

**KNOWLEDGE ABOUT BREAST CANCER AND PRACTICE OF
EARLY DETECTION METHODS AMONG WOMEN
EMPLOYED AT ETHIOPIAN REVENUES AND CUSTOMS
AUTHORITY, HEAD OFFICE**



BY- MAHLET GEBREHIWOT

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**A STUDENT RESEARCH PROPOSAL TO BE SUBMITTED TO THE PUBLIC
HEALTH DEPARTMENT, SPHMMC, IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR DREGREE OF DOCTOR OF MEDICINE**

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Abstract

Introduction- One of the most commonly diagnosed cancers worldwide is breast cancer which accounts 1.7 million (11.9%) of the total, and it is increasing particularly in developing countries where the majority of cases are diagnosed in late stages. It is estimated that 45% of the 1.35 million new cases diagnosed each year, and more than 55% of breast cancer related deaths, occur in low- and middle income countries. The fact that breast cancer is one of the most physically accessible cancers to examination makes raising awareness about detection methods a top priority on the list of tools of prevention of deaths from breast cancer. Breast Self-Examination (BSE), Clinical Breast examination (CBE) and Mammography are now considered the mainstays for early detection of breast cancer. Screening for early cancer detection has been credited for part of the recent reduction in breast cancer mortality in developed countries.

Objective- Is to assess overall awareness of women in Ethiopia about breast cancer and detection methods.

Methods and materials- The study will use an institution-based cross-sectional study design to assess the knowledge about breast cancer and practice of early detection methods of female employees of Ethiopian Revenues and customs authority currently working at its head office, Addis Ababa.

List of Abbreviations and Acronyms

BSE	Breast Self-Examination
CBE	Clinical Breast Examination
ACS	American Cancer Society
IARC	International Agency For research On Cancer
TASH	TikurAnbessa Specialized Hospital

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1. INTRODUCTION

Background

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death [1]. According to GLOBOCAN 2012, an estimated 14.1 million new cancer cases and 8.2 million cancer-related deaths occurred in 2012, compared with 12.7 million and 7.6 million, respectively, in 2008. One of the most commonly diagnosed cancers worldwide was breast cancer which accounts 1.7 million (11.9%) of the total [2], and it is increasing particularly in developing countries where the majority of cases are diagnosed in late stages[3]

There is a marked geographical variation in incidence rates, being highest in the developed world and lowest in the developing countries of the third world. However, in recent years, the incidence of breast cancer has shown an alarming increasing trend in developing countries [4]. It is estimated that 45% of the 1.35 million new cases diagnosed each year, and more than 55% of breast cancer related deaths, occur in low- and middle income countries [5]. In Africa, where breast cancer may often present at an earlier age and can progress more aggressively [3], little is known about pathways and triggers for women to take action (e.g., seek medical advice) based on their recognition of symptoms.

The causes of breast cancer are not fully known. However, researchers have identified a number of factors that increase one's chances of getting breast cancer. Risk factors do not cause breast cancer, but can increase the chances of getting breast cancer. Some women have many risk factors, but never get breast cancer. And, some women have few or no risk factors, but do get the disease [6]. Breast cancer risk factors include family history of breast cancer; personal history of breast cancer; early menarche (< 12 years); late menopause (> 55 years); aging; alcohol; late age at first full-term pregnancy (> 30 years); never breastfed a child; recent oral contraceptive use; high fat diet; tobacco smoke; obesity (postmenopausal); recent and long-term use of hormone replacement therapy; high-dose radiation to chest; lack of physical activity [7].

Until research uncovers a way to prevent breast cancer or to cure all women regardless of when their tumor is found, early detection will be looked upon as the best hope for reducing the heavy toll of this disease. Breast Self-Examination (BSE), Clinical Breast examination (CBE) and Mammography are now the mainstays for early detection of breast cancer [8]. Screening for early cancer detection has been credited for part of the recent reduction in breast cancer mortality.

Monthly breast self-examination (BSE) is a common method of identifying lumps and other abnormalities in the breast for any signs of abnormality. BSE in conjunction with screening mammography is currently advocated by many organizations but it is also recommended for younger women starting in their 20s who are not yet being screened by mammography. BSE was first advocated in the 1940s and 1950s, before the advent of screening mammography. Breast surgeons saw many patients whose tumors were too large for surgical removal, and they believed that regular self-examination of the breasts would

result in earlier detection when surgery was still an option. Breast Self-Examination would be the approach for early detection in limited resources countries.

Breast clinical examination by physicians is also widely practiced and advocated for women of all ages. Women in their 20's and 30's should have a CBE as part of a periodic health exam by a health professional preferably every 3 years. Starting at age 40, women should have a CBE by a health professional every year. Screening mammography is promoted as the key to the continued reduction in breast cancer mortality through early detection. A number of organizations, including the National Cancer Institute (NCI), the American Cancer Society (ACS), and the American College of Radiology, currently recommend women at age 40 and older should have a mammogram every year and should continue to do so for as long as they are in good health. [9]

Several randomized controlled studies have been undertaken in four countries to assess the value of screening Mammography. Most of them demonstrated a substantial reduction in rates of death from breast cancer (about 25 to 30 percent) among women screened by mammography, and meta-analysis has confirmed a clear benefit of screening mammography for women over age 50

[10,11].

Statement of the problem

During a time when breast cancer is considered to be one of the most commonly diagnosed cancers among women worldwide with increasing incidence yet, the fact that breast cancer is one of the most physically accessible cancers to examination makes raising awareness about detection methods a top priority on the list of tools of prevention of deaths from breast cancer. Early detection could be course changing especially for women of African race because of the aggressive behavior of breast cancers identified in this group.

In Ethiopia where literacy rate is not that high; poverty, culture and religion play an important role for health seeking behavior. Especially for women in rural areas one can easily assume that knowledge will be poor and practice will be even poorer. Furthermore, there is lack of a uniform information, education and communication about breast cancer. And this makes difficult to state the exact situation about the knowledge of breast cancer risk factors and practice of breast cancer screening methods in Ethiopia.

In countries like ours where health care seeking behavior is said to be poor on top of already limited resources, lacking enough infrastructure or budget to allocate for chronic and non-communicable diseases and regular medical checkups; teaching self-examination methods and what to look out for, although challenging would be one of the best options of creating awareness and would direct our society as to when to seek medical help.

Promotion of early detection of breast cancer has been accredited for the decreasing mortality rates in the developed countries. In our setup, early detection could be more life saving for our patients given that our oncology centers are lacking in finance and resources to address all our patients with advanced disease and palliative care is yet to be standardized.

Significance of the study

Only a handful of researches have been done on this topic in Ethiopia, most of which were done in hospital settings among medical personnel or medical students which showed results of satisfactory knowledge regarding breast cancer and adequate practice of detection methods, especially BSE. This study aims to assess knowledge about breast cancer and practice of screening methods among women from various backgrounds. So as to understand the gaps in knowledge or difficulties with practicing detection methods to identify problem areas that could be targeted in the future to ascertain that the women in our communities have good knowledge and good skills to identify breast cancer early and seek treatment accordingly.

2. Literature review

Overview of breast cancer and its global burden

Cancer is a Pan societal problem that affects 2/3 of the world population. Among them Breast cancer is the most common cancer diagnosed in women, both in developing and developed countries. It is the 2nd leading cause of death in women worldwide. According to IARC 1.5 million new cases of Breast cancer was diagnosed in 2002, and among them approximately 411,000 died. Worldwide 1.68 million women were diagnosed with breast cancer just in the year 2012. There are said to be more than 6 million breast cancer survivors worldwide currently.

About 1 in 8 U.S. women (about 12.4%) will develop invasive breast cancer during the course of their lives. In 2018 an estimated 266,120 new cases of invasive breast cancer are expected to be diagnosed in women in the U.S along with 63,960 new cases of non-invasive in situ breast cancer. About 40,920 women are expected to die from breast cancer in 2018 even though rates have decreased since 1989, namely 39% decline from 1989-2015. As of January 2018 there are more than 3.1 million women with a history of breast cancer in the U.S. [12]

Incidence rates in the UK are expected to rise by 2% from 2014 to 2035. There were 11,433 reported deaths in 2014 due to breast cancer. [13]

Breast cancer in Africa

In recent years, the incidence of breast cancer has shown an alarming increasing trend in developing countries. In 2016, 30,700 new cases of breast cancer were expected to occur in African American black women. Mortality rate is said to be 42% higher in blacks than in whites. [12]

Data from South Africa's National Cancer Registry (NCR) show breast cancer as the leading cancer among women. South African women have a 1 in 29 lifetime risk of developing breast cancer, with an age-standardized incidence rate of 30.6 per 100,000 populations. These rates vary by race group, with Black women having the lowest (16.3) and White women the highest (69.4) rates of breast cancer diagnosis. [14] Breast cancer is the third commonest cancer in women in Uganda after Kaposi's sarcoma and cervical cancer. Breast cancer incidence in Uganda is 22: 100,000. Five-year survival rate is 56%. In Nigeria, the incidence of breast cancer has been reported to be 33.6/100,000 [15]

Breast cancer in Ethiopia

Breast cancer is the second most often occurring cancer (cervical cancer is first) among women in Ethiopia. It is estimated that around 10,000 Ethiopian women and men have breast cancer with thousands of more cases unreported as women living in rural areas often seek treatment from traditional healers before seeking help from the government health system.

During 1995–99, 137 biopsy proven breast cancer cases underwent surgical treatment at Tikur Anbessa Hospital, Addis Ababa. Of these cases, records of 125 were retrieved and analyzed to assess the pattern and treatment outcome of the disease. The median age of females was 40 years. The median duration of the presenting symptom on admission was nearly 1 year. Clinically, the majority of cases had stage III disease. Invasive ductal carcinoma was the most frequent type. Eighty-nine (71.2%) patients underwent modified radical mastectomy. During a short followup, 50 (45.9%) of 109 patients were seen with recurrences. Only 4 cases were seen at 5 or more years [16].

A prospective study conducted at Tikur Anbessa was designed to obtain information on demographic characteristics, clinical profile, and problems related to early diagnosis and treatment of breast cancer in 72 (62 females and 10 males) Ethiopian patients, the female to male ratio being 6.2: 1, and the females in this series developed breast cancer at a younger age (72% were premenopausal) and 76% had advanced disease (stages III and IV) at presentation [17].

Over a period of sixteen years, 1997-2012, more than 50 cancer types, a total of 16,622 new cases were registered in TASH. Out of this, 3460 (prevalence=20.8%) were new cases of breast cancer representing approximately 216 cases per annum. The peak age of incidence of breast cancer in this study was the 4th and 5th decade (30-49 years) which accounts for more than 60% (2076) of all cases. In developed countries, more than two-thirds of breast cancer cases are diagnosed in women aged 50 years and older [20], but in contrast, in this study it was found that more than 70% of the cases were diagnosed below 50 years of age. [18]

Few researches have been done to assess knowledge and practice of breast cancer and detection methods in our country. Most of which were done in hospitals and the respondents being medical professionals. Predictably most of the results showed the respondents to be knowledgeable and having good practice of breast cancer screening methods.

3. Objectives

General objective

- To assess overall awareness of women in Ethiopia about breast cancer and detection methods

Specific objectives

- To assess the knowledge of women of the risk factors, symptoms and detection methods of breast cancer
- To evaluate the practice of early detection methods of breast cancer

4. Methods and Material

Study Design

The study will use an institution-based cross-sectional study design to assess knowledge about breast cancer and practice of detection methods of female employees of Ethiopian Revenues and customs authority currently working at its head office in Addis Ababa.

Study Area

This study will be conducted at Ethiopian revenue and customs authority's headquarters in Addis Ababa. Ethiopian revenue and customs authority is a government institution established on 14th of July, 2008 by the merge of the Ministry of Revenue, Ethiopian Customs Authority and The Federal Inland Revenue Authority. The institution is organized with a total of 17 branches across the country, 5 of which are situated in Addis Ababa. It is manned with a total of 12,419 employees nationwide out of which 6,494 are women and the remainders 5,925 are men. Since this research is based in Addis Ababa it will only be able to address the women employees who are currently working in one of the five branches located in Addis Ababa, namely its head office. The institution has a total of 1,228 employees currently working at its headquarters, out of which 620 are women. The sole purpose of choosing this specific study area is because of its closer representativeness of the general population.

Study Population

All women employed at Addis Ababa branches of Ethiopian revenue and customs authority.

Study Period

Data collection will be carried out from March 12, 2018 until May 07, 2018

Sampling Method

The sample size was determined considering 95% confidence intervals, and 5% marginal error. However, as most of the researches done in this area in Ethiopia were done on medical personnel, estimates of proportion of women having adequate knowledge and practice were not available for the general population of Addis Ababa women. It was assumed that 50% of the women had adequate knowledge and practice. A total of 422 female employees including 10% to compensate for non-respondents will be chosen to participate for this research. The respondents will then be chosen with simple random sampling technique from an employee list provided by the institutions.

Study Variable

Dependent variable

Knowledge

Practice

Independent variables

Age

Educational status

Occupation

Monthly income

Data collection procedures and tools

Data collection will begin after acquisition of permission from the institution. Considering the fact that some of the responders might not be literates or be able to fully understand the question by themselves, the data will be collected using an interview based questionnaire. The questionnaire was prepared in English and will then be translated into Amharic for the data collection. The questionnaire includes questions that address relevant socio-demographic information about the respondents' knowledge about the major risk factors, symptoms, and early detection methods of breast cancer. The format will be commented and approved by respective advisors before data collection.

The data will be collected by SPHMMC students who will be employed for the data collection process. Adequate training about the research topic and how to fill the format will be given for data collectors before the collection date. The collectors will collect the data under principal investigator supervision. The data will be checked for completeness at the day of collection, by the principal investigator.

Data processing and analysis

Data from collected questionnaires will be checked visually for completeness, coded and entered into SPSS version 20. The results will be summarized using tables and charts. Chi-square test will be carried out to assess associations between demographic characteristic and knowledge, and practice variables.

5. Ethical considerations

Approval from SPHMMC public health department and academic & research vice provost will be received for this study prior to enrollment. A formal letter will be written by the vice provost to the government institutions in question. Permission will be asked from the responsible body of the unit and the interview will be conducted among volunteering women only. Verbal consent will be obtained from each individual respondent during data collection after a thorough explanation of the purpose of the study. The data will be used only for the intended purpose of the study.

6. Workplan and budget

No	Activities	Timeline
1	Proposal writing	January 11,2019-February 8,2018
2	Proposal approval	February 08,2018- February 19,2018
3	Data collection and clearing	March 12,2018- May07,2018
4	Data entry and analysis	May 07,2018- June 07,2018
5	Report writing	June 07- 21 2018
6	First draft submission	June 21 st , 2018
7	Review of feedback and finalization of research report	June 21-July 05, 2018
8	Submission of research report	July 05, 2018
9	Research report dissemination and evaluation by examiners	July 07, 2018- July 24, 2018
10	Research presentation	July 25-27, 2018
12	Final paper submission	July 30, 2018

Budget breakdown

Materials and human power	Unit	Required quantity	Unit price(birr)	Total price(birr)
Stationary				
• Pen	Pieces	6	5	30
• Pencil	Pieces	6	3	18
• Rubber	Pieces	3	4	12
• Printing	Pages	60	2	120
• Photocopying	Pages	5*422	1	2,110
• Binding	Number	2	2*20	40
Sub Total				2,330
Human power				
• Secretarial work and data entry	Days	5	100 *1	500
• Per diem for data collectors	person	3x5(days)	100	1,500
• Transportation	Days	5x4(person)	16	320
Sub Total				2,320
Grand Total				4,650 Birr

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Questionnaire

Demographic data

1. Age_____
2. Ethnicity_____
3. Religion_____
4. Marital status_____
5. Educational level_____
6. Occupation_____
7. Monthly income_____

Knowledge of breast cancer and detection methods

1. Have you ever heard about breast cancer? A. yes B. No
2. If yes, how?
3. Have any of your family members ever been diagnosed with breast cancer? If yes what is her relationship with you?
4. What risk factors of breast cancer do you know? (More than one answer is possible)
 - A. Older age a. yes b.no
 - B. Race/Ethnicity a. yes b. no
 - C. Positive family history a. yes b. no
 - D. Smoking a. yes b. no
 - E. Alcohol consumption a. yes b. no
 - F. High fat diet a. yes b. no
 - G. Early menarche a. yes b. no
 - H. Late menopause a. yes b. no
 - I. Older age at first child birth a. yes b. no
 - J. Other? Please mention_____ -
5. What symptoms of breast cancer do you know? (More than one answer is possible)
 - A. Lump in the breast
 - B. Discharge from the breast
 - C. Pain in the breast
 - D. Change in size/ shape of the breast
 - E. Discoloration or skin change of the breast
 - F. Ulceration of the breast
 - G. Nipple inversion
 - H. Lump under armpit
 - I. Other? Please specify_____
6. What screening methods of breast cancer do you know?
 - A. Self-breast examination
 - B. Clinical breast examination

- C. Mammography
- D. Other? Please specify_____
- 7. Do you know that early detection of breast cancer affects the prognosis? A. yes B. no
- 8. Have you ever heard of self-breast examination? If yes,
 - A. At what age should it be started being performed?
 - B. How often should it be performed?
 - C. Have you been taught how to perform it?
- 9. Have you ever heard of clinical breast examination? If yes
 - A. At what age should it be started to be performed?
 - B. How often should it be performed?
- 10. Have you ever heard of mammography? If yes,
 - A. At what age should it be started to be performed?
 - B. How often should it be performed?

Practice of breast cancer screening methods

1. Have you ever performed BSE? If no, why?
2. Have you ever had CBE performed if no why?
3. Have you ever had mammography performed? If no why?