution of life style factors of respondents in selected heath centers in Addis Ababa, April 2018

Variables	Frequency	Percent
Time traveled by foot in minutes		
Don't walk	180	16.3
1-61	702	63.7
>60	220	19.96
History of smoking		
No	1092	99.3
Yes	8	0.7

292(26.5%) of the respondents drink alcohol of which 149(51%) drink weekly and drink daily 7(2.4%) (see Figure 4).

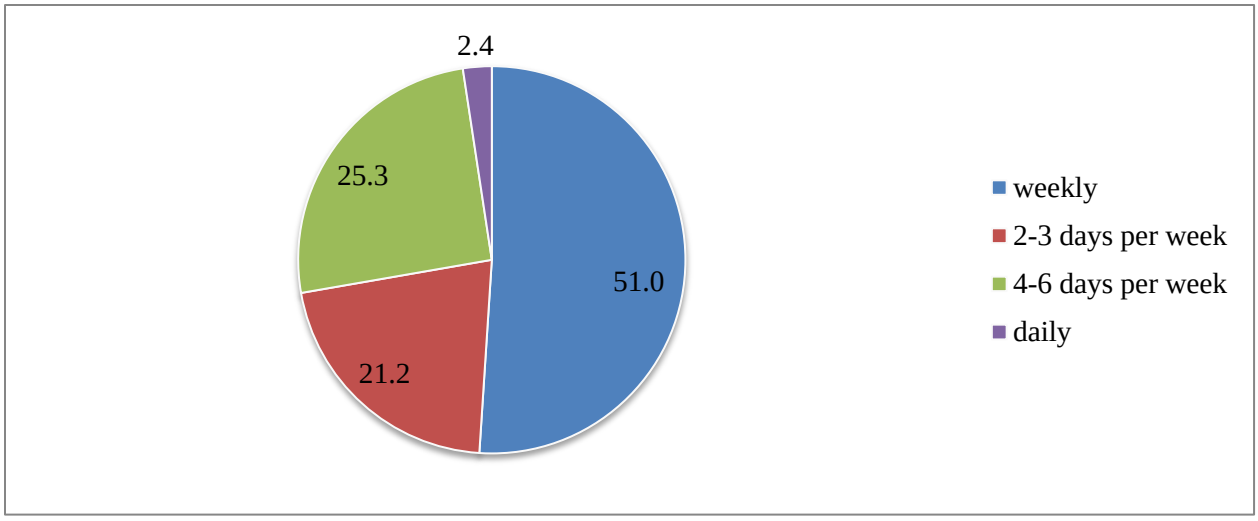

Figure 4:- Distribution of alcohol drinking duration of respondents in selected heath centers in Addis Ababa, April 2018

5.6 Factors associated with status of breast abnormality

5.6.1 Bivariate Logistic regression analyses

Binary logistic regression was done to identify the crude association between all variables and breast abnormality. Based on this analysis age 35- 45yrs and ≥45yrs, age started menstruating, breast feeding exposure, first degree relative history of breast abnormality, Previous History of breast abnormality and contraceptive use showed significant association with breast abnormality at a p-value <0.05 and 95% CI. However marital status, educational status, occupational status, monthly household income, age at first marriage, age at first pregnancy, number of children born, age stopped menstruating, distant relative breast abnormality history, time traveled by foot and alcohol consumption not found to be significantly associated with breast cancer. Table 7, 8 and 9 shows the crude analysis results.

Table 7:-Association of breast abnormality with socio demographic variables of respondents in selected health centers in Addis Ababa, April 2018

Variable	Breast abnormality		COR(95%CI)	P-value
	Yes	No		
Age				
<25	8	321	1	
25-34	16	440	1.459(0.617 - 3.451)	0.039
35-44	17	175	3.898(1.649 – 9.214)	0.002*
≥45	10	115	3.489(1.344 – 9.056)	0.010*
Marital status				
Single	5	181	1	
Married	41	781	1.9(0.741 – 4.877)	0.182
Widowed	1	42	0.862(0.098 - 7.572)	0.893
Divorced	4	47	3.081(0.796 - 11.924)	0.103
Educational status				
Illiterate	8	156	1	
1-6 grades	11	167	1.284(0.503 - 3.277)	0.600
7- 10th grade	21	467	0.877(0.381 - 2.019)	0.758
11-12th grades	7	104	1.313(0.462 - 3.729)	0.610
Higher education	4	157	0.497(0.147 - 1.684)	0.261
Occupational status				
Employed	16	330	1	
Self employed	7	187	0.772(0.321 - 1.911)	0.576
House wife	22	446	1.017(0.526 - 1.967)	0.959
Others	6	88	1.406(0.535 - 3.700)	0.490
Monthly income				
<1001	12	214	1	
1001-4000	34	707	0.858(0.436 - 1.685)	0.656
4001-7000	4	103	0.693(0.218 - 2.200)	0.533
>7000	1	27	0.660(0.083 - 5.281)	0.696

Table 8:- Association of breast abnormality with personal and family history of breast abnormality, other cancer history and life style factors of respondents in selected health centers in Addis Ababa, April 2018

Variable	Breast abnormality		COR(95%CI)	P-value
	Yes	No		
First degree relative abnormality history				
No	39	1002	1	
Yes	12	49	6.292(3.101 - 12.769)	0.000*
Distant relative abnormality history				
No	43	913	1	
Yes	8	136	1.249(0.575 - 2.713)	0.574
Previous History of breast abnormality				
No	41	1034	1	
Yes	10	17	14.835(6.397 - 34.403)	0.000*
Time traveled by foot in minutes				
1-60	42	840	1	
>60	9	211	0.853(0.409 - 1.780)	0.672
History of drinking				
No	40	770	1	
Yes	11	281	0.754(0.381 - 1.489)	0.416

Table 9:- Association of breast abnormality with reproductive health related variables of respondents in selected health centers in Addis Ababa, April 2018

Variable	Breast abnormality		COR(95%CI)	P-value
	Yes	No		
Age at first marriage				
<25	40	729	1	
25-34	6	156	0.701(0.292 - 1.682)	0.426
≥35	0	5	0.000	0.999
Age started menstruating				
<12	7	17	1	
12-13	17	300	0.138(0.050 - 0.377)	0.000*
>13	27	734	0.089(0.034 - 0.233)	0.000*
Age at first pregnancy				
<25	30	639	1	
25-34	8	185	0.921(0.415 - 2.044)	0.840
≥35	0	13	0.000	0.999
Number of children born				
0	20	270	1	
1-2	20	479	0.564(0.298 - 1.066)	0.078
>2	11	302	0.492(0.231 - 1.045)	0.065
Time stopped menstruating				
<45	0	2	1	
45-50	1	55	29372271.437	1.000
>50	2	23	140476080.788	0.999
Have you ever breast fed your children				
No	6	26	1	
Yes	25	750	0.144(0.055 - 0.382)	0.000*
Contraceptive use				
No	28	400	1	
Yes	23	651	0.505(0.287 - 0.888)	0.018*

5.6.2 Multivariable Logistic regression analyses

The variables that were significantly associated with breast abnormality in a bivariate logistic regression were run with multivariable logistic regression model to determine independent variables that are associated with breast abnormality. Out of those fitted with multivariable logistic regression model the variables mentioned below showed significant association at a p-value <0.05 and 95% CI.

If women aged more than 44 years, then they are 5.41 times more likely to develop breast abnormality compared to women aged less than 25 years.[AOR = 5.409(1.196-24.460)]

The odds of women who had first degree relative with breast abnormality to have breast abnormality is 9.44 times higher than the odds of women who doesn't had first degree relative with breast abnormality [AOR = 9.435(3.123 - 28.508)]. Similarly the odds of women who had previous history of breast abnormality is 10.99 times greater than those who doesn't. [AOR = 10.991(3.051 - 39.599)]

According to the analysis age at menstruation is significantly associated with breast abnormality for both ages 12 – 13yrs and > 13yrs [AOR = 0.120(0.023 -0.622), 0.128(0.028 - 0.591)] respectively.

Women who breast fed their children are 90% less likely to develop breast abnormality than women who did not breast feed. [AOR=0.103(0.031 - 0.343)]

Table 10:- Multivariable Logistic Regression Analyses of selected variables with breast abnormality in selected health centers in Addis Ababa, April 2018

Variable	Breast abnormality		COR(95%CI)	AOR(95%CI)	P-value
	Yes	No			
Age					
<25	8	321	1	1	
25-34	16	440	1.459(0.617 - 3.451)	1.725(0.420-7.081)	0.449
35-44	17	175	3.898(1.649 – 9.214)	2.189(0.515-9.305)	0.289
≥45	10	115	3.489(1.344 – 9.056)	5.409(1.196-24.460)	0.028*
First degree relative abnormality history					
No	39	1002	1		
Yes	12	49	6.292(3.101 - 12.769)	9.435(3.123 - 28.508)	0.000*
Previous History of breast abnormality					
No	41	1034	1		
Yes	10	17	14.84(6.397 - 34.403)	10.991(3.051 - 39.599)	0.000*
Age started menstruating					
<12	7	17	1	1	
12-13	17	300	0.138(0.050 - 0.377)	0.120(0.023 -0.622)	0.012*
>13	27	734	0.089(0.034 - 0.233)	0.128(0.028 - 0.591)	0.008*
Have you ever breast fed your children					
No	6	26	1	1	
Yes	25	750	0.144(0.055 - 0.382)	0.103(0.031 - 0.343)	0.000*
Contraceptive use					
No	28	400	1		
Yes	23	651	0.505(0.287 - 0.888)	1.592(0.669 - 3.788)	0.294

* Significant, COR –Crude Odds Ratio; AOR – Adjusted Odds Ratio; CI – 95% Confidence interval

6 Discussion

This study assessed the magnitude and associated factors of breast abnormality among women for the sole purpose of quantifying the problem to help lay grounds work for initiating and strengthening early detection and treatment activities.

The magnitude of breast abnormality in this study is 4.6% which is relatively close to a study done in Rwanda and Sierra Leone on breast mass that shows a percentage of 4 %(39). The relative difference might be because the study done in Rwanda and Sierra Leone only includes breast masses while this study includes all form of abnormalities.

Age greater than 44 years showed significant association with breast abnormality, it might be possible to compare this finding with Carcinoma of the breast which is extremely rare below the age of 20 years but, thereafter, the incidence steadily rises so that by the age of 90 years nearly 20% of women are affected. Also a study done here in Addis Ababa at Black Lion Specialized Hospital supports this finding. This might complement the result of this study(3, 22).

Family and personal history of breast abnormality was one of the variables analyzed for association and the multivariate analysis revealed that The odds of women who had first degree relative with breast abnormality to have breast abnormality is 9.44 times higher than the odds of women who doesn't had first degree relative with breast abnormality [AOR = 9.435(3.123 - 28.508)] this might be similar with other related Studies done on breast cancer A meta-analysis done on women between age 40 and 49 found out that there is a 2 fold increase of breast cancer risk due to first degree family history and a 5.7 times increase in risk was observed in turkey women with first degree family history and regarding personal history of breast abnormality the odds of women who had previous history of breast abnormality is 10.99 times greater than those who doesn't [AOR = 10.991(3.051 - 39.599)] a document by American cancer society might supports this claim , Compared to women who have never been diagnosed with breast cancer, women with a history of breast cancer are about 1.5 times more likely to develop a new breast cancer. The risk is higher if the diagnosis was at a younger age. Women diagnosed with early onset breast cancer (age <40) have almost a 4.5-fold increased risk of subsequent breast cancer. This increase in risk may be due to genetic factors (known and unknown), shared lifestyle factors

or other family traits. Families with a strong family history of breast cancer often carry gene mutations (12, 35, 36, 40).

According to this study late age at menarche has a protective effect on breast abnormality even though there are no studies done specifically on the association of the two variables Several studies done on breast cancer in many countries suggest that starting menstruation early in life has increased risk. This is believed to be due to increased exposure to sexual hormones such as estrogen (24, 41).

The other variable found to be associated with breast abnormality is breast feeding. The study revealed that Women who breast fed their children are 90% less likely to develop breast abnormality than women who did not breast feed; this result might be consistent with a review on breast cancer. Many researchers suggest that the possible mechanisms by which breastfeeding protects against breast cancer include: Reduced systemic estrogen and progesterone levels during lactation, increased prolactin due to breastfeeding, excretion of estrogens and carcinogens out of the breast ducts, terminal differentiation of breast epithelial cells caused by breastfeeding and delay in return of ovulation, which decreases estrogen and progesterone levels(12, 42).

7 Strength and Limitation

7.1 Strength of the study

Since no studies were conducted in this area at national and regional level, it provides information for those interested.

Adequate sample size by maximizing the margin of error was taken by using appropriate sampling techniques.

7.2 Limitation of the study

The outcome of the dependent variable was based on self- reported information which may be subjected to bias but in order to minimize this bias respondents were required to do self-examination at the spot before declaring their current abnormality status.

Recall bias remained a challenge particularly when remembering the past events like age at menarche and age at first pregnancy which might have influenced the outcome of these study variables.

Since there has not been any study conducted in Ethiopia regarding the magnitude of the known risk factors of breast abnormality it was so difficult to get literatures to compare the result with.

8 Conclusion

The result of these study shows that the magnitude of breast abnormality among women above the age of 18 in Addis Ababa city is 51(4.63%). Breast abnormality were found to be significantly associated with age above 44, first degree relative breast abnormality history, previous history of breast abnormality age at menarche and exposure to breast feeding, but there was no significant association found with marital status, education status, occupational status, monthly income, age at first marriage, age at first pregnancy, number of children born, age at menopause, distant relative history of breast abnormality, time traveled by foot, alcohol drinking and contraceptive use.

9 Recommendation

Magnitude of breast abnormality is high according to this study so the government should strengthen the plan to provide mass breast screening to all women who visit health centers in order to detect and treat breast diseases early were it can be treated and lead to good treatment out comes.

The Ministry of Health should promote Breast Self-Examination at all levels from home to home through health extension program at health facilities and wide range of air time to provide comprehensive information about Breast Self-Examination through different Medias like television, radio and magazines.

The Ministry of Health ought to train health workers to promote health education especially home to home by health extension workers enclosing breast abnormality to increase the women's awareness about breast cancer and the associated risk factors because some of the risk factors are potentially modifiable like breast feeding.

Finally, further research should be conducted to cover an expanse population by using clinical examination to determine the magnitude of breast abnormality of Addis Ababa and Ethiopia as a whole.

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Annex I: English Questionnaire

Informed consent:

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

The purpose of this study is to assess Magnitude and associated factors of Breast Abnormalities among women in Selected Health Centers in Addis Ababa City.

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

The information you provide is confidential and it will be used only for study purpose and it will not be disclosed to anyone.

Are you willing to participate in this study? 1. Yes 2. No

Thank you

Questionnaire # _____

Date of interview _____

Part I: Questions related to socio-demographic information:

1. Address: - Sub city _____ Woreda: _____ Kebele: _____

2. Age (in year) _____

3. Marital status;

    1. Single
    2. Married
    3. Widowed
    4. Divorced
    5. Other /specify_____

4. Education;

    1. Illiterate
    2. 1-6 grades
    3. 7- 10th grade
    4.11-12th grades
    5. Higher education

5. Occupation;

    1. Government employee
    2. Private organization employee
    3. Trader
    4. House wife
    5. Daly laborer
    6. Worker in Hotel
    7. Others (specify) ____

6. Monthly income (in Ethiopian birr) _____

Part II: Risk factors for breast mass

7. How old have you been when you first menstruated?

8. How old have you been when you married the first time? _____

9. How old have been during your first full term pregnancy? _____

10. How many children did you give birth to? _____

11. How many times have you been pregnant? _____

12. How many of your born children are alive? _____

13. Have you breastfed your children? Yes. □. No. □

14. If the answer to question 13 is yes, how long did you breastfeed your children? (In years)

Child 1: no □ < ½ □ ½ □ 1 □ 2 □ ≥3 □

Child 2: no □ < ½ □ ½ □ 1 □ 2 □≥3 □

Child 3: no □ < ½ □ ½ □ 1 □ 2 □≥3 □

Child 4: no □ < ½ □ ½ □ 1 □ 2 □≥3 □

Child 5: no □ < ½ □ ½ □ 1 □ 2 □≥3 □

Child 6: no □ < ½ □ ½ □ 1 □ 2 □≥3 □

15. How old have you been when you stopped menstruated?

16. Family breast abnormalities/cancer history

1. Have any of your first degree relatives (mother, sister, daughter, father, brother, son) had a history of breast abnormalities/cancer? Yes. □. No. □

2. Ifthe answer to question for question no.1 is yes, which relative _____

3. Have any of your distant relatives had a history of breast mass? Yes. □. No. □

17. Have you ever smoked? Yes. □. No. □

18. Ifthe answer to question 17 is yes, for how long? _____

19. If the answer to question17 is yes, how much per day? _____

20. How long in minutes do you travel by foot? _____

21. Do you do regular exercise? Yes. □. No. □

22. If the answer to question 21 is yes, how frequently?

1. Weekly
2. 2-3 day per wk
3. 4-6 day's per wk
4. Daily

23. Do you drink alcohol? Yes. □. No. □

24. If the answer to question 23 is yes, how frequently?

1. Weekly
2. 2-3 day per wk
3. 4-6 day's per wk
4. Daily

25. If the answer to question 23 is yes, which kind? _____

26. Do you use contraceptives? Yes. □. No. □

27. If the answer to question 26is yes, for how long have you used contraceptive?

1. < ½ yr
2. 1 yr
3. 2-3 yrs
4. 4-5 yrs
5. >5yrs

28. If the answer to question26 is yes, what types of contraceptive? _____

29. Have you been diagnosed with breast abnormality/cancer that you took treatment and recovered before? Yes. □. No. □

30. If the answer for question no.29 is yes

1. When were you diagnosed? _____
2. What type/s of diagnosis services were you provided? _____
3. What type/s of treatment were you given? _____

31. Did you ever have any other form of cancer before? Yes. □. No. □

32. If the answer for question no.31 is yes

1. What type? _____
2. What form of treatment did you take? _____

Tool for collecting breast abnormality status

Breast self-examination procedures

1. Start by standing naked above you waist in front of a mirror straight, with your shoulders up and your hands on your thigh and look for this changes; change in size, shape and color of the breast, swelling, wrinkling of the skin, change of position of the nipple or inverted nipple, redness, rash, pain and ulceration of the breast.
2. Next put your hands up and look for the same changes as mentioned in instruction number one.
3. While still looking in the mirror observe for discharge coming from the nipples.
4. After you performed the three procedures mentioned above lie down on your back and perform the following procedures.
    a. Palpate you right breast with your left hand and your left breast with you right hand.
    b. When palpating use the center of your three middle fingers and start palpating from your armpit to the middle of your ribs and from your clavicle to the starting point of your abdomen.
    c. While palpating use light pressure to check the upper tissue, medium pressure to cheek the middle tissue and firm pressure to cheek the bottom tissue.
    d. Look for these changes while palpating; discharge when you put pressure on your breast, tenderness of the breast more than usual, difference tone of breast mass, presence of mass in your breasts.
5. Do the procedures you performed on instruction 4 while standing or sitting and look for the same changes.

Tool to be filled after performing breast self-examination

Instruction for the interviewers: After the respondents performed breast self-examination ask if the following changes on the breasts are present or absent, use "write" if the changes are present and "x" if the changes are absent.

- Change in size of the breast _____
- Change in shape of the breast _____
- Change in the color of the breast _____
- Swelling _____
- Dimpling _____
- Wrinkling of the skin _____
- Change of nipple position or inverted nipple _____
- Redness _____
- Rash _____
- Pain _____
- Ulceration _____
- Discharge from the nipple _____
- Discharge from the nipple when you put pressure on the breast _____
- Any condition of the breast that is different from the natural _____

Annex III: Informed consent:

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

The purpose of this study is to assess Magnitude and associated factors of Breast Abnormalities among women in Selected Health Centers in Addis Ababa City.

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

The information you provide is confidential and it will be used only for study purpose and it will not be disclosed to anyone.

Are you willing to participate in this study? 1. Yes 2. No

Thank you

Annex IV: Amharic questionnaire

ጥያቄዎች

የተጠያቂቁጥር _____

ቀን: __ __/__ /2010

የምርምር /ጥናት ማብራሪያ እና የስምምነት መግለጫ ቅፅ

ጤና ይስጥልኝ

ስሜ_____**ይባላል።እዚህ የመጣሁት የሁለተኛ ዲግሪ የትምህርት መሰናዶ ለማጠናቀቅ የመመረቂያ ጥናት በተመለከተ በአዲስ አበባ ዩኒቨርሲቲ የጤና ሳይንስ ኮላጅ የሕብረተሰብ ጤና ት/ቤት በሚሰጠው የህብረተሰብ ጤና የሁለተኛ ዲግሪ ጥናት ላይ መረጃ ለመሰብሰብ ነዉ።**

የጥናቱ ዋና ዓላማ ማንኛዉንም አይነት የጡት ህመም እና ተያያዥ ጉዳዮችን በሴቶች ላይ መለየት ነዉ። የምንጠይቆ ጥያቄዎች ከ20-30 ደቂቃ ይፈጃል።በዚህ ጥናት ላይ በመሳተፍዎ ጥያቄዎቹን ለመመለስ ከሚጠይቀዉ የተወሰኑ ደቂቃዎች በስተቀር የሚደርስብዎት ምንም ጉዳት የለም። አንዳንድ ጥያቄዎች ግላዊ ቢመስሉም ለጥናቱ አስፈሊጊ ናቸዉ።በተጨማሪ በዚህ ጥናት ስለተሳተፉ የሚያገኙት ክፍያ የለም ምንም እንኳን ከጥናቱ ዉጤት እንደ ዜጋ ሊአገኙት የሚችሉት ጥቅም ሊኖር ቢችልም። በዚህ ጥናት መጠይቅ ተሳታፊ የሚሆኑት በፍቃደኝነት ነው። ያለመሳተፍ ወይም በመሀል የማቆም መብት አሎት ያለቅጣት።ቢሆንም ግን የእርሶ ትክክለኛ መረጃ ለዚህ ጥናት ጠቃሚ ነዉ። እንዲሁም "የሴቶችን ጤና ለማሻሻል በሚደረገዉ እንቅስቃሴ ላይ ትልቅ አስተዋፅኦ አለዉ።

የሚሰጡን መረጃ ሚስጥራዊነቱ የተጠበቀ እና ለጥናታዊ ተግባር ብቻ የሚዉል መረጃዎም ለማንም የማይገለጽ ይሆናል።

በጥናቱ ለመሳተፍ ተስማምተል? 1) **ተስማምቻለሁ** 2) **አልተስማማሁም**

አመሰግናለሁ!

ክፍል I: የአኗኗር ሁኔታ የሚመለከቱ ጥያቄዎች:

1. አድራሻ፡- ክፍለ-ከተማ _____ ወረዳ: _____ ቀበሌ: _____

2. እድሜ (በዓመት); _____

3. የትዳር ሁኔታ;

    1. ያላገባ

    2. ያገባ

    3. ባል የሞተባት

    4. የተፋታች

    5. ሌለ /ይገለፅ _____

4. የትምህርት ደረጃ;

    1. ያልተማሩ

    2. ከ1-6ኛ ክፍል

    3. ከ7-10ኛ ክፍል

    4.ከ11-12ኛ ክፍል

    5. ከፍተኛ ትምህርት

5. ሥራ;

    1. የመንግስት ሰራተኛ

    2. የግል መስሪያ ቤት ሰራተኛ

    3. ነጋዴ

    4. የቤት እመቤት

    5. የቀን ሰራተኛ

6. የቡና ቤት ሰራተኛ

7. ሌላ (ይግለፁ) _____

6. የወር ገቢያችሁ ስንት ነው (በኢትዮጲያ ብር) _____

ክፍል II: ከጡት ዉስጥ እባጭ ጋር ግንኙነት ያላቸዉ ሁኔታዎች

7. መጀመሪያ ያገባሽዉ በስንት አመትሽ ነው? _____

8. መጀመሪያ የወር አበባ ስታዪ ስንት አመትሽ ነበር? _____

9. ለመጀመሪያ ጊዜ አርግዘሽ የነበረው በስንት አመትሽ ነበር? _____

10. ስንት ልጆች ወለድሽ?_____

11. ስንት ጊዜ አረገዝሽ?_____

12. ከወለድሻቸው ልጆች ስንቶቹ በህይወት አሉ?_____

13. ልጆችሽን ጡት አጥብተሻል? አጥብቻለዉ ☐ አላጠባዉም ☐

14. ለጥያቄ 13 መልሶ አዎን ከሆነ ለምን ያህል ጊዜ አጠባሽ? (በዓመት)

የመጀመሪያው ልጅ: አላጠባውም ☐ < ½ ☐ ½ ☐ 1 ☐ 2 ☐ 3 ☐

ሁለተኛ ልጅ: አላጠባውም ☐ < ½ ☐ ½ ☐ 1 ☐ 2 ☐≥3 ☐

ሶስተኛ ልጅ: አላጠባውም ☐ < ½ ☐ ½ ☐ 1 ☐ 2 ☐≥3 ☐

አረተኛ ልጅ: አላጠባውም ☐ < ½ ☐ ½ ☐ 1 ☐ 2 ☐≥3 ☐

አምስተኛ ልጅ፡ አላጠባውም ☐ < ½ ☐ ½ ☐ 1 ☐ 2 ☐ ≥3 ☐

ስድስተኛ ልጅ፡ አላጠባውም ☐ < ½ ☐ ½ ☐ 1 ☐ 2 ☐ ≥3 ☐

15. ለመጨረሻ ጊዜ የወር አበባ ስታዪ ስንት አመትሽ ነበር?

16. የቤተሰብ የጡት ህመም/ነቀርሳ ታሪክ

1. ከቅርብ ቤተሰቦ ማለትም እናት፣ እህት፣ ልጅ፣ አባት፣ ወንድም፣ልጅ መካከል የጡት ህመም/ነቀርሳ ይዞት የሚያውቅ ሰው አለ? አለ ☐ የለም ☐

2. ለጥያቄ 1 መልሶ አለ ከሆነ የትኛዉ የቤተሰብ አባል? _____

3. ከሩቅ ቤተሰቦ መካከል የጡት እባጭ/ነቀርሳ ይዞት የሚያውቅ ሰው አለ?

አለ ☐ የለም ☐

17. ሲጋራ አጢሰው ያውቃሉ? አውቃለሁ ☐ አላውቅም ☐

18. ለጥያቄ 17 መልሶ አውቃለሁ ከሆነ ለምን ያህል ጊዜ? _____

19. ለጥያቄ 17 መልሶ አውቃለሁ ከሆነ፣ በቀን ስንት? _____

20. በቀን ውስጥ ለምን ያህል ጊዜ በእግሮ ይጉዋዛሉ? _____

21. የአካል ብቃት እንቅስቃሴ ያደርጋሉ? አደርጋለሁ. ☐ አላደርግም ☐

22. ለጥያቄ 19 መልሶ አደርጋለሁ ከሆነ፣ ለምን ያህል ጊዜ?

1. በሳምንት አንዴ

2. ከ2-3 ቀን በሳምንት

3. ከ4-6 ቀን በሳምንት

4. በየቀኑ

23. አልኮል ጠጥተው ያውቃሉ? አውቃለሁ ☐ አላውቅም ☐

24. ለጥያቄ 23 መልሶ አዎን ከሆነ፣ ለምን ያህል ጊዜ?

1. በሳምንትአንዴ _____

2. ከ2-3 ቀን በሳምንት

3. ከ4-6 ቀን በሳምንት

4. በየቀኑ

25. ለጥያቄ 23 መልሶ አዎን ከሆነ፣ የትኛው አልኮል? _____

26. የቤተሰብ እቅድ ይጠቀማሉ? እጠቀማለሁ ☐ አልጠቀምም ☐

27. ለጥያቄ 26 መልሶ አዎን ከሆነ፣ ለምን ያህል ጊዜ?

1. ከግማሽ ዓመት በታች ተጠቀምኩ
2. ለአንድ ዓመት ተጠቀምኩ
3. ከ2-3 ዓመት ተጠቀምኩ
4. ከ4-5 ዓመት ተጠቀምኩ
5. ከ5 ዓመት በላይ ተጠቀምኩ

28. ምን ዓይነት የቤተሰብ እቅድተጠቀሙ? _____

29. ከዚህ በፊት በጡት ህመም በህክምና ድነዉ ያዉቃሉ? አውቃለዉ ☐ አላውቅም ☐

30. ለጥያቄ 29 መልሶ አዉቃለዉ ከሆነ

1. መች ነበር የተመረመሩት? _____
2. ምን አይነት ምርመራ/ዎች ነበር የተደረገሎት? _____
3. ምን አይነት የህክምና አይነቶች ነበር የተደረገሎት? _____

31. ከዚህ በፊት ከጡት ህመም/ነቀርሳ በሽታ ዉጪ ሌላ የነቀርሳ አይነት ኖሮቦት ያዉቃል? ያውቃል ☐ አየውቅም ☐

32. ለጥያቄ 31 መልሶ ያዉቃል ከሆነ

1. ምን ነበር የተገኘቦት? _____
2. ምን አይነት ህክምና አገኙ? _____

የጡት ህመም ሁኔታ መለያ መሳሪያ

<u>በራስ የሚደረግ የጡት ምርመራ ቅደም ተከተል</u>

1. መጀመሪያ ራቁቶን በመሆን ትከሻዎን ቀጥና እጆትን ታፋዎ ላይ በማድረግ ጡቶን በመስታወት ይመልከቱ(እነኚህን ለዉጦች ይመልከቱ፡- የጡቶ መጠን፣ቅርፅ እና መልክ እንደ ተለመደዉ አለመሆን፣ እብጠት፣ መሰርጎድ፣ የቆዳ መጨማደድ/መታጠፍ፣የጡት ጫፍ ቦታዉን መቀየር/ወደ ዉስጥ መግባት፣መቅላት፣ ሽፍማለት፣ ማመም፣ መቁሰል)።
2. አሁን ደግሞ እጆትን ወደ ላይ በመዘርጋት 1 ቁጥር ላይ የተጠቀሱት ለዉጦች መኖራቸዉን ወይም አለመኖራቸዉን ይመልከቱ።
3. መስታዎቱ ላይ እንዳሉ ከጡቶ ጫፍ እሚወጣ ፈሳሽ መኖሩን ይመልከቱ(ለአጥቢ እናቶች ከወተት ዉጪ)።
4. ከዚህ በመቀጠል በጀርባዎ በመተኛት በግራ እጆ ቀኝ ጡቶን በቀኝ እጆ ደግሞ ግራ ጡቶን ይዳብሱ ሂደቱም ይህን ይመስላል፡- የመጀመሪያ ሶስት ጣቶች የዉስጥ ክፍል በመጠቀም ጡቶትን ከብብት እስከ ሁለቱ ጡቶች መካፈያ እና ከክላቪክል እስከ ሆድ ጫፍ ድረስ ትንሽ፣መካከለኛ እና ጠንከርያ ለሃይል በመጠቀም ወደ ላይ እና ወደታች በማድረግ ሁሉንም ጡት አካል ማዳረስ(በዚህ ሰዓት እነዚህን ለዉጦች ይመልከቱ፡- ጡቶን ሲጫኑት እሚወጣ ፈሳሽ፣ ጡቶ ከወትሮዉ መጠንከሩን፣ በሁሉም የጡት ክፍሎች ተመሳሳይይዘት አለመኖሩ፣ በጡት ዉስጥ ጠጣር ነገር መኖር)።
5. ተራ ቁጥር 4 ላይ ያደረጉትን ነገር በሙሉ ቆመዉ ወይም ተቀምጠዉ ይድገሙት ተመሳሳይ ለዉጦችንም ይከታተሉ።

<u>በራስ ላይ ከሚደረግ የጡት ምርመራ በህዋላ የሚሞላ መጠይቅ</u>

ትዕዛዝ ለጠያቂዎች፤- ተጠያቂዋ በራስዋ ላይ የጡት ምርመራ ካደረገች በህዋላ ከዚህ በታች የተገለፁት ለዉጦች በጡቷ ላይ መኖራቸዉን/አለመኖራቸዉን አረጋግጠሽ ካሉ የ"እርማት" ከሌሉየ "X" ምልክት ከጎኑ ባለዉ ባዶ ቦታ ላይ አስቀምጥ/ጪ።

- የጡት መጠን እንደ ተለመደዉ አለ መሆን _____
- የጡት ቅርፅ እንደ ተለመደዉ አለ መሆን _____
- የጡት መልክ እንደ ተለመደዉ አለ መሆን _____
- እብጠት _____
- መሰርጎድ _____
- የቆዳ መጨማደድ/መታጠፍ _____
- የጡት ጫፍ ቦታዉን መቀየር/ወደ ዉስጥ መግባት _____
- መቅላት _____
- ሽፍማለት _____
- ማመም _____
- መቁሰል _____
- ከጡት ጫፍ እሚወጣ ፈሳሽ _____
- ጡትን ሲጫኑት እሚወጣ ፈሳሽ _____
- ጡት ከወትሮዉ መጠንከሩን _____
- በሁሉም የጡት ክፍሎች ተመሳሳይ ይዘት አለመኖሩ _____
- በጡት ዉስጥ ጠጣር ነገር መኖር _____
- ማንኛዉም ከትክክለኛዉ የጡት ይዘት ዉጪ የሆነ ነገር _____

Annex VI: Curriculum Vitea

MIHRETEAB GETACHEW DEJENE

Tel: +251- 9-31590546/0912059440

E-Mail:- getachewmihreteab@gmail.com

Personal Details

Sex	Male
Date of Birth	27 Oct, 1989
Nationality	Ethiopian
Marital Status	Single
Current Residence	Addis Ababa

- ✓ **Disease prevention and control unit,** October 11, 2009 till December, 2012G.C. Armed force general Teaching hospital, Addis Ababa, Ethiopia.

Position

- **Health education and promotion Officer**

- ✓ MULU/ MARPs project, January 2013 till February 31, 2014 Fayyaa Integrated Development Organization (FIDO), Bale zone, Oromiya region, Ethiopia.

Position

- **Community mobilization officer**

Educational Background Jimma University (2006-2009)

Qualification: **BSc degree in Health Education and Promotion**

Employment history

- ✓ From March 12, 2013 until April 08, 2015 I have worked at BCC health communication plc.

Position

- **Health learning material development adviser**

✓ Nifas Silk Lafto Subcity, August 21, 2014 until April 8, 2015 woreda 05 health office

Position

- **As Urban Health Extension Program Supervisor**

✓ Nifas silk lafto sub city, April 9, 2015 until now sub city health office

Position

- **As Urban Health Extension and IEC/BCC Case Team Coordinator**

REFERENCE:

Alemayehu Getachew: (Nifas Silk Lafto Health Office health promotion and disease prevention core process owner, Bsc in public health) 0916826572

Biniam Tadesse (Public Health Advisor - JSI – SEUHP, MPH in monitoring and evaluation) 0917957980

Daniel Getachew: (QI Officer - JSI - Nifas Silk Lafto Sub City, MPH in Epidemiology and Biostatistics) 0911025768

Annex VII: Declaration

I, the undersigned declare that this thesis is my original work for in partial fulfillment of the requirement for the degree of Master of General Public Health. I also declare that it has never been presented in this or any other university and that all resources and materials used in the thesis have been duly acknowledged.

Student Name: _____

Signature: _____

Place of submission: _____

Date of submission: _____

This thesis has been submitted with my approval as a college/university advisor.

First Advisor Name: _____

Signature: _____

Date of submission: _____

Second Advisor Name: _____

Signature: _____

Date of submission: _____

This thesis has been submitted with my approval as a college/university Examiner.

Examiner Name: _____

Signature: _____

Date of submission: _____