



The magnitude of breast cancer among surgical patients with cancer and operative outcome of patients five year experience at SPHMMC; Addis Ababa, Ethiopia

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Table of contents

Contents

Acknowledgement	I
Table of contents	II
List of tables and graphs.....	III
Acronyms	IV
Abstract.....	V
Chapter One: Introduction.....	1
1.1. Background.....	1
1.2 Statement of the problem.....	3
1.3 Significance of the study.....	4
Chapter Two.....	5
Literature Review	5
Chapter 3-Objectives of the study	11
3.1 General objective	11
3.2. Specific objectives	11
Chapter 4: Methods and Materials	11
4.1 Study Design.....	11
4.2 Study period	11
4.3 Study area	11
4.4 Population	11
4.5 Data collection	12
4.6 Data management and analysis.....	12
4.7 Variables of the Study	12
4.8 Inclusion and exclusion criteria.....	12
4.9 Ethical considerations	12
4.10 Data quality assurance	12
4.11 Dissemination and utilization of the result	13
4.12 Limitation of the study	13
Chapter Four: Results and Discussion	14
4.1. Results.....	14
4.2 DISCUSSION.....	21
Chapter Five: Conclusion and Recommendations	24
Reference	25

List of tables and graphs

Table 1. Sociodemographic status of patients diagnosed with breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Table 2. Risk factors of breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Table 3. Common clinical features, site and duration at presentation of breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Table 4. Histologic variants, tumor grade and stage of breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Table 5. Interventions and post-operative complications for breast cancer patients in the study period at SPHMMC, A/A, Ethiopia.

Table 6. Duration of follow up of breast cancer patients referred to BLH for chemo radiotherapy in the study period at SPHMMC, A/A, Ethiopia.

Bar graph1. The trend of breast cancer SPHMMC in the study period at SPHMMC, A/A, Ethiopia.

Acronyms

SPHMMC- Saint Paul Hospital Millennium Medical College

A.A-Addis Ababa

TASH- Tikur Anbessa specialized hospital

WHO -World health organization

NGO-non-governmental organization

LMIC-low and middle income countries

ACS-American collage of surgery

G.C-Gregorian calendar

BC-breast cancer

BRCA1/2-breast cancer1/2

DCIS- ductal carcinoma in situ

LCIS-lobar carcinoma in situ

FNAC-fine niddle aspiration cytology

TNM- tumor, lymph node, metastasis

SEER-surveillance epidemiology and end result

OCP-oral contraceptive

HRT-hormone replacement therapy

HER-2-human endothelial growth factor receptor

SPSS-stastical package for social science

Abstract

Background: Breast cancer is the most common cancer in women worldwide, with nearly 1.7 million new cases diagnosed in 2012 (second most common cancer overall). In low and middle income countries (LMCs) like Ethiopia, breast cancers are commonly diagnosed at late stages (>70%), and women may receive inadequate treatment, pain relief, or palliative care and mortality rates are often much higher compared with rates in developed countries.

Objective: This study was designed to assess the magnitude of breast cancer among surgical patients with cancer and operative outcome of patients from September 1st 2013- September 1st 2017 at SPHMMC, Addis Ababa, Ethiopia.

Methodology: A retrospective descriptive study was conducted at SPHMMC by reviewing charts of 302 patients who were admitted in surgical wards with the diagnosis of breast cancer from September 2013- September 2017. Data was collected using data collecting check list and it was analyzed with computer programs (SPSS version 23). P=0.27, CI=95% and margin of error 0.05 were used. Depending on the results appropriate interpretations, discussions, conclusions and recommendations were made.

Results: There were total of 506 patients admitted in surgical ward with biopsy or FNAC diagnosed breast cancer during the five years study period at SPHMMC which shared 34.3% of tumor burden. Most of the patients (n=201, 66.5%) were in reproductive age group and 55.5% were in the age group between 30-49 years with mean age of 43.9. Most patients (n=295, 97.7%) were females with female to male ratio of 42:1. Most patient (n=234, 77.5%) arrived hospitals with painless lump on the breast for more than 6 months and most (n=247, 81.8%) had stage III disease at presentation. Surgery was the most common (n=288, 95.4%) treatment modality for breast cancer and only 13(4.3%) and 4(1.3%) patients received endocrine therapy and neo adjuvant chemotherapy respectively. Most of the patients (n= 300, 99.3%) were referred to BLH for chemo radiotherapy within 4 weeks to 8weeks. Majority of operated patients (n=266, 88.1%) had no post op complications and among complications seroma was the most common (n=12, 4.0%).

Conclusion: Breast cancer was the most common cancer among surgical patients admitted with cancer and its prevalence is increasing during the study period. Most patients were young and presented at late stage. Surgery was the main stay of breast cancer management and majority of operated patients had no post op complications.

Key words: breast cancer, magnitude, operative outcome, Saint Paul hospital millennium medical collage

Chapter One: Introduction

1.1. Background

Breast cancer is a major public health problem of great importance throughout the world. It is a stressful disease to those affected. Worldwide increase in the incidences of breast cancer is being observed. The increment is considerable for those of ages below 50 years. After menopause, the incidence rates continue to rise, but less dramatically. (East and Central African journal of surgery, 2006)

According to the World Health Organization, breast cancer is the most common cancer among women worldwide, claiming the lives of hundreds of thousands of women each year and affecting countries at all levels of development especially working power.

The vast majority of breast cancers begin in the parts of the breast tissue that are made up of glands for milk production, called lobules, and ducts that connect the lobules to the nipple. Invasive ductal cancer, also known as *infiltrating ductal carcinoma*, is the most common form of breast cancer; it accounts for 50% to 70% of invasive breast cancers. (Timothy P. Love (2012/2013): Establishing an Ethiopian Breast Cancer Registry)

Breast cancer typically produces no symptoms when the tumor is small and most easily treated. Therefore, it is very important for women to follow recommended screening guidelines for detecting breast cancer at an early stage. When breast cancer has grown to a size that can be felt, the most common physical sign is a painless lump. Any persistent change in the breast should be evaluated by a physician as soon as possible. Breast cancer is typically detected either during a screening examination, before symptoms have developed, or after a woman notices a lump. Most masses seen on a mammogram and most breast lumps turn out to be benign. When cancer is suspected, microscopic analysis of breast tissue is necessary for a definitive diagnosis and to determine the extent of spread (in situ or invasive) and characterize the type of the disease. (World Cancer Research Fund (2010): Food, Nutrition, Physical Activity, and the Prevention of Breast Cancer.)

Etiology of breast cancer is multi factorial (about 70% of females who develop breast cancer do not have identifiable risk factors.). From descriptive epidemiological data it has clearly emerged that breast cancer is a disease of affluent societies which have acquired the Western lifestyle, characterized by a high-caloric diet rich in animal fat and proteins, combined with a

lack of physical exercise. Various risk factors identified include age, hereditary, dietary (diet and obesity), gynecological (oral contraceptives, hormone replacing therapies, endogenous hormone levels, age of menarche and menopause, parity and mammographic density), life style (physical activity, smoking and alcohol), oxygen reactive species, radiation and environmental pollutants.(ACS booklet)

Treatment decisions are made jointly by the patient and the physician after consideration of the stage and biological characteristics of the cancer, the patient's age and preferences, and the risks and benefits associated with each option. Most women with early stage breast cancer will have some type of surgery, which is often combined with other treatments to reduce the risk of recurrence, such as radiation therapy, chemotherapy, hormonal (endocrine) therapy, and/or targeted therapy. Patients with metastatic disease are primarily treated with systemic therapies, which can include chemotherapy, targeted therapy, and hormonal therapy. (ACS booklet)

Breast cancer prognosis depends on tumor stage, tumor grade, nodal involvement, hormone receptor status, circulating tumor cells, disseminated tumor cells (bone marrow), multigene recurrence score, and response to chemotherapy. Extensive breast cancer screening programmes and the development of new treatments have improved the prognosis of breast cancer over all. The average 5 year survival rate for women with early stage breast cancer is 81%. However, on average only 35% of women with late or advanced stage breast cancer currently survive for 5 year. (World Cancer Research Fund (2010): Food, Nutrition, Physical Activity, and the Prevention of Breast Cancer.)

1.2 Statement of the problem

Breast cancer is one of the most common diseases influencing mortality even warning that the disease could overtake maternal mortality as cause of death in younger women, which then influences fertility and mortality by far throughout the world

Globally, if the prevalence continues to grow in this rate, the number of new breast Cancer cases could grow to as many as 16 million, and the number of deaths could rise to as many as 10 million by the year 2020.

Unfortunately, more than 70% of these deaths will occur in developing nations like Ethiopia, which are least prepared to address their growing cancer burdens.

Hospital records show that in Ethiopia there are more than 200,000 cancer cases per year but only about 500 patients (less than 1 %) per year could get treatment services where the treatment in the present situation costs a total of more than 80,000 ETB (6,667USD) which most patients cannot afford.

Non-declining incidence of breast cancer in Ethiopia indicates; the awareness of people to be diagnosed is improved and more cancerous patients are there in the country, and inadequate or ineffective control measure to stem its morbidity.

Therefore, there is the need to step up activities through NGOs, screening programs and trainings such as mammography, clinical and self- examination, to control the upward trends of breast cancer in the country.

1.3 Significance of the study

Most developing countries are not well aware of cancer in general and breast cancer in particular and being diagnosed with cancer is not only knowing it as death sentence for that victim but becoming emotionally vulnerable, feeling as a cursed person, being isolated and outcast from the society. There is no supporting team to build the confidence of the victims in those countries.

Unlike the Western world, where women present early and have a good chance of survival due to different treatment modalities, women in LMICs like Ethiopia usually present late and are expected to have a very limited life span.

It is so sad to learn that large number of cancer victims in Ethiopia don't have access to hospital and medical care. Public oncologic treatment in Ethiopia is limited to the BLH which is staffed with few oncologists. As a result cancer in general and breast cancer in particular has become one of the silent killers in Ethiopia.

There is no data which tells us the burden of breast cancer in our hospital, SPHMMC. So this study

1. May provide information about the magnitude (prevalence) of the breast cancer in SPHMMC.
2. Can establish baseline data for further studies on breast cancer.
3. Can also be used to produce crude estimates of breast cancer prevalence which can be base line for policy makers.

Chapter Two

Literature Review

Breast cancer is the most prevalent cancer in the world (4.4 million survivors up to 5 years following diagnosis) and the second most common cause of cancer related mortality in women wide world (Parkin et al., 2005). It also accounts for 23% (1.38 million) of the total new cancer cases and 14% (458,400) of the total cancer deaths in 2008 and ranks second most common cancer overall (10.9% of all cancers) but ranks fifth as cause of death (Ferlay et al., 2010). Breast cancer incidence rates vary from 19.3 per 100,000 women in Eastern Africa to 89.7 per 100,000 women in Western Europe. They are normally high in developed regions of the world (except Japan) and low in most of the developing regions. Due to more favorable survival of breast cancer in developed regions, the range of mortality rates is very much less, approximately 6-19 per 100,000. Notwithstanding, it is still the most frequent cause of cancer death in women in both developing (269 000 deaths, 12.7% of total) and developed regions, where the estimated 189 000 deaths is almost equal to the estimated number of deaths from lung cancer (188 000 deaths) (Ferlay et al., 2010). The decline in breast cancer mortality has been largely attributed to the combination of early detection with screening programs and the advent of more efficacious adjuvant systemic therapy. (Horner et al., 2006).)

Breast cancer is common in women both in the developed and the developing countries, comprising 16% of all female cancers. Although it is thought to be a common cancer in the developed countries, a majority (69%) of all breast cancer deaths occurs in developing world. Indeed, increase life expectancy, increase urbanization and adoption of western lifestyles have increased the incidence of breast cancer in the developing countries (Kanavos, 2006). Even though it is now the most common cancer both in developed and developing regions with around 690 000 new cases estimated in each region, much of the burden of incidence, morbidity, and mortality will occur in the developing world with population ratio of 1:4 (Ferlay et al., 2010). As developing countries succeed in achieving lifestyles similar to those in advanced economies, they will also encounter much higher cancer rates, particularly cancers of the breast. This forms part of a larger epidemiological transition in which the burden of chronic, non-communicable disease once limited to industrialized nations, is now increasing in less developed countries (Kanavos, 2006).

21% of all breast cancer deaths worldwide are attributable to alcohol use, overweight and obesity, and physical inactivity. This proportion was higher in high-income countries (27%), and the most important contributor was overweight and obesity. In low- and middle-income countries, the proportion of breast cancers attributable to these risk factors was 18%, and physical inactivity was the most important determinant (10%).(WHO,2014)countries.(Ferlay et al., 2010a).

The risk of getting breast cancer increases with age. Approximately 77% of women with breast cancer are over the age of 50 at the time of diagnosis (USA Department of health, 2012) Female gender is the most important risk factor for breast cancer. Men can develop breast cancer, but the risk for females is about 100 times greater. As women age, the risk of developing breast cancer increases. About 66% of all invasive breast cancers are diagnosed in women age 55 and older, while about 12% are diagnosed in women younger than age 45. (ACS, 2013)

As of 2012, there were an estimated 2.9 million breast cancer survivors living in the U.S. Breast cancer development increases with age, beginning to rise at approximately age 30 years. In this study, 13.4% of cases were under 30 years of age. Most breast cancers occur during the postmenopausal years. Among Japanese women, however, no postmenopausal incidence risk occurs; it is puzzling. Most women with breast cancer were in the premenopausal state, about 70% less than 50 years of age. (D Gareth R Evans, 2007)

Certain reproductive factors slightly increase risk. These include giving birth to a first child after age 30, null parity (never having children), starting menstruation before age 12, and/or entering menopause after age 55. The increase in risk is likely due to a longer lifetime exposure to estrogen. Using combined hormone therapy after menopause (estrogen and progesterone) increases breast cancer risk for current or recent users, especially if used for longer than 2 to 3 years. The use of estrogen alone after menopause does not appear to increase the risk of developing breast cancer; however, when used long term (> 10 years). (ACS, 2013) The explanation for this possible effect may be that breastfeeding reduces a woman's total number of lifetime menstrual cycles the same as starting menstrual periods at a later age or going through early menopause. (Life style related risk, 2013)

Risk is increased for women whose close relatives have breast cancer. In general, the more biological relatives with breast cancer, especially relatives diagnosed before age 50, the higher a woman's risk. Less than 15% of women with breast cancer have a positive family history in a first degree relative. A history of breast cancer in one breast increases the risk of developing a new cancer in the other breast or in another part of the same breast by 3 to 4 times. (ACS, 2013)

About 5% to 10% of breast cancers are thought to be hereditary, caused by abnormal genes passed from parent to child. White women are slightly more likely to develop breast cancer than African American, Hispanic, and Asian women. But African American women are more likely to develop more aggressive, more advanced-stage breast cancer that is diagnosed at a young age. (ACS, 2013)

Research consistently shows that drinking alcoholic beverages like beer, wine, and liquor increases a woman's risk of hormone-receptor-positive breast cancer. Smoking causes a number of diseases and is linked to a higher risk of breast cancer in younger, premenopausal women. Research also has shown that there may be link between very heavy second-hand smoke exposure and breast cancer risk in postmenopausal women. The results of several studies suggest that women who work at night factory workers, doctors, nurses, and police officers have a higher risk of breast cancer compared to women who work during the day. (Breast cancer facts, 2014)

The most recent update released from Uganda cancer registry shows increasing incidence rates of cancer in both males and females over the period of 1991 to 2006. Among females, the cancer with the greatest incidence was cervical cancer (ASR 52.4 per 100,000) followed by breast cancer (ASR 31.0 per 100,000) and Kaposi sarcoma (ASR 20.1 per 100,000). While the incidence rate of breast cancer in Uganda remains relatively low compared with the rest of the world, it has shown a marked increase of 4.5% annually. This growth in incidence was most notable in the growing population of postmenopausal women (D. M. Parkin, Namboozee, Wabwire-Mangen, & Wabinga, 2010; H. R. Wabinga, Parkin, Wabwire-Mangen, & Namboozee, 2000). The cancers that ranked highest in 5-year ASRS among women were breast (42%), non-Hodgkin lymphoma (26%), and Kaposi sarcoma (21%) (H. Wabinga, Parkin, Namboozee, & Amero, 2011).

According to Zimbabwe (1991-2010) the overall risk of cancer increased in both sexes and the most common cancers diagnosed among women were cervical (24.6%), Kaposi sarcoma (17.4%), and breast cancer (10.4%). By 2010 the age-standardized incidence rate of breast cancer had increased to 47.8 per 100,000 with statistically significant growth of 4.9% annually. Again, this growth in breast cancer incidence was most evident in older women (after age 50). Based on trends of all the cancers studied, the authors note that there is an emerging burden of cancers associated with a “westernized” lifestyle. Among women, the highest 5-year ASRS rates were seen for melanoma (83%), cancers of the eye (74%), and breast cancer (62%) and marked disparity was noted in the survival of white and black Zimbabweans (Chokunonga, Borok, Chirenje, Nyabakau, & Parkin, 2011).

The very first population-based cancer registry in Ethiopia, the Addis Ababa Population-Based Cancer Registry (AAPBCR), was recently established in late 2011. From January to December of 2012, 2907 cancer cases were registered in this new registry; 912 (31.4%) diagnosed in males and 1995 (68.6%) in females. In women, the three most common cancers were breast cancer (34.0%), cervical cancer (15.8%), and ovarian cancer (6%). (D. M. Parkin, 2013).

Loutfi and Pickering published the relative frequency of cancers diagnosed at two pathology centers in Addis Ababa between 1979 and 1988. A total of 4,067 cancer specimens were retrospectively reviewed with nearly twice as many cancer diagnoses for women as for men for each year reviewed. The most common cancer diagnosed among women was of the uterine cervix (32%), followed by breast cancer (23%) and ovarian cancer (7%). The most common cancer diagnosed among men was lymphoma (19%), followed by soft tissue sarcoma (13%) and head and neck cancer, which included thyroid cancer (11%).

In the years 1995 to 1999, 137 histological confirmed breast cancer patients underwent surgery at Black Lion Hospital (BLH), Addis Ababa. Of these, the records of 125 cases were retrieved and analyzed. The majority (55.2%) of the patients were in the 30-49 age groups. Only 5% were 25 years old or below. The age for females ranged between 20 and 80 years with a mean of 42.4 ± 11.9 . In males the ages ranged from 37 to 80 years with a median 55.8 ± 13.3 . Out of 112 females, 13.4% and 70.5% were under the age of 30 and 50 years, respectively. Most patients were premenopausal women. The median parity was 4 ± 2 but 18.1% were young nulliparous women. Majority of cases were Amhara by ethnicity and Christian. (East and Central Africa journal of surgery, 2006)

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. This is at variant to the report of an earlier study by Tessema carried out in the same Centre, using surgical pathology registers, where 137 cases were registered over a period of 5-years giving annual rate of 27.4 cases of breast cancer. 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 and that supports the reports from Kenya and South Africa but lower than reports from Norway and among the Philippines which have 6th and 8th decade respectively In developed countries, more than two-thirds of breast cancer cases are diagnosed in women aged 50 years and older but in contrast, in this study we found that more than 70% of the of breast cancers being diagnoses at stage IIIA or later and not a single patient being diagnosed with in situ, or Stage 0, disease.(Timothy P. Love,et.at,2013)

According to A cohort study of 1,070 women in Radiotherapy Center, Addis Ababa University, Addis Ababa, Ethiopia report by Kantelhardt et al.(Kantelhardt et al.2014);nearly all patients (n=930; 87%) received an operation. The majority had modified radical mastectomy (n=880; 95%). Of these, an estimated 20% were operated at the Department of Surgery at AA University Hospital. In 628 surgery reports describing the margins, 69.9% reported surgical margins free of disease and 30.1%had margins involvement [for 302 patients (32%),no information on margins was available]. The majority of patients (n=893; 83%) also received chemotherapy, mainly anthracycline-containing chemotherapy (n=782). Of all chemotherapy patients, 753 patients (83.7%) received a full six cycles of chemotherapy, mainly FAC (n=577). There were 42 patients who received Neoadjuvant chemotherapy.

All endocrine therapy for positive or unknown receptor status (n=864) was administered at the AA University Radiotherapy Center. 79% of patients with chemotherapy started within 6 months and 77% of patients with endocrine therapy started treatment within 12 months after surgery. In 285 women (26.6%), distant metastasis occurred during follow-up. The majority of women came for regular follow up visits ranging from 8.1 to 65.6 months after primary diagnosis (median 23.1 months).The age of the women ranged from 20 to 88 years (median age 43.0 years), with women aged 30–39 being the largest group of the study population (37.9%). Almost half of the women were premenopausal (49.7%; n=889 information available). Among the women whose origin had been specifically inquired when their history

was taken; half were classified as AA and half as non-AA. The majority of women presented with stage 3 disease. Nodal status was positive in 81% of cases. The most frequent histological type of BC was ductal carcinoma NOS. About half of the women had a pathology report showing grade 2. MFS of patients after 2 and 5 years was 59 and 27% respectively. MFS was highest in women aged 50–59 years and was lower in younger age groups. Women aged 60 years and above also tended to have worse. Women with stage 3 disease had a considerably worse MFS than patients with stage 1/2 disease, showing an HR of 2.62. Patients with ductal histology had the best MFS compared with the other entities. (Kantelhardt et al. 2014)

A more recent study by Bezabih (2004) reviewed all cytopathology cancer diagnoses made in Jimma, Ethiopia between September 1998 and August 2002 on all superficial malignancies amenable to the fine needle aspiration cytology (FNAC) biopsy technique. Out of 267 malignant neoplasms, breast cancer was the most common of all malignancies found comprising 79 cases (29.6%) followed by non-Hodgkin lymphoma (13.9%) and soft tissue sarcoma (9.7%). One third of patients found to have primary breast cancers in this study were also found to have ipsilateral axillary lymph node metastases at the time of FNAC, demonstrating the frequently late stage at diagnosis in this setting (Bezabih, 2004).

Retrospective and qualitative research was done by Lidetu and his colleagues (2015) on breast cancer patients from July, 2010 to May, 2015 in both Mekelle Hospital and Ayder Referral Hospital. Out of which 472 (97%) were women and 15 (3%) were male patients. With female to male sex ratio of 32:1 and mean age of 43. Women Breast Cancer comprises 34% (410) of all tumors in Ayder referral Hospital. Most of breast cancer patients were under age of 50 years, premenopausal and reproductive age group, which were the working power of the nation. Most patients were never practiced self-breast examinations. And most patient arrived hospitals with breast swelling of more than 2 years to 20 years (Lidetu Afework, Temesgen G/Mariam and Bethel Mesfin (2015): Prevalence and associated risk factor of women's breast cancer in Tigray region; Ethiopia)

Chapter 3-Objectives of the study

3.1 General objective

To assess the magnitude of breast cancer among surgical patients with cancer and operative outcome of patients from September 2013-September 2017 at SPHMMC; Addis Ababa.

3.2. Specific objectives

1. To assess the magnitude of breast Cancer among surgical patients with cancer at SPHMMC from September 2013-September 2017.
2. To assess operative outcome of patients with breast cancer at SPHMMC in the study period.

Chapter 4: Methods and Materials

4.1 Study Design

Retrospective descriptive hospital based Study was done.

4.2 Study period

Five years from September 1st 2013 to September 1st 2017G.C

4.3 Study area

The study was conducted at SPHMMC which is one of the four hospitals under federal government found in Addis Ababa, Ethiopia. It serves as a referral center for patients from Addis Ababa and all over the country. It is also a teaching hospital for SPHMMC & other medical school students in the city for both under graduate and post graduate studies but it lacks well organized oncology center.

4.4 Population

All patients admitted in surgical wards with the diagnosis of cancer in the study period from September 2013GC to September 2017GC were the source population and all patients who were admitted with the diagnosis of breast cancer in the study period were the study population.

4.5 Data collection

The charts of those patients who were diagnosed and admitted with breast cancer were thoroughly reviewed for the study variables. The data was collected using structured pretested data collecting check list by the primary investigator and two trained final year medical students.

4.6 Data management and analysis

Completeness of the data was checked during the data collection period. Before analysis, data was checked for errors, information that needs coding was coded and missing values was dealt with. The data was entered into a computer software Statistical package for social scientists (SPSS) version-23 to be edited, cleaned & analyzed. The result was presented using numbers, ratios, tables and graphs.

4.7 Variables of the Study

Age, sex, religion, occupation, educational status, parity, menopausal status, OCP, alcohol, cigarette smoking, family history of breast cancer, previous history of breast cancer, related diseases, histologic variants, stage, grade, types of operation (procedures), operative outcomes.

4.8 Inclusion and exclusion criteria

Inclusion criteria: All patients who were admitted in surgical wards with the diagnosis of breast cancer during the study period were included.

Exclusion criteria: Patients who were operated for benign breast pathologies and patients with incomplete chart (>10 variables missed) or lost chart were excluded

4.9 Ethical considerations

The study was conducted after ethical clearance was obtained from the college institutional review board (IRB). Confidentiality of information collected from charts was respected and only used for this study purpose.

4.10 Data quality assurance

All charts were thoroughly reviewed so as to decrease the occurrence of inadvertent mistakes by carefully constructed data collecting check list. The data was cross checked and tested by the primary investigator and two trained final year medical students.

4.11 Dissemination and utilization of the result

This study results can be used by students, surgeons, the hospital policy makers and researchers. The result can be also presented in meetings/conferences.

4.12 Limitation of the study

- It may not represent the burden of breast cancer in the country as it is a hospital based

Study.

- Since the data was collected from hospital documents and patient cards,

all important variables were not included.

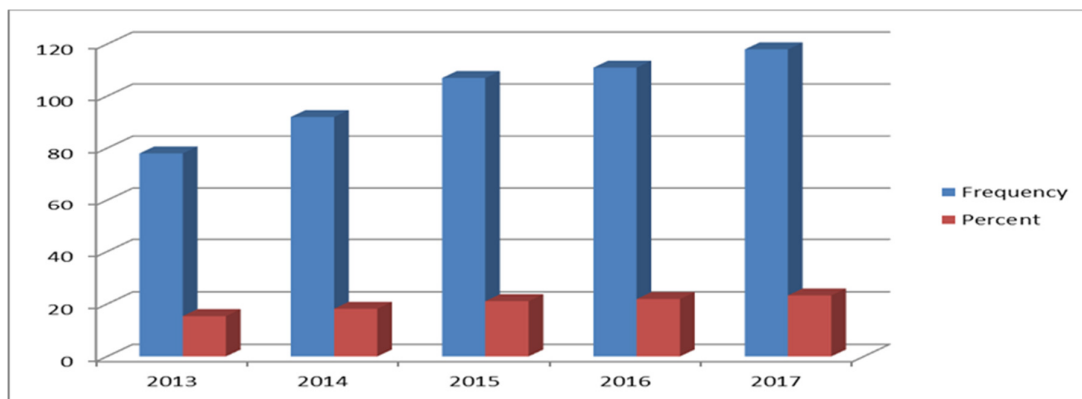
- Bias could be there since was retrospective study.

Chapter Four: Results and Discussion

4.1. Results

There were total of 1475 patients admitted in surgical ward with biopsy or FNAC diagnosed malignant tumors during the five years study period at SPHMMC, A/A, Ethiopia. Breast Cancer was the most common cancer which comprises 506(34.3%) cases followed by colorectal. (n=226, 15.3%). Out of 506 patients, 302 patients met the inclusion criteria and analyzed.

Bar graph1. The trend of breast cancer SPHMMC in the study period at SPHMMC, A/A,Ethiopia.



As the year increases, prevalence of breast cancer increases.

Table 1. Sociodemographic status of patients diagnosed with breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Age ranges	No	%	sex	No	%	Residence	No	%
20-29	34	11.3	Male	7	2.3	Tigray	1	.3
30-39	94	31.1	Female	295	97.7	Amhara	13	4.3
40-49	73	24.2	Total	302	100.0	Oromyia	167	55.3
50-59	55	18.2				Addis Ababa	99	32.8
60-70	28	9.3				SNNPE	21	7.0
>70	18	6.0				D/Diwa	1	.3
Total	302	100.0				Total	302	100.0
Religion	No	%	Occupation	No	%	Educational status	No	%
Orthodox	228	75.5	Government employed	21	7.0	Elementary	36	11.9
Muslim	40	13.2	Self employed	47	15.6	Junior	60	19.9
Protestant	34	11.3	Housewife	222	73.5	High school	26	8.6
Total	302	100.0	Farmer	12	3.9	College/University	20	6.6
			Total	302	100.0	Never attended	160	53.0
						Total	302	100.0

Out of 302 patients with breast cancer 34(11.3%),94(31.1%),100(33.1%) and 74(24.5%) were in the age group between 20-29, 30-39,40-50 and above age of 50 years respectively. Most of the patients (n=201, 66.5%) were in reproductive age group and 167(55.5%) were in the age group between 30-49 years. The mean age was 43.9 and the age of the patient ranges from 22-80 years. Most patients (n= 295, 97.7%) were females with female to male ratio of 42:1. Majority of patients (n=167, 55.3%) were from Oromyia region others like 99(32.8%), 21(7.0%) and 13(4.3) were from A/A, SNNPE and Amhara respectively. 228(75.5%)

patients were orthodox in religion and majority (N=222, 73.5%) were housewife and never attended school. (N=160, 53.0%)

Table 2. Risk factors of breast cancer in the study period at SPHMMC, A/A, Ethiopia.

OCP use	No	%	Cigarette smoking	No	%	Alcohol intake	No	%
Yes	5	1.7	yes	1	.3	Yes	5	1.7
No	274	90.7	no	289	95.7	No	272	90.1
Missed	16	5.3	missed	12	4.0	Missed	25	8.3
not applicable	7	2.3	Total	302	100.0	Total	302	100.0
Total	302	100.0						
Precious history of breast cancer	No	%	Family history of breast cancer	No	%	Related disease	No	%
yes	6	2.0	Yes	9	3.0	cervical cancer	2	.7
no	296	98.0	No	293	97.0	ovarian cancer	2	.7
Total	302	100	Total	302	100.0	HIV	2	.7
						No	296	98.0
						Total	302	100.0
Menopausal status	No	%	Reproductive status	No	%			
premenopausal	194	64.2	pares	266	88.1			
postmenopausal	101	33.4	Null pares	29	9.6			
not applicable	7	2.3	not applicable	7	2.3			
Total	302	100.0	Total	302	100.0			

Out of 302 patients with breast cancer most of them (n=194,64.2%) were premenopausal and majority (n=266,88.1%) were pares. Most patients (n= 274,90.7%) had no history of OCP use and only1 (0.3%) and 5 (1.7%) patients had history of cigarette smoking and alcohol intake respectively. Most the patients (n=294, 97.4%) had no history of previous breast cancer and only 9(3.0%) had family history of breast cancer. Majority of patients (n= 296, 98.0%) had no related diseases.

Table 3. Common clinical features, site and duration at presentation of breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Clinical presentation		No	%	Site	No	%
	painless lump	234	77.5	Rt upper outer quadrant	126	41.7
	painful lump	20	6.6	Rt lower outer quadrant	6	2.0
	breast size change	1	.3	Rt upper inner quadrant	9	3.0
	bloody nipple discharge	7	2.3	Periareolar area	9	3.0
	serious nipple discharge	1	.3	Lt upper outer quadrant	82	27.2
	nipple retraction	8	2.6	bilateral breast	7	2.3
	ulceration on breast +lump	30	9.9	Lt upper inner quadrant	33	10.9
	same side axillary mass	1	.3			
	Total	302	100.0	Rt lower outer quadrant	6	2.0
Duration of presentation		Frequency	Percent			
	1-6 months	116	38.4			
	7-12 months	123	40.7			
	13-18 months	6	2.0			
	19-24 months	33	10.9			
	> 24 months	24	7.9			
	Total	302	100.0			

Most breast cancer patients (N= 234, 77.5%) presented with painless lump and Rt breast was the common site (n=198, 65.6%) and in 7(2.3%) patients it occurred bilaterally. Duration at presentation ranges from on month to ten years and 61.6% patients presented after 6 months.

Table 4. Histologic variants, tumor grade and stage of breast cancer in the study period at SPHMMC, A/A, Ethiopia.

Histologic type	No	%	Grades	No	%
Invasive ductal carcinoma	275	91.1	well differentiated	23	7.6
invasive lobular carcinoma	9	3.0	moderately differentiated	91	30.1
mucinous carcinoma	5	1.7	poorly differentiated	134	44.4
Paget's disease	3	1.0	Missed	54	17.9
papillary carcinoma	5	1.7	Total	302	100.0
			Stages		
both invasive ductal and lobular carcinoma	2	.7	Stage IIA	7	2.3
Missed	3	1.0	Stage IIB	17	5.6
Total	302	100.0	Stage IIIB	128	42.4
			Stage IIIC	72	23.8
			Stage IV	31	10.3
			Total	302	100.0

Out of 302 breast cancer patients 275(91.1%) had invasive ductal carcinoma histologic type and 9(3.0%) cases had invasive lobular carcinoma. Majority of 134(44.4%) cases had poorly differentiated tumor grade and around 91(30.1%) cases had moderately differentiated tumor grade. Only 23(7.6%) cases had well differentiated tumor grade. Majority of patients (n=247, 81.8%) presented with stage III disease and 31(10.3%) cases presented with stage IV. About 24(7.9%) cases presented with stage II disease.

Table 5. Interventions and post-operative complications for breast cancer patients in the study period at SPHMMC, A/A, Ethiopia.

Surgical procedures	Frequency	Percent	Complications	Frequency	Percent
MRM	264	87.4			
Simple/toilet mastectomy	20	6.6	Seroma	12	4.0
Quadrantectomy	4	1.3	Hematoma	2	0.7
Total	288	95.4	surgical site infection	9	3.0
Neoadjuvant chemotherapy	No	%			
yes	4	1.3	skin flap necrosis	2	0.7
no	298	98.7			
Total	302	100.0	loco regional recurrence	9	3.0
Endocrine therapy	No	%	Lymphedema	1	0.3
Yes	13	4.3	No	266	88.1
No	289	95.7	Total	302	100.0
Total	302	100.0			

Out of 302 breast cancer patients MRM was done for 264(87.4%) patients. The other procedures were simple/toilet mastectomy and quadrantectomy for 20(6.64%) and 4 (1.3%) cases respectively. Only 4(1.3%) and 13(4.3%) patients received neo adjuvant chemotherapy and endocrine therapy respectively. Most of the patients (266, 88.1%) had no post op complications and among complications seroma shared the commonest (n =12, 4.0%).

Table 6. Duration of follow up of breast cancer patients referred to BLH for chemo radiotherapy in the study period at SPHMMC, A/A, Ethiopia.

Duration of follow up (weeks)	No	%	Referred to BLH	No	%
<4 weeks			yes	300	99.3
	41	13.6	no	2	0.7
			Total	302	100
4-12 weeks	242	80.1			
13-25 weeks	13	4.3			
26-38 weeks	4	1.3			
>39-52 weeks	1	.3			
>52 weeks	1	.3			
Total	302	100.0			

Out of 302 breast cancer patients 120 (39.7%) had 4 weeks follow up period and 44(14.6%) of cases had 8 weeks follow up period. Over all follow up period ranges from 1week to 62 weeks. Most of the patients (n=300, 99.3%) were referred to BLH for chemo radiotherapy.

4.2 DISCUSSION

A retrospective descriptive study was done on 302 breast cancer women attended in SPHMMC from September, 2013-September 2017. There were total of 1475 patients admitted in surgical ward with biopsy or FNAC diagnosed tumor (neoplasms) during the five years study period. Breast Cancer was the most common cancer which comprises 506(34.3%) cases followed by colorectal cancer. Which is almost similar with the study done by D. M.Parkin, 2013 on Addis Ababa Population-Based Cancer Registry (AAPBCR) from January to December of 2012 on 2907 cancer cases in which breast cancer was the most common women cancer (34.0%). This result is also almost similar that of the study done by Lidetu and his colleagues from July, 2010 to May, 2015 in both Mekelle Hospital and Ayder Referral Hospital on which women breast cancer comprises 34% (410) of all tumors. (Lidetu Afework, Temesgen G/Mariam and Bethel Mesfin (2015). Period prevalence of breast cancer showed increment in SPHMMC. Comparing to the magnitude of breast cancer patients in 2013 to 2017 it was seen 0.6 times increment.

In this study breast cancer increases with age, beginning to rise at approximately age 28 years. The age of the patient ranges from 22-80 years and the mean age was 43.9. More than half of the patients (n= 167, 55.5%) were in the age group between 30-49 years. This result is almost similar that of the study done in the years 1995 to 1999 at BLH in which the majority (55.2%) of the patients were in the 30-49 age groups and the age for females ranged between 20 and 80 years with a mean of 42.4 ± 11.9 . Unlike the western studies reported by ACS, 2013 G.C for which about 66% of all invasive breast cancers are diagnosed in women age 55 and older, in this study most women (n=189, 62.6%) were younger than age 45 and only 73(24.2%) were above 50 years.

Consistent with previous findings female predilection was seen in this study in which most patients (n=295, 97.7%) were females and only 7(2.3%) were males with female to male ratio of 42:1. This result is almost similar that of the study done by Lidetu and his colleagues from July, 2010 to May, 2015 in both Mekelle Hospital and Ayder Referral Hospital on which 472(97%) were women and 15(3%) were male patients with female to male sex ratio of 32:1 (Lidetu Afework, Temesgen G/Mariam and Bethel Mesfin (2015)

The patients came from every corner of the country and nearly more than half (55.3%) were from Oromyia region and 32.8% came from A/A. Most of patients (75.5%) were orthodox in religion and the rest (13.2%) and (11.3%) were Muslims and protestant in religion respectively.

Even though studies suggest more breast cancer from urban areas because of industrialization, growth and development, in this study most of the patients (n=160, 53.0%) were from rural areas and never attended school especially those above 35 years and the majority (n=222, 73.5%) were housewife by occupation.

This study shows most patients (n= 194, 64.2%) were in premenopausal state and most of them (88.1%) were pares. This result is almost similar that of the study done in the years 1995 to 1999 at Black Lion Hospital in which most patients were in premenopausal state and parous (81.9%). But according to D Gareth R Evans, 2007 most breast cancers in the western women occur during the postmenopausal years. Among Japanese women, however, no postmenopausal incidence risk occurs and most women with breast cancer were in the premenopausal state, about 70% less than 50 years of age.

In previous studies less than 15% of women with breast cancer have a positive family history in a first degree relative and in this study also only 9(3.0%) cases had family history of breast cancer.

Research consistently shows that drinking alcoholic, cigarette smoking, OCP use increases a woman's risk of hormone-receptor-positive breast cancer. In this study only 5 (1.7%) cases had history of drinking alcoholic and 5(1.7%) and 1(0.3%) patients had history of OCP use and smoking respectively.

According to ACS, 2013 report a history of breast cancer in one breast increases the risk of developing a new cancer in the other breast or in another part of the same breast by 3 to 4 times. In this study 6(0.02%) patients had history of previous breast cancer of which 5(83.3%) occurred on same side and 1(16.6%) occurred on both sides. Most of the patients (n=296, 98.0%) had no other related diseases.

In this study most of the patients (n=234, 77.5%) presented with painless lump followed by ulceration and discharge (n= 30, 9.9%) and predominantly affected breast was the right side (n=198, 65.6%) particularly rt upper outer quadrant (n= 126, 41.7%) and in only 7(2.3%) patients it occurred bilaterally. Most of the patients (n=186, 61.6%) presented late usually

after 6 months and duration at presentation ranges from one month to ten years. Invasive ductal carcinoma was the dominant histologic type (n=275, 91.1%) and mostly it was poorly differentiated (n=134, 44.4%). The majority patients had Stage III disease (n=247, 81.8%) and 31(10.3%) cases had Stage IV disease at presentation. This is supported by ACS, 2013 report which says African American women are more likely to develop more aggressive, more advanced-stage breast cancer that is diagnosed at a young age. This study results also supported by Timothy P. Love study in BLH over a period of sixteen years, 1997-2012, on 3460 breast cancer patients in which more than 70% of the breast cancers being diagnosed at stage IIIA or later and not a single patient being diagnosed with in situ, or Stage 0 disease.

In this study Surgery was the most common (n=288, 95.4%) treatment modality for breast cancer) and MRM shared the majority (n= 264, 91.7%) and other procedures were simple/total mastectomy and quadranglectomy to 20(6.64%) and 4 (1.3%) cases respectively. But only 13(4.3%) and 4(1.3%) patients received endocrine therapy and neo adjuvant chemotherapy respectively. According to A cohort study of 1,070 women at BLH (Kantelhardt et al.2014); nearly all patients (n=930; 87%) received an operation and the majority had modified radical mastectomy (n=880; 95%). The majority of patients (n=893; 83%) also received chemotherapy (n=782) and there were 42 patients who received Neoadjuvant chemotherapy. About 77% patients received endocrine therapy within 12 months. This showed us almost operative management is similar to that of BLH but fewer patients received Neoadjuvant and most of the patients (n= 300 , 99.3%) were referred to BLH for chemotherapy in short period of time(4 weeks – 8weeks) but we did not know whether they received chemotherapy or not. Majority of operated patients (n=266, 88.1%) had no post op complications. Among complications seroma were the most common (n=12(4.0%) and the others were surgical site infection, loco regional recurrence, skin flap, necrosis, hematoma, hemorrhage and lymphedema.

Chapter Five: Conclusion and Recommendations

5.1 Conclusion

Breast cancer was the most common cancer in surgical patients with cancer and it was distributed in all corners of the country. Most patients were female, under age of 50 years, premenopausal and at reproductive age group. Most patients never attended school in their life time especially those above the age of 35 years.

Most patient arrived hospitals with painless lump on the breast of more than 6 months and most had stage III disease at presentation.

Invasive ductal carcinoma was the dominant histologic type and mostly it was poorly differentiated

Surgery was the most common treatment modality for breast cancer and MRM shared the majority. Majority of operated patients had no post op complications. Among complications seroma were the most common. Almost all patients were referred to BLH for chemo radiotherapy and very few patients received Neoadjuvant chemotherapy and endocrine therapy.

5.2 RECOMMENDATIONS

1. Government officials and policy makers should focus on breast cancer prevention or early detection that is consuming and costing the life of working power and reproductive age groups
2. Cancer Centers with full infrastructure and set up expansion has to be taken seriously and neoadjuvant chemotherapy and endocrine therapy should be offered for those who deserve as much possible.
3. Policy makers have to focus on adult education to eradicate illiteracy in people above the age level of 35 to maximize human development index of the Country.
4. It is better to do further large scale prospective study which contains all important variables concerning breast cancer.

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