



ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

MAGNITUDE OF MASTECTOMY, POST-MASTECTOMY HEALTH-RELATED QUALITY OF LIFE AND ITS PREDICTORS AMONG BREAST CANCER PATIENTS IN ADDIS ABABA, ETHIOPIA.

PI: RODA MESFIN (MD)

A THESIS SUBMITTED TO THE GRADUATE PROGRAM OF ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF PUBLIC HEALTH WITH SPECIALTY IN EPIDEMIOLOGY AND BIOSTATISTICS

AUGUST 2025

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APPROVAL SHEET
ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
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Magnitude of Mastectomy, Post-Mastectomy Health-Related Quality of Life and Its Predictors Among Breast Cancer Patients in Addis Ababa, Ethiopia.

I undersigned agree to accept all responsibilities for the scientific and ethical conduct of this research project and declare that this thesis is my original work in partial fulfilment of the requirement for the Master of Public Health in Epidemiology and Biostatistics.

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APPROVAL BY EXAMINATION BOARD

This thesis by Roda Mesfin is accepted in its present form by the board of examiners as satisfying thesis requirements for the review for the degree of Master of Public Health in Epidemiology and Biostatistics.

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List of Abbreviations

BC	Breast Cancer
EMR	Electronic Medical Recording
EORTC	European organization for research and treatment of cancer
EORTC BR45	European organization for research and treatment of cancer Breast Cancer 45
EORTC C30	European organization for research and treatment of cancer core 30
GHS	Global Health Status
GLOBOCAN	Global cancer observatory
LMICs	Low- and middle-income countries
MRM	Modified Radical Mastectomy
pT-stage	Pathological T stage
SES	Socioeconomic status
SPHMMC	St Paul's Hospital Millennium Medical College
SSA	Sub Saharan African
TASH	Tikur Anbessa Specialized Hospital

Abstract

Background: Breast cancer is the most common cancer among women and a leading cause of cancer deaths, especially in low- and middle-income countries where mastectomy is often the only treatment option. Survivors face physical and psychological challenges, making it essential to assess post-mastectomy quality of life to inform strategies and programs that reduce the challenges.

Objective: To assess the magnitude of mastectomy, post-mastectomy health-related quality of life and its predictors among breast cancer patients in Addis Ababa, Ethiopia.

Methods: The study was conducted in three public hospitals in Addis Ababa—Tikur Anbessa Specialized Hospital, St. Paul’s Hospital Millennium Medical College, and Yekatit 12 General Hospital Medical College—selected for their oncology services and high patient flow. An institution-based cross-sectional design was conducted with a sample size of 271, proportionally allocated to the hospitals and selected via simple random sampling. Data were collected through medical records and face-to-face interviews using structured tools (EORTC-QLQ- BR45 and C30) supported with an open data kit (ODK). The data are then exported and analyzed using SPSS 25, applying descriptive statistics to assess the magnitude of mastectomy and post-mastectomy health-related quality of life status and logistic regression to identify factors affecting post-mastectomy health-related quality of life.

Results: A total of 271 patients with breast cancer who underwent surgery were included in this study. The mean age is 44.86 ± 10.9 . Most of the respondents underwent mastectomy (97%), and the rest had breast-conserving surgery. The average post-mastectomy health-related quality of life score of patients with breast cancer was 64.7 (SD =15.7). Arm symptoms (AOR 5.3, 95% CI 1.26-22.39), physical function (AOR 3.3, 95% CI 1.01-10.46), emotional function (AOR 3.4, 95% CI 1.46-7.94), and social function (AOR 6.2, 95% CI 2.68-14.16) were independent predictors of poor health-related quality of life in patients with breast cancer who underwent mastectomy.

Conclusions: The magnitude of mastectomy is high, with poor post-mastectomy HRQOL among breast cancer patients in Ethiopia. Key predictors included arm symptoms, along with physical, emotional, and social functioning. These underscore the need for policymakers, healthcare providers, and patients to enhance post-surgery care and develop better strategies that improve health-related quality of life.

Key words: Breast cancer, Post-mastectomy, Health-related quality of life, Ethiopia

1. INTRODUCTION

1.1 Background of the study

In 2022, breast cancer in women was the second most prevalent cancer globally, with around 2.3 million incidences, making up 11.6% of all cancer diagnoses. It ranked as the fourth leading cause of cancer-related deaths worldwide, resulting in 666,000 fatalities, or 6.9% of all cancer mortalities. This type of cancer is most diagnosed in females and the leading cause of cancer-related mortality worldwide (1). By 2030, it is projected to result in 0.87 million deaths and 2.7 million new diagnoses each year globally (2).

Over 60% of the annual global death due to breast cancer occurs in countries with low and middle income. Sub-Saharan Africa bears an even greater load (3). According to a national evaluation, breast cancer is the most frequent cancer in our country, accounting for 9,061 (17.5%) of all cancer-related fatalities and 16,133 (20.9%) of the total cases. Due to a lack of a well-established cancer registry, the precise prevalence and incidence of cancer, particularly breast cancer is unknown in Ethiopia including sub-Saharan Africa. Nonetheless, few studies conducted in hospitals revealed that of all cancer cases, 18.3% to 33% are identified as breast cancer cases (4).

Breast cancer type and stage are important factors to consider while selecting the course of treatment. Individuals diagnosed with breast cancer frequently receive multiple forms of treatment. Currently available options include hormonal therapy, biological therapy, chemotherapy, radiation therapy, and surgery (5). When treating resectable breast cancer, surgery is the main treatment option. In some regions of the world, such as Africa, where resources for complementary adjuvant therapy are scarce, mastectomy may be the only available treatment choice (6).

Quality of life related to health is currently acknowledged as a necessary health outcome that needs to be considered while managing patients holistically (2). It is essential to predict the sustained quality of life related to health for cancer patients as their care involves multiple professionals who may not be fully aware of the long-term effects of their actions. Clinical characteristics and demographic variables, such as pathologic T-staging, educational attainment, marital status, and adjuvant treatment may influence the quality of life of patients who have cancer (7).

1.2 Statement of the problem

Breast cancer is a significant public health concern in Ethiopia, accounting for about more than 30% of diagnosis of cancer in female and it is the leading cause of illness and death (3, 8). Quality of life which is related to health is becoming an important measure for evaluation of cancer patients' management and outcome. Breast cancer patients have a higher likelihood of facing reduced quality of life during active cancer treatment and phases of cancer care during survivorship (8).

The prognosis of patients with breast cancer in Ethiopia is low, partly due to the advanced clinical stages of the disease at the time of diagnosis. Furthermore, there are very few advanced diagnostic and treatment modalities available (3). For instance, our country's service for radiotherapy access has not met the recommendation of International Atomic Energy Agency's, which is four machines for one million people, operating two functional radiotherapy machines for a population of 133 million (3, 5, 9). Hence the lack of available facilities that provide radiotherapy and late stage presentation of patients have made mastectomy as the preferred treatment choice in Ethiopia (3).

The decision to undergo mastectomy poses significant challenges for many women, as breasts are deeply tied to notions of beauty, femininity, and motherhood. Losing a breast can symbolize the loss of these aspects, leading to various physical and psychological issues, including diminished self-confidence and negative body image. This dissatisfaction may result in reluctance to undress, feelings of reduced sexual appeal, and impaired social interactions. Consequently, women may experience increased anxiety, depression, low self-esteem, poor health, and social isolation, ultimately affecting their quality of life (10).

In Ethiopia, both younger and elderly women often decline mastectomy, leading to delays in seeking surgical options (9). Alarming, 1 out of 5 breast cancer patients do not undergo surgery, with half of these cases attributed to refusal and subsequent disappearance (11). This situation highlights a critical gap in understanding the factors influencing these decisions, as existing research on post-mastectomy quality of life related to health (HRQoL) among patients with breast cancer in the region as well as countrywide is limited (2, 6). Most studies conducted so far have failed to assess the predictors of HRQoL specifically for these patients. Therefore, in this study we aim to address such gaps by assessment of magnitude of mastectomy, evaluating post-mastectomy HRQoL among breast cancer patients in Addis Ababa, Ethiopia, and offering valuable insights into the field of oncology in Ethiopia.

1.3 Rationale of the study

Mastectomy is a common surgical procedure for breast cancer, yet its impact on patients' quality of life related to health (HRQoL) is under-researched in our country. Therefore, we have understood that attempting to conduct this study in a multicenter setup where there is oncology department addresses the issue of representativeness. The more the status of HRQoL after mastectomy and factors associated with it are known in breast cancer patients, the better healthcare givers will tailor interventions to meet the specific demands of these patients.

1.4 Significance of the study

Breast cancer becomes a serious public health concern in Ethiopia, and most of the patients are being treated with mastectomy, given the nascent state of alternative treatment modalities in our country. It is important to evaluate the quality of life related to health of patients with breast cancer who have undergone mastectomy. This assessment can support breast cancer women who may not fully understand how surgery affects their HRQoL and how to minimize its impact. As a result, some women may struggle to accept the treatment and choose to live with the affected breast tissue instead. Identification of HRQoL status & its predictors in patients treated with mastectomy helps health care providers plan a comprehensive management option. Showing the burden supported by evidence help policy makers forward useful strategies to mitigate the negative impacts on HRQoL. Furthermore, it provides baseline information for future researchers in this area.

2. LITERATURE REVIEW

World Health Organization definition of Quality of Life (QoL) is "a person's perception of their situation in life relating to their goals, standards, expectations, and worries, along with cultural and value systems they are part of" (12). Research indicates that although physical performance improved during the 18-month cancer therapy, factors such as body image, emotional control, and other quality of life indicators do not show significant improvement even 18 months after therapy (6).

2.1 Global Burden of breast cancer

Nearly one out of every four cancer incidence and one out of every six cancer mortality among women worldwide are caused by breast cancer, with Australia/New Zealand, Northern America, France, and Northern Europe having the highest new cases, which are four times higher than those in Middle Africa and South-Central Asia. Women who reside in transitioned nations have much lower mortality rates (11.3 vs. 15.3 per 100,000, respectively), although they have significantly higher incidence rates (54.1 vs. 30.8 per 100,000, respectively) than women who live in transitioning countries. Melanesia has the highest death rates. Together with Western Africa and Micronesia/Polynesia, Fiji has greatest death rate in the world (1).

The diagnosis of breast cancer is very stressful, and it affects every life aspects which significantly lowers the patient's quality of life. There exist various management approaches for patients having breast cancer, and their effect can be assessed through progression free survival, overall survival, overall response of radiography (ORR), and quality of life related to health (HRQOL). While these measurements fail to consider patient's view point into account, quality of life related to health is a self-assessment approach that evaluates the patient's health condition (13).

Because of the late stage of cancer during diagnosis, in India, mastectomy is mostly prevalent surgical management for patients having breast cancer. Following a mastectomy, study participants' emotional and social functioning was negatively impacted by a feeling of lost femininity and beauty. Their feelings of fear and melancholy were exacerbated by the quick diagnosis, costly tests, and surgical treatment. Additionally noted were moderate degrees of arm soreness, weariness, and discomfort. These results align with research evaluating quality of life following mastectomy conducted in Iran and other study in India (14).

2.2 Magnitude of mastectomy in patients with breast cancer

A population-based study in the United States of America highlights patterns in mastectomy methods and reconstruction after mastectomy states that in the cohort study from 2004–2005, 64% received a modified radical mastectomy, 35% had simple total mastectomy, and 0.2% of patients underwent a nipple sparing mastectomy. In contrast, the cohort from 2012–2014, showed that 34.1% received a modified radical mastectomy, 61.8% underwent simple total mastectomy while 3.5% of patients had a nipple sparing mastectomy(15).

A 10-year retrospective review which was performed in some institution in Singapore indicates among 2244 women who received curative surgery for the diagnosis of non-metastatic breast cancer, mastectomy rates remained high, fluctuating between 43 to 59 %. Older women, large tumor size, clinical nodal involvement, and those presenting with symptoms were more likely to undergo mastectomy (16).

Another five-year retrospective study which assesses the impact of cancer and use of local surgical treatment services in rural hospitals in Ethiopia demonstrates that 85% of mastectomies were performed which was the most carried out surgical intervention, corresponding with its greatest prevalence (11).

2.3 Sociodemographic factors

In a study which aims to determine the life quality of Nepalese women after mastectomy, there exist a significant association between occupation and global health status ($P=0.033$), body image ($P=0.003$) and physical functioning ($P=0.013$). However, none of the independent factors showed any association with role functioning. On the other hand, age is significantly associated with body image ($P=0.000$), emotional functioning ($P=0.000$), and sexual functioning ($P=0.000$). Additionally, educational attainment has shown significant association with emotional functioning ($P=0.008$) and cognitive functioning ($P=0.002$) (17).

A facility-based cross-sectional study at done at St Paul's Hospital Millennium Medical College to assess to evaluate the quality-of-life related to mastectomy in female breast cancer patients showed a significant association between body image and all the sociodemographic variables such as age (0.044), occupation (0.013), education (0.044), marital status (0.005), residency (0.013) and parity (0.013). Future perspective and sexual functioning have statistically significant association with age, occupation, and residency whereas sexual enjoyment has no association with any of the mentioned variables (6).

Another study from Ethiopia, Amhara region found that patients with breast cancer who are not married are 2.59 times high likely to experience low QoL in comparison to the married individuals. Breast cancer patients having low economic status are 2.39 times high likely to report a low QoL than those who are wealthy. Additionally, non-housewives are 3.25 times high likely to report poor QoL in comparison to their counterparts (18).

2.4 Clinical factors

Researchers found an association between QoL and Arm problems such that breast cancer patients who underwent mastectomy are more likely to complain of an arm problem than their counterparts (19).

Studies from Germany and Nepal underscored those patients with no comorbid illnesses had better quality of life than those with comorbidity. They not only exhibited better physical and cognitive functioning ($P=0.041$), but also reported lower levels of depression and fewer limitations in their roles (17, 19).

Patients with breast cancer who complained of dyspnea were at a 3.48 fold increased experience of poor quality of life than those breast cancer patients who did not experience dyspnea with AOR of 3.48, and a 95% CI: 1.79–6.79) (18).

Researchers from Nigeria and China have found a significant association between emotional functioning and the quality of life of breast cancer patients following surgery such that impact on individual's quality of life is high if their emotional functioning score is low(20, 21).

According to a study in Turkey, patients having late-stage breast cancer exhibited lower levels of physical, social, and sexual function compared to those with early-stage of cancer, they also reported more arm symptoms and pain. However, the study does not observe significant differences in global health status or quality of life among patients at various disease stages (22).

Research in Norway and Germany highlights that arm complications following breast surgery significantly impact health-related quality of life (HRQoL). Frequent problems like pain, arm weakness, restricted movement, and increased physical discomfort have been consistently reported, adversely affecting patients' physical well-being(23, 24).

2.5 Treatment characteristics

A study done in India which aimed to evaluate the quality of life of breast cancer patients going through different treatment modalities showed that patients who are taking chemotherapy

exhibited better emotional function (43.8%) as compared to those undergoing surgical treatment and radiation therapy. In contrast, surgery patients demonstrated better social functioning (46.5%). Radiation patients struggled with lower social functioning (56.9%). Across all treatment modalities, poor sexual functioning was a common issue, affecting 75-85% of patients (14).

A study carried out by Dempsey and his colleagues indicate while the timing and type of breast reconstruction did not significantly affect HRQOL scores over time, informed choice regarding reconstruction options emerged as a potential independent factor contributing to sustained HRQOL (25).

Furthermore, a study in Ethiopia showed QoL of breast cancer patients who received more than three cycles of chemotherapy is 2.4 times higher than that of those who received less than or equal to three cycles of chemotherapy (OR = 2.4, $p < 0.005$) (26).

2.6 Quality of life of patients with breast cancer following mastectomy

Findings showed that while post-MRM(modified radical mastectomy) patients performed better in emotional functioning and future prospects, BCS patients fared better one year after surgery in terms of role functioning, physical function, dyspnea, body image, sexual enjoyment and global health status ($p < 0.05$) (27).

A study in Germany on predictors of poor quality of life in breast cancer patients states that when compared to patients who had mastectomy, those, breast conserving treatment (BCT) was performed had a seven-fold higher likelihood of having a positive body image score (19).

According to findings in East Africa, 99 % of breast cancer patients get a mastectomy because there are no other treatment options available. These treatments might have both psychological and physical repercussions. Following surgery, breast cancer survivors (BCS) frequently experience psychological changes such as a decline in quality of life, body image dissatisfaction, and difficulty regulating their emotions, as well as physical changes like hair loss and sexual difficulties (6, 28).

2.7 Conceptual framework

The conceptual framework is modified and adopted from different literatures. We have the outcome variable which is the post-mastectomy health-related quality of life at the center and the independent variables classified as sociodemographic variables, clinical-related variables, and treatment-related variables at the top and bottom of the dependent variable. Single-headed arrows with black color indicate the relationship that exists between the independent and the outcome variable that will be assessed in this research. Double-headed broken arrows with the color red are used to represent relationships between variables that will not be evaluated in this study.

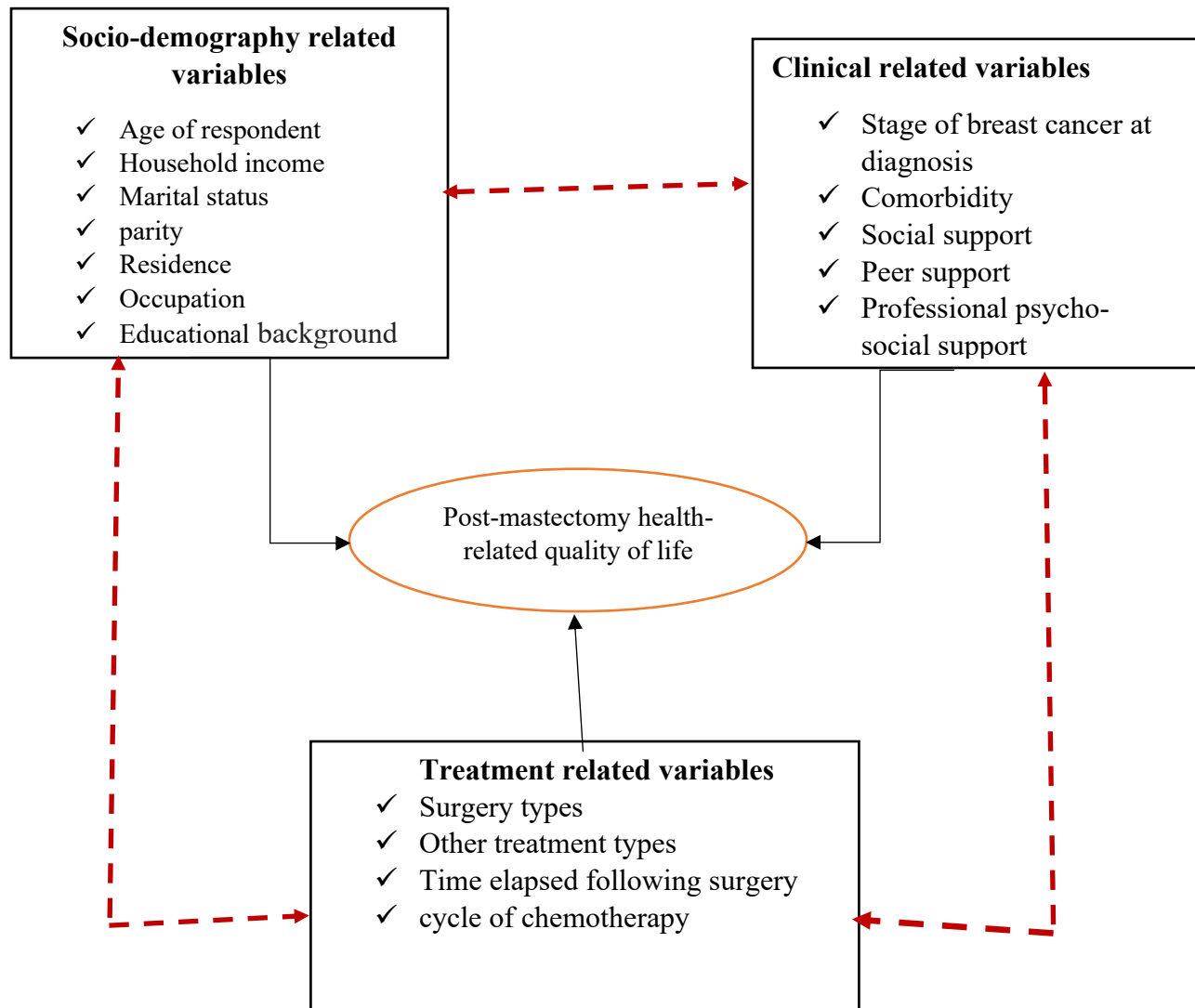


Figure 1, a schematic presentation of a conceptual framework for HRQoL of patients with breast cancer post-mastectomy, modified and adopted from the literature review (1-3).

3. OBJECTIVES

3.1 General Objective

To assess the magnitude of mastectomy, post-mastectomy health-related quality of life and its predictors among patients with breast cancer in Addis Ababa, Ethiopia, 2024/25.

3.2 Specific Objectives

- To assess the magnitude of mastectomy in Addis Ababa, Ethiopia, 2024/25
- To determine post-mastectomy health-related quality of life status of breast cancer patients in Addis Ababa, Ethiopia, 2024/25
- To assess the factors associated with post-mastectomy health-related quality of life in Addis Ababa, Ethiopia, 2024/25

4. METHODOLOGY

4.1 Study area and period

The study was conducted in three public hospitals in Addis Ababa, namely Tikur Anbessa Specialized Hospital St. Paul's Hospital Millennium Medical College, and Yekatit 12 Hospital Medical between, January-March 2025.

Tikur Anbessa Specialized Hospital is the largest referral and teaching hospital in Ethiopia which provides comprehensive oncology services. Currently, it is one of the three radiotherapy centers in the country that has two radiotherapy machines, 39 inpatient beds, five oncologists, 23 oncology nurses, 4 medical physicists, 1 palliative care specialist and 9 residents (29, 30). Data from the past three months record showed that nearly 460 patients with breast cancer after surgery were followed at this hospital.

St. Paul's Hospital Millennium Medical College (SPHMMC) is the second referral and teaching hospital offering cancer treatment next to TASH. For the future the hospital is planning to establish comprehensive cancer care including nuclear medicine which will have a total of 250 beds and five radiotherapy machines (31). According to information obtained from the oncology department, reports from the past three-month indicate that approximately 300 breast cancer patients have undergone surgery.

Yekatit 12 general Hospital Medical college is in Arada Sub City, Addis Ababa, Ethiopia. It was established in 1923 E.C. With the aim of sharing the burden of cancer treatment centers in Addis, it has been providing an oncology treatment since 2022 (32). Three-month reports since the beginning of this year showed a total of 75 breast cancer patients who had surgery.

4.2 Study Design

An institution based cross sectional study design was used

4.3 Target population

The target population were all patients with breast cancer who underwent surgery in Ethiopia.

4.4 Source Population

All patients with breast cancer who underwent surgery and had treatment at bigger referral hospitals in Addis Ababa.

4.5 Study Population

Patients with breast cancer who underwent surgery and had follow-up after surgery

4.6 Study unit

Patients with breast cancer who underwent surgery, fulfilled the inclusion criteria provided the information during the data collection period between, January-March 2025.

4.7 Inclusion criteria

Female breast cancer patients aged 18 years or older, who underwent breast cancer surgery irrespective of receiving other treatments for cancer, and who were undergoing post-treatment follow up were included in this study.

4.8 Exclusion criteria

Patients with breast cancer who were critically ill to respond, absent dates related to pathological diagnosis & cancer stage, patients who had mastectomy for nonmalignant conditions, and who were newly diagnosed for breast cancer were not included in the study.

4.9 Sample size determination

Sample size of the 1st specific objective: The calculation is based on a formula of single population proportion. The 95% confidence interval ($Z_{\alpha/2} = 1.96$), margin of error 3% and proportion of mastectomy 93.9% taken from a study in Jimma, southwestern Ethiopia (33).

$$\begin{aligned}n_1 &= (Z_{\alpha/2})^2 p(1-p) / d^2 \\&= 3.8416(0.939)(0.061) / 0.0009 \\&= 0.22004 / 0.0009 \\&= 244\end{aligned}$$

Sample size of the 2nd specific objective:

Sample size for the 2nd specific objective: The calculation is based on a single population mean formula. The 95% confidence interval ($Z_{\alpha/2} = 1.96$), mean=57.95, SD=11.35, sample size from previous study conducted at Felegehiwot hospital=198 (2).

$$n = \frac{(z_{\alpha/2})^2 \cdot \sigma^2}{d^2} \quad d = (SD / \sqrt{n}) (Z_{\alpha/2})$$

$$n_2 = (1.96)^2 (11.35)^2 / (11.35 / \sqrt{198})$$

$$= (3.8416) (128.823)/(1.58)^2$$

$$=198.3$$

Sample size for the 3rd objective:

The sample size calculation is based on a double population proportion formula. The 95% confidence interval (Z=1.96), AOR=2.4, power 80%, and (P1 = 64.8% and P2 = 35.2%)

p1 = 64.8% (proportion of breast cancer patients who took ≤ 3 cycles of chemotherapy, taken from a study done in TASH) (26)

p2 = 35.2% (proportion of breast cancer patients who took > 3 cycles of chemotherapy, taken from a study done in TASH) (26)

n₃= 104 (Calculated using Epi info)

The 95% confidence interval (Z=1.96), AOR=3.8, power 80%, and (P1 = 20.5% and P2 = 38.4%) (26)

p1=38.4% (proportion of patients breast cancer whose income is ≤ 800)

p2= 20.5% (proportion of patients with breast cancer whose income is b/n 1801–4000)

n₃= 220 (Calculated using Epi info)

The 95% confidence interval (Z=1.96), AOR=1.6, power 80%, and (P1 = 14.2% and P2 = 29.7%) (26)

p1=29.7% (proportion of breast cancer patients who're unable to read & write)

p2=14.2% (proportion of breast cancer patients whose educational status is College and above)

n₃= 246 (Calculated using Epi info)

As we have calculated for each of the objectives, the 3rd objective's sample size became the highest, so we took it as our final sample size by adding 10% non-response rate.

$$\mathbf{n_{final}=246+10\%}$$

$$\mathbf{=271}$$

Therefore, 271 breast cancer patients who underwent breast surgery were included in this study.

4.10 Sampling Technique

Three public hospitals (Tikur Anbessa Specialized Hospital, St. Paul's Hospital Millennium Medical College, and Yekatit 12 General Hospital Medical College) were selected for their oncology service provision and high patient flow. Based on a proportion of the patient load on each facility, the participants of the study were selected using a simple random sampling method from a sampling frame that was prepared from the follow-up registry of oncology units at each hospital. The calculated sample size was then proportionally allocated for the selected hospitals. The number of patients with breast cancer on whom mastectomy was performed and were being followed at an oncology unit at the selected hospitals was 835. To allocate participants proportionally, we calculate the sampling fraction (sampling fraction = sample size/sampling frame = $271/835 = 0.325$). Using standardized questionnaires, such as EORTC QLQ-C30, EORTC QLQ-BR45, the necessary data were collected.

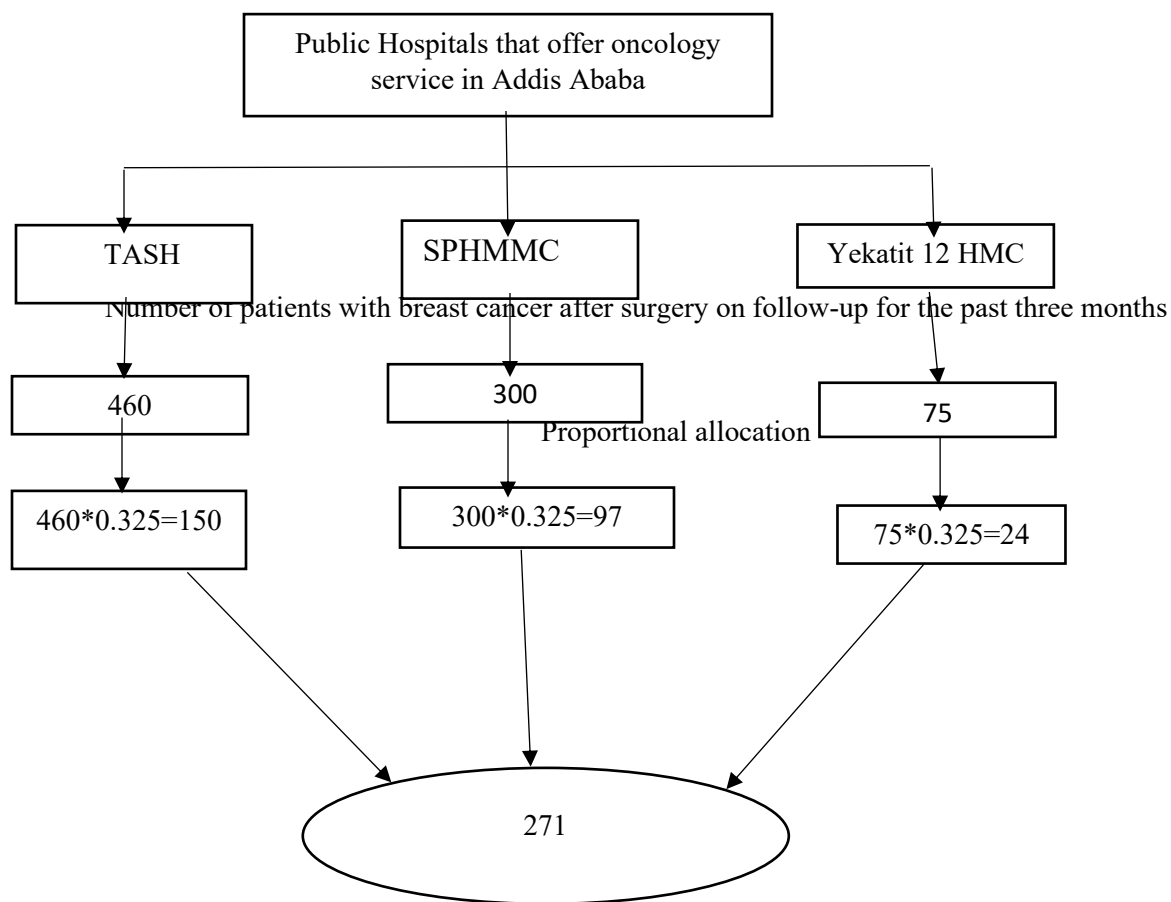


Figure 2, Schematic presentation of the sampling procedure, in three bigger teaching and referral hospitals in Addis Ababa, Ethiopia, 2025.

4.11 Data collection tools and methods

The data were collected from medical record forms (to retrieve information regarding patient characteristics, clinical characteristics, and their treatment) using a data abstraction form and face-to-face interview with structured formats using validated and reliable tools. European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 (34) and the updated breast cancer-specific tool, EORTC QLQ-BR45 were used to assess specific factors of breast cancer patients' QoL (35).

The EORTC QLQ-C30 serves as a core questionnaire designed to evaluate the QoL of cancer patients. It includes three symptom scales that assess pain, fatigue, and nausea/vomiting as well as five functional scales—physical, role, cognitive, emotional, and social. Additionally, there is a Global Health Status /Quality of Life scale. The individual items capture symptoms such as dyspnea, constipation, appetite loss, diarrhea, sleep disturbances, and financial difficulties (34). The questionnaire is recognized as reliable and valid to evaluate QoL in patients with cancer in Ethiopia (36).

Meanwhile, the EORTC QLQ-BR45 is a component specifically for breast cancer that is utilized alongside the EORTC QLQ-C30 questionnaire. It includes items from the QLQ-BR23 and an extra 22 items: a symptom scale containing 20 items and two breast satisfaction scale items. The symptom scale is further divided into three subscales: skin/mucosa, endocrine therapy, and endocrine sexual scales. It is designed to evaluate symptoms specific to breast cancer arising from the illness or newer treatment modalities. The breast satisfaction scale evaluates patients' contentment with the skin appearance and the cosmetic outcomes of the operation (35). The Amharic version has been shown to be both valid and reliable for measuring quality of life (QoL) in patients with breast cancer (37).

Eligible patients were approached and invited to participate while they come for their regular follow-up at oncology center of each hospital. Each patient received a written consent form to be involved in the study and the necessary information were taken from their chart or EMR. After thoroughly explaining the purpose of collecting data from them and ensured their willingness, data were collected using validated and reliable tools, such as European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 and the updated breast cancer-specific

tool, EORTC QLQ-BR45. Data were collected through face-to-face interviews and chart review using data abstraction form by trained nurses.

4.11.1 Variables

4.11.1.1 Dependent variable

Post-mastectomy health-related quality of life

4.11.1.2 Independent variables

Socio-demographic variables: age, marital status, household income, educational background, residence, parity, and occupation.

Clinical related variables: Stage of breast cancer at diagnosis, comorbidity, social support, peer support, and professional psycho-social support.

Treatment related variables: Type of mastectomy, time elapsed following surgery, type of treatment, cycles of chemotherapy

4.11.2 Operational definition

Mastectomy: is a surgical procedure that involves the complete removal of one or both breasts, along with surrounding tissues (38)

Health-related quality of life : refers to an individual's perceived physical and mental health status, encompassing various dimensions of well-being such as emotional reactions to events in life, sense of fulfillment, and satisfaction with work and personal encounters with people (2) , it encompasses social functioning, and perceived general health status. It will be measured using the EORTC QLQ-C30 and the EORTC QLQ-BR45 questionnaires, which assess various aspects of quality of life related with health, including symptoms, general health condition, body image, and psychosocial impacts. Both tools are validated and reliable (34-37).

Body image: mental image of one's body, perspective on physical appearance, and condition of health, completeness, normal functioning, and sexuality (2)

4.14 Data analysis

Prior to analysis, the collected data using open data kit (ODK) were checked for completeness and internal consistency, then exported and analyzed with SPSS 25. Descriptive statistics were used for describing the percentage and variable distribution for the first specific objective. For the second specific objective, we utilized descriptive statistics such as mean score and standard deviation to describe the status of HRQoL, and, for the third specific objective, logistic regression

analysis was conducted for determination of factors affecting the HRQoL of patients who underwent mastectomy for breast cancer.

The scoring process for the EORTC QLQ-C30 and EORTC QLQ-BR45 was conducted following the guidelines outlined in the EORTC QLQ-C30 scoring manual (39). The raw scores, as well as the individual item measures, were converted into a range of scores from 0 to 100. For all scales, the raw score is calculated as the average of single item measures, followed by a linear transformation to a range of 0–100 to derive the score for each scale (8, 26, 34). A high score on a functional scale shows a good level of functioning; a high score on the global health status or quality of life scale indicates a quality of life that is high, while a greater score on a scale of symptoms signifies a higher symptom level.

In this study, after adopting a cutoff from a previous study done at TASH, each scale was dichotomized into “Poor” and “Good” in which a score below 75 for functional and global health (HRQoL) scales are used as Poor and scores above 25 have been used as Good for symptom scales.(40)

Each independent variable was regressed with the outcome variable and variable having a P value < 0.25 were entered together into multivariable logistic regression. Those variables with a P value < 0.05 were considered as significantly associated with the outcome variable. Collinearity was checked using VIF, and the Hosmer & Lemeshow test was used to check how well the logistic regression model fits the data.

4.15 Data quality assurance

We used validated and reliable tools to collect the data. These tools helped us to capture the specific variables relevant to our study. A pre-test was conducted on 14 patients to assess the clarity and relevance of the tools and after that, the necessary corrections were done for ambiguous questions before the actual data collection was started. Four nurses collected the data, and 3 public health officers supervised them. Training was provided for data collectors and supervisors by the researcher for ensuring that they are familiar with the objectives, methodology, and ethical considerations of the study. Detailed instructions on how to interview using the tools, including how to approach participants, obtain informed consent, and ensure confidentiality were given. Strategies for addressing potential challenges during data collection, such as participant non-compliance or misunderstandings about the questions was trained. The supervisors had frequent

visits to data collection sites to monitor the collection process. Finally, the collected data were checked for its completeness.

4.16 Ethical clearance

Ethical clearance was obtained from Addis Ababa University School of public health (SHP/452/2025), SPHMMC (pm23/603) and Yekatit 12 Hospiital Medical College (RPO/920/25). The letter of clearance was given to the selected oncology centers in Addis Ababa for permission and cooperation to conduct the study. Informed written consent was obtained from all participants after they were informed about confidentiality, benefits, risks, and the study's purpose. Participants' names were not included on the questionnaire, and after the data were entered in the computer, it was coded to maintain anonymity. The participants were told that they would not suffer any consequences if they chose to not participate in the study. Information provided regarding the absence of any direct benefit. Participants were told that if they want to refuse to give the data they will not be forced and they will have full right to withdraw from the interview any time when they felt comfortable.

4.17 Dissemination of the results

The result of this study is going to be submitted and presented to the School of Public Health at Addis Ababa University as partial fulfillment for the degree of Master of Public Health in Epidemiology and Biostatistics. We plan to disseminate these results to TASH, SPHMMC, Yekatit 12 General Hospital Medical College, Addis Ababa City Administration Health Bureau and the Federal Ministry of Health. Furthermore, we aim to publish our findings in international peer-reviewed journals and present them at relevant conferences.

5. Results

5.1 Sociodemographic characteristics of patients with breast cancer who underwent surgery

A total of 271 patients with breast cancer who underwent surgery with a response rate of 100% were included in this study. The mean age is 44.86 (SD $\pm$ 10.9) and three forth 234 (76.8%) of the patients were from rural areas. A quarter 72 (26.6%) of patients attended college and above where as 78 (28.8%) have no education. One hundred eighty-six (68.6%) of the patients were married while 36 (13.3%) were single (Table 1).

Table 1, Socio-demographic characteristics of patients with breast cancer in three bigger teaching and referral hospitals in Addis Ababa, Ethiopia, 2025

Variable	Category	Frequency (n=271)	Percent (%)
Age	≤ 50	201	74.2
	> 50	70	25.8
Residence	Urban	63	23.2
	Rural	208	76.8
Educational background	College and above	72	26.6
	Secondary education	69	25.5
	Primary education	52	19.2
	No education	78	28.8
Marital status	Single	36	13.3
	Married	186	68.6
	Divorced	22	8.1
	widowed	27	10.0
Occupation	Government employee	49	18.1
	Private employee	88	32.5
	Farmer	4	1.5
	Housewife	130	48.0
Parity	Nulliparous	42	15.5

	1 - 4 children	204	75.3
	>4 children	25	9.2

5.2 Clinical characteristics of patients with breast cancer who underwent surgery

Most of the patients were diagnosed with stage II (39.9%) and stage III (32.5%) disease. Majority of the respondents had modified radical mastectomy (MRM) (93.0%) followed by toilet mastectomy (3.3%). Among the patients, 61.3% reported that it has been more than six months since their surgery was performed. For 135 (49.8%) patients' mastectomy was done on the left side. 49.1% of patients had Hypertension and 24.6% had Diabetes Mellitus (Table 2).

Table 2, Clinical characteristics of patients with breast cancer in three bigger teaching and referral hospitals in Addis Ababa, Ethiopia, 2025

Variables	Category	Frequency (n=271)	Percent (%)
Duration after surgery	≤ 6 months	105	38.7
	>6 months	166	61.3
TNM stage of cancer	Stage I	13	4.8
	Stage II	108	39.9
	Stage III	88	32.5
	Stage IV	62	22.9
Type of Surgery	Simple (total) mastectomy	2	0.7
	Modified radical mastectomy	252	93.0
	Toilet Mastectomy	9	3.3
	BCS	8	3.0
Side of mastectomy	Right breast	134	49.4
	Left breast	135	49.8
	Both	2	0.7
Other cancer treatment taken	Yes	258	95.2
	No	13	4.8
Types of Comorbid illness	Hypertension	28	49.1
	Diabetes mellitus	14	24.6
	HIV	6	10.5
	Other	6	10.5
	Heart disease	3	5.3

5.3 Mean score and Standard Deviation of EORTC-QLQ-C30 and EORTC-QLQ-BR-45 Components for breast cancer patients who underwent mastectomy

The mean score of global health status (quality of life) of the study participants was 64.7 (SD $\pm$ 15.7). One hundred ninety-four (71.6%) participants had scored less than 75; hence, they have poor global health status/ health related quality of life (Table 3).

On the EORTC QLQ C-30, the functional scale score of study participants ranged between 81.3 $\pm$ 18.3 for physical function to 61.9 $\pm$ 28.9 for social function. The mean score of symptom scales ranged from 59.9 $\pm$ 30.9 for financial difficulties to 0.8 $\pm$ 5.7 for diarrhea (Table 3).

On the EORTC QLQ-BR-45, majority of the study participants scored good on sexual functioning but poor regarding sexual enjoyment and other functional scales. Almost all (99.6%) of the patients were dissatisfied with the appearance of their breasts. High symptom scales were reported for upset by hair loss and arm symptoms. On the contrary participants were least affected by the rest of the symptom scales (Table 3).

Table 3, Mean score and Standard Deviation of EORTC-QLQ-C30 And EORTC-QLQ-BR-45 of patients with breast cancer in three bigger teaching and referral hospitals in Addis Ababa, Ethiopia, 2025

EORTC QLQ-C30	Items	Mean score $\pm$ SD	EORTC QLQ-BR45	Items	Mean score $\pm$ SD
Functional scale			Functional scale		
Physical function	1-5	81.3 $\pm$ 18.3	Body image	9-12	56.7 $\pm$ 34.3
Role function	6,7	85.7 $\pm$ 23.7	Sexual functioning	14, 15	80.9 $\pm$ 26.4
Emotional function	21-24	64.7 $\pm$ 23.9	Sexual enjoyment	16	54.2 $\pm$ 27.9
Cognitive function	20,25	86.2 $\pm$ 16.4	Future perspective	13	42.8 $\pm$ 31.6
Social function	26,27	61.9 $\pm$ 28.9	Breast satisfaction	44, 45	27.1 $\pm$ 18.5
Global Health Status (GHS)	29,30	64.7 $\pm$ 15.7			
Symptom scale			Symptom scale		

Fatigue	10, 12,18	22.1 ± 23.1	Systemic therapy side effects	1–4, 6, 7, 8	17.97 ± 16.5
Nausea and vomiting	14, 15	12.7 ± 17.2	Breast symptoms	20–23	6.3 ± 9.9
Pain	9, 19	20.2 ± 23.3	Arm symptoms	17, 18, 19	77.8 ± 18.3
Dyspnea	8 16	6.9 ± 15.3	Upset by hair loss	5	51.9 ± 41.9
Insomnia	11	26.4 ± 27.4	Endocrine therapy scale	24–26,33–39	8.8 ± 9.6
Appetite loss	13	25.3 ± 31.6	Endocrine sexual scale	40–43	2.1 ± 8.6
Constipation	16	14.6 ± 23.9	Skin mucosis scale	27-32	10.4 ± 11.1
Diarrhea	17	0.8 ± 5.7			
Financial difficulties	28	59.9 ± 30.9			

5.4 Result of Bivariate Logistic Regression Analysis of Predictors of poor global health status (HRQoL) of patients with breast cancer who underwent mastectomy

The effect each independent variable has on global health status (Quality of Life) was examined using bivariate logistic regression. Accordingly, residence, educational background, occupation, parity, cycle of chemotherapy, duration after surgery, comorbidity, the need for breast reconstruction, all the functional scales for the EORTC-QLQ-30 and most of the symptom scales except diarrhea, the functional scales except sexual enjoyment on the EORTC-QLQ-BR-45 tools and the symptom scales such as systemic therapy, arm symptoms, upset by hair loss and skin mucosis became significant predictors of poor health-related quality of life after mastectomy.

5.5 Result of Multivariable Logistic Regression Analysis for significant Predictors of poor GHS(HRQoL) after mastectomy

The multivariable logistic regression analyzed variables that had a significant association in the binary logistic regression analysis showed that arm symptoms, physical functioning, emotional functioning, and social functioning become important factors for poor health-related quality of life after mastectomy.

Patients with breast cancer who underwent mastectomy and have arm symptoms are 5 times more likely to experience poor quality of life as compared to their counterparts with an AOR of 5.3, and

a 95% CI 1.26-22.39. Those patients having good physical functioning are 3 times more likely to experience good quality of life than patients who have poor physical functioning with an AOR of 3.3, and a 95% CI 1.01-10.46.

According to our finding, emotional function is significantly associated with poor quality of life related to health, in which patients who performed poor in emotional function are 3.4 times more likely to have poor quality of life in relation to health with and AOR of 3.4, and a 95% CI 1.46-7.94. Similarly, patients with breast cancer who underwent mastectomy with poor social functioning showed poor health-related quality of life (AOR 6.2, 95% CI 2.68-14.16).

Table 4, Multivariable logistic regression of predictors of global health status (HRQOL) of patients with breast cancer in three bigger teaching and referral hospitals in Addis Ababa, Ethiopia, 2025

Variable	Category	GHS (QoL)		COR with (95% CI)	AOR with (95% CI)	P value
		Good N (%)	Poor N (%)			
Arm symptoms	Good	70 (26.6%)	110 (41.8%)	1.0		0.023
	Poor	3 (1.1%)	80 (30.4%)	16.970 (5.16-55.83)	5.3 (1.26-22.39)	
Physical function	Good	67 (25.5%)	114 (43.3%)	1.0		0.047
	Poor	6 (2.3%)	76 (28.9%)	7.444 (3.08-18.02)	3.3 (1.01-10.46)	
Emotional function	Good	52 (19.8%)	51 (19.4%)	1.0		0.005
	Poor	21 (7.9%)	139 (14.8%)	6.749 (3.71-12.29)	3.4 (1.46-7.94)	
Social function	Good	49 (18.6%)	35 (13.3%)	1.0		0.000
	Poor	24 (9.1%)	155 (58.9%)	9.042 (4.91-16.65)	6.2 (2.68-14.16)	

6. Discussion

This study examined the magnitude of mastectomy, HRQoL status and its predictors among patients with breast cancer who underwent mastectomy in Addis Ababa, Ethiopia. After controlling the effect of potential confounders, the multi-variable analysis of this study concludes that arm symptom, physical function, emotional function, and social function became an important factor for poor health-related quality of life after mastectomy.

Despite the continuing advancement in diagnosis and treatment of cancer, patients with breast cancer are facing significant challenges in their health-related quality of life. 71.6% of patients with breast cancer who underwent mastectomy had poor QoL which is higher than the study conducted in Amhara region, Ethiopia (68.4%)(18). Additionally, their global health status/HRQoL mean score was 64.7 (SD $\pm$ 15.7) which indicates poor HRQoL. The finding was nearly identical to those studies carried out at Black Lion Specialized Hospital (65.6)(29) and also in Turkey (64.43)(30). However, it is lower than the study performed in Amhara region 70.6 (SD) $\pm$ 13.9(27).

The magnitude of mastectomy in our study is 97%, and majority of women had modified radical mastectomy which is higher than the study carried out in South-Africa 79.6%(41). Whereas study in northern Ethiopia found the magnitude of mastectomy to be 68% and, similarly more than two-thirds of women had modified radical mastectomy(42). Another study from Ethiopia showed the magnitude of mastectomy as 91.1%(18). East African reports indicate 99% of breast cancer patients get a mastectomy because there are no other treatment options available(6).

In developed countries, most women present with an early-stage of breast cancer and are suitable for breast-conserving surgery due to effective screening and awareness programs. In contrast, many women in Africa require radical mastectomy, with 50–75% presenting with an advanced disease. For example, advanced-stage presentation rates were 74% in Côte d'Ivoire and 81% in the Democratic Republic of Congo. In Eritrea and Tanzania, up to 99% of patients undergo mastectomy, often due to advanced disease and limited treatment options(43).

The predominance of modified radical mastectomy across these studies underscores its status as the primary intervention due to limited access to alternative treatment options. The variation in mastectomy rates reflect local healthcare disparities and resource availability. These reports emphasize the urgent need for improved access to comprehensive breast cancer care, including options such as breast-conserving surgery and adjuvant therapies.

The findings in this study indicated a statistically significant association between physical function and GHS (HRQoL) among breast cancer patients who underwent mastectomy. Patients who reported better physical functioning are 3.3 times more likely to experience good HRQoL as compared to those who happen to have low physical functioning. This result aligns with the studies conducted in Ethiopia and India (8, 26, 27). These consistent findings indicate that improved physical function plays a crucial role in enhancing HRQoL in patients with breast cancer. Enhanced physical functioning can lead to greater independence, reduced fatigue, and improved emotional well-being, all of which contribute greatly to a patient's overall health-related quality of life.

Our finding illustrated that there is no significant association between cycles of chemotherapy and GHS (QoL) which contrasts the study done at TASH in 2019 (26). The discrepancy could partly be explained by the difference in study location and difference in the cutoffs that we used.

Consistent with finding from prior study (27), emotional function affected the QoL of patients with breast cancer after mastectomy. In which, the odds of QoL were 3.4 times higher in patients who have good emotional functioning than those patients whose emotional function is poor. Similarly, studies conducted in Nigeria and China indicate emotional function significantly impacting the quality of life which relates to health of patients having breast cancer(20, 21).

Although many studies had found a significant association between the stage of a cancer & QoL, this study concluded that there is no evidence of association between TNM stage and GHS (QoL) among patients with breast cancer who had mastectomy. But similar with our finding, a prospective cohort study in Munich to assess predictors of quality of life of breast cancer patients showed that stage of the cancer was not a significant predictor of quality of life (19). The reason may be once the patients undergo mastectomy, physical, emotional, cognitive, and social challenges may become more similar regardless of the stage of cancer. The surgical experience and subsequent treatment might have a stronger impact on HRQoL than the stage.

The current study ascertained that those patients with breast cancer who had mastectomy and exhibited poor social functioning were six times more likely to have a reduced HRQoL than those with better social functioning. Similar findings were reported in our country as well as a cohort study done in Sydney, Australia (8, 25, 26). This suggests a strong association between social functioning & overall HRQoL which highlights the importance of psychosocial support following surgical treatment.

The study reveals that the odds of poor HRQOL was 5.0 times more in individuals who were experiencing arm symptoms compared to those patients without arm symptoms with an adjusted odds ratio of 5.3, and a p value < 0.023 . Nearly similar results were reported in studies conducted at TASH(8, 26). A cross-country review of the status of health-related quality of life in Norway and Germany, have consistently reported that the onset of arm complications after breast surgery, pain, arm weakness, poor range of motion and more severe physical discomfort, affected physical well-being and HRQoL(23, 24). This finding underscores the substantial negative impact that arm symptoms have on overall health related quality of life.

6.1 Strengths and Limitations

To the best of our robust search, this is the first study done in Ethiopia using a newly updated version of the breast cancer specific QoL questionnaire for assessing post-mastectomy HRQoL among female breast cancer patients. We have used standardized tools such as EORTC QLQ-C30 and the EORTC QLQ-BR45. Whereas, as part of cross-sectional study, we have a limitation on establishing a causal relationship. The retrospective nature of collecting information about symptom recognition might be prone to recall bias and lack of access to the detail data could have affected the measurements of study variables, but we try to minimize by using standard tools, and training the data collectors.

7. Conclusions

Our findings exhibited a high magnitude of mastectomy and poor HRQoL among breast cancer patients in Ethiopia. Additionally, the study also identified a significant association between post-mastectomy quality of life related to health (post-mastectomy HRQoL) and patients arm symptoms, and the physical functioning, emotional functioning, and social functioning. The findings underscore that individuals' arm symptoms and key domains of functional scales of the EORTC QLQ-C30 substantially influence their overall perceived health and well-being.

7.1 Recommendations

For the Ministry of Health

The Ethiopia's Ministry of Health through its policymakers, should focus on encouraging breast cancer treatment centers and health professionals to adopt a holistic approach that simultaneously addresses physical, emotional, and social factors to improve post-mastectomy HRQoL outcomes effectively up on treatment of patients with breast cancer. Develop and implement targeted interventions addressing arm symptoms to enhance post-mastectomy HRQoL.

For health care professionals in oncology center

Focus on the assessment and management of arm symptoms by conducting regular follow-ups to monitor and alleviate the symptoms

Implement structured rehabilitation programs and tailored exercise initiatives to improve physical functioning

Encourage community engagement and peer support networks to reduce social isolation and enhance social functioning

Expand access to mental health services, emotional resilience programs, and counseling to improve emotional functioning

For patients

We recommend that patients with breast cancer who had mastectomy should engage in regular physical activity and provide access to rehabilitation and physical therapy services with locally available options such as coffee gatherings, and other social activities in their neighborhood.

For researchers

Future research should capture changes in health-related quality of life (HRQoL) and the stability of its predictors over time by including follow-up assessments at multiple time points. We recommend researchers to combine quantitative data and qualitative interviews in mixed-methods approaches to improve the understanding of psychosocial and contextual factors affecting health-related quality of life and provide deeper insights into patients' lived experiences.

References

1. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2024;74(3):229-63.
2. Tewodros K. Post Mastectomy Quality of Life in Female Breast Cancer Patients in Felege Hiwot Comprehensive Specialized Hospital 2020.
3. Bawoke G, Kejela S, Alemayehu A, Bogale GT. Experience with modified radical mastectomy in a low-income country: a multi-center prospective observational study. *BMC surgery.* 2021;21:1-8.
4. Gebretsadik A, Bogale N, Negera DG. Epidemiological trends of breast cancer in southern Ethiopia: a seven-year retrospective review. *Cancer Control.* 2021;28:10732748211055262.
5. Dandena FG, Teklewold BT, Darebo TD, Suga YD. Epidemiology and clinical characteristics of breast cancer in Ethiopia: a systematic review. *BMC Cancer.* 2024;24(1):1102.
6. Abebe E, Demilie K, Lemmu B, Abebe K. Female Breast Cancer Patients, Mastectomy-Related Quality of Life: Experience from Ethiopia. *Int J Breast Cancer.* 2020;2020:8460374.
7. Soon P, Ruban S, Mo H, Lee R, Saliba L, Shah A, et al. Understanding patient choices regarding breast reconstruction after mastectomy for breast cancer. *Supportive Care in Cancer.* 2019;27:2135-42.
8. Getu MA, Chen C, Wang P, Kantelhardt EJ, Addissie A. Quality of life and its influencing factors among breast cancer patients at Tikur Anbessa specialised hospital, Addis Ababa, Ethiopia. *BMC cancer.* 2022;22(1):897.
9. Wondimagegnehu A, Teferra S, Assefa M, Zebrack B, Addissie A, Kantelhardt EJ. "How can a woman live without having a breast?": challenges related to mastectomy in Ethiopia. *BMC cancer.* 2024;24(1):60.
10. Mokhtar A, I El-Malkey M, M Zaki M, A Mostafa H. Correlation between Self-Compassion and Body-Image among Women with Mastectomy. *Benha Journal of Applied Sciences.* 2024;9(4):183-93.
11. Wondimagegnehu A, Negash Bereded F, Assefa M, Teferra S, Zebrack B, Addissie A, et al. Burden of Cancer and Utilization of Local Surgical Treatment Services in Rural Hospitals of Ethiopia: A Retrospective Assessment from 2014 to 2019. *Oncologist.* 2022;27(11):e889-e98.
12. Rai DR. Socio Economic Aspects and Quality of Life Between Mastectomy and Breast Conserving Treatment Among Early Breast Cancer Patients Attending Kidwai Memorial Institute of Oncology, Bengaluru: Rajiv Gandhi University of Health Sciences (India); 2021.
13. Bitew TD, Ayenew W, Baye T, Eshetu E. Health Related Quality of Life and Its Determinants Among Breast Cancer Patients in Africa: A Systematic Review and Meta-Analysis. 2021.
14. Khazi F, Angolkar M, Kumari S, Patil B. Assessment of quality of life among breast cancer patients undergoing different Treatment Modalities at tertiary hospitals in north Karnataka, India. *Clinical Epidemiology and Global Health.* 2024;28:101675.
15. Fraser VJ, Nickel KB, Fox IK, Margenthaler JA, Olsen MA. The epidemiology and outcomes of breast cancer surgery. *Transactions of the American Clinical and Climatological Association.* 2016;127:46.
16. Chan PM, Choo BA, Zhang T, Seah MD, Chen JJ, Lu SQ, et al. Mastectomy rates remain high in Singapore and are not associated with poorer survival after adjusting for age. *SpringerPlus.* 2015;4:1-10.
17. Maharjan M, Thapa N, Adhikari RD, Petrini MA, Amatya KS. Quality of Life of Nepalese Women Post Mastectomy. *Asian Pac J Cancer Prev.* 2018;19(4):1005-12.
18. Alem T, Nigatu D, Birara A, Fetene T, Giza M. Quality of Life of Breast Cancer Patients in Amhara Region, Ethiopia: a CrossSectional Study. *Journal of Addiction Research.* 2022;6(1):200-8.
19. Engel J, Kerr J, Schlesinger-Raab A, Eckel R, Sauer H, Holzels D. Predictors of quality of life of breast cancer patients. *Acta Oncol.* 2003;42(7):710-8.

20. Fatiregun OA, Olagunju AT, Erinfolami AR, Arogunmati OA, Fatiregun OA, Adeyemi JD. Relationship between anxiety disorders and domains of health related quality of life among Nigerians with breast cancer. *Breast*. 2017;31:150-6.
21. Tang L, Fritzsche K, Leonhart R, Pang Y, Li J, Song L, et al. Emotional distress and dysfunctional illness perception are associated with low mental and physical quality of life in Chinese breast cancer patients. *Health Qual Life Outcomes*. 2017;15(1):231.
22. Gokgoz S, Sadikoglu G, Paksoy E, Guneytepe U, Ozcakir A, Bayram N, et al. Health related quality of life among breast cancer patients: a study from Turkey. *Global Journal of Health Science*. 2011;3(2):140.
23. Smedsland SK, Falk RS, Reinertsen KV, Kiserud CE, Brekke M, Bøhn SH, et al. Burden of late effects in a nationwide sample of long-term breast cancer survivors. *Cancer*. 2023;130(1):140-9.
24. Schneeweiss A, Lux MP, Janni W, Hartkopf AD, Nabieva N, Taran FA, et al. Update Breast Cancer 2018 (Part 2) - Advanced Breast Cancer, Quality of Life and Prevention. *Geburtshilfe Frauenheilkd*. 2018;78(3):246-59.
25. Dempsey K, Mathieu E, Brennan M, Snook K, Hoffman J, Campbell I, et al. Patient-reported health-related quality of life outcomes following mastectomy for breast cancer, with immediate, delayed or no breast reconstruction: Four-year follow-up from a prospective cohort study. *The Breast*. 2023;71:122-31.
26. Hassen AM, Taye G, Gizaw M, Hussien FM. Quality of life and associated factors among patients with breast cancer under chemotherapy at Tikur Anbessa specialized hospital, Addis Ababa, Ethiopia. *PloS one*. 2019;14(9):e0222629.
27. Cherian K, Acharya NR, Bhargavan RV, Augustine P, Krishnan JK. Quality of life post breast cancer surgery: comparison of breast conservation surgery versus modified radical mastectomy in a developing country. *South Asian Journal of Cancer*. 2022;11(03):183-9.
28. Pirnia B, Homayounfar N, Hosseini N, Ebrahimi F, Haj Sadeghi Z, Malekanmehr P. The Predictive Role of Body Image and Sexual Function in Quality of Life After Modified Radical Mastectomy Regarding the Mediating Role of Emotion; A Cross Sectional Study. *International Journal of Cancer Management*. 2020;13(11).
29. Fentie AM, Mekonen ZT, Gizachew Z, Hailemariam M, Clark SM, Richardson J, et al. Chemotherapy supply chain management, safe-handling and disposal in Ethiopia: the case of Tikur Anbessa specialized hospital. *Pediatric Hematology and Oncology*. 2023;40(3):258-66.
30. Shibabaw W, Mulugeta T, Abera H, Asmare Y, Yirga T. Survival status and predictors of mortality among Breast cancer patients at Black lion specialized hospital, Adult oncology unit, Addis Ababa, Ethiopia, 2018. A retrospective follow-up study with survival analysis. *bioRxiv*. 2019:636431.
31. St. Paul Hospital starts cancer department. *Capital*. 2018.
32. Yekatit 12 General Hospital Medical College. 2024.
33. Yoseph R. Retrospective Analysis of Breast Cancer Cases Operated in Jush within Four Years Time Period, Jimma, Ethiopia. *International Journal of Sciences*. 2021;10(10):4-21.
34. Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez NJ, et al. The European Organization for Research and Treatment of Cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology. *JNCI: Journal of the National Cancer Institute*. 1993;85(5):365-76.
35. Bjelic-Radisic V, Cardoso F, Cameron D, Brain E, Kuljanic K, da Costa R, et al. An international update of the EORTC questionnaire for assessing quality of life in breast cancer patients: EORTC QLQ-BR45. *Annals of Oncology*. 2020;31(2):283-8.
36. Gadisa DA, Gebremariam ET, Ali GY. Reliability and validity of Amharic version of EORTC QLQ-C30 and QLQ-BR23 modules for assessing health-related quality of life among breast cancer patients in Ethiopia. *Health and quality of life outcomes*. 2019;17:1-8.
37. Getu MA, Wang P, Kantelhardt EJ, Seife E, Chen C, Addissie A. Translation and validation of the EORTC QLQ-BR45 among Ethiopian breast cancer patients. *Scientific Reports*. 2022;12(1):605.
38. Brunicaardi FC, Andersen DK, Billiar TR, Dunn DL, Hunter JG, Kao L, et al. *SCHWARTZ'S PRINCIPLES OF SURGERY 2-volume set 11th edition: McGraw Hill Professional*; 2019.

39. Scott N, Fayers P, Aaronson N, Bottomley A, de Graeff A, Groenvold M, et al. EORTC QLQ-C30. Reference values Brussels: EORTC. 2008.
40. Tadele N. Evaluation of quality of life of adult cancer patients attending Tikur Anbessa specialized referral hospital, Addis Ababa Ethiopia. *Ethiopian journal of health sciences*. 2015;25(1):53-62.
41. Cubasch H, Joffe M, Ruff P, Dietz D, Rosenbaum E, Murugan N, et al. Breast conservation surgery versus total mastectomy among women with localized breast cancer in Soweto, South Africa. *PLoS One*. 2017;12(8):e0182125.
42. Deressa BT, Cihoric N, Badra EV, Tsikkinis A, Rauch D. Breast cancer care in northern Ethiopia—cross-sectional analysis. *BMC cancer*. 2019;19:1-6.
43. Vanderpuye V, Grover S, Hammad N, PoojaPrabhakar, Simonds H, Olopade F, et al. An update on the management of breast cancer in Africa. *Infect Agent Cancer*. 2017;12:13.

Annexes

Annex I Patient Information sheet

Introduction: Greetings, my name is _____. I am working as data collector in a study conducted by the research team member of Addis Ababa University College of Health Sciences School of public Health for the project entitled assessment of postmastectomy quality of life and its predictors among patients with breast cancer in Addis Ababa. If you are willing, I will be having a short interview concerning this study but before that, I will briefly explain the purpose of this study. It is a thesis for the master's Program at AAU College of Health Sciences, School of Public Health

Objective of the study: Although breast cancer is becoming a major health problem in Ethiopia, and most of the patients are being treated with mastectomy, little research has been done regarding the quality-of-life assessment and their predictors. In this study, we are planning to assess the QoL of patients with breast cancer after mastectomy and its associated factors.

Benefit of the study: There is no direct benefit to the participants but accordingly the result will provide important information on addressing the problems related to QoL of patients with breast cancer after mastectomy by creating a convenient programmatic approach to give a holistic service to the respective population.

Risk of the study: Participating in this study will not have any risk or harm.

Rights of Participants: You either have full right to Participate or decline participation in this Study as participant. You may respond to all the questions, or you may not answer to questions you do not want to, and you may end the interview at any time you want. You can ask any question that is not clear for you. Participation in the study will have no implications for your relation and treatment at the hospital.

Confidentiality: Any information that we collect about you during this research will be kept confidential. Your name will not appear on the questionnaire, and once the data is entered into a computer, it will be coded to ensure anonymity. The information stored on the computer will be protected by a password. Physical documents, including consent and information forms, will be stored in a secure locked cabinet.

Person to contact:

If you have any questions, you can contact Roda Mesfin and you may ask any time you want.

Name: Roda Mesfin Haile

Phone number: +251988241385

Email: roda.mesfin@gmail.com

[: chs.irb@aau.edu.et](mailto:chs.irb@aau.edu.et)

Letter of Request:

To be filled by the Medical Directors,

I have properly examined the objectives of the study, understood that patient confidentiality is assured, and informed consent has been prepared. There will also be no risks to the participants related to the study. Therefore, I give formal permission for the study to be conducted on behalf of _____ Hospital.

Name of Medical Director: _____

Signature: _____

Date: _____

Annex II-Patient Informed consent

I, the undersigned, confirm that by consenting to participate in this study, I fully understand its objectives and conditions. I recognize my right to withdraw from the study at any time if I change my mind.

I _____, hereby give my consent to Mr. /Mrs./Miss _____ to include me in the proposed research. I have been given the necessary information about the research. I have also been assured that I can withdraw my consent at any time without penalty or loss of benefits. The proposal has been explained to me in a language I understand.

Are you willing to participate in the study?

Yes

No (Terminate the interview and say thank you)

Name of interviewer Dr/ Mr. /Mrs./Miss _____ Date ____/____/____

Supervisor

Dr/ Mr. /Mrs./Miss _____ signature _____ Date ____/____/____

Date of interview (Ethiopian calendar) ____/____/____

Result of interview:

1. Completed _____ 2. Refused _____

3. Respondent not available _____ 4. Partially completed _____

Annex-III English structured questionnaire
Data abstraction form from patient cards

Questioner ID. _____

Patient's Medical Record Number _____

Name of the Health facility _____

Date _____

1. Socio demographic data		
	Variables	Response
1.1	Age	----- years
1.2	Educational background	A. No education B. Primary education C. Secondary education D. College and above
1.3	occupation	A. Housewife B. Farmer C. Governmental D. Merchant E. Other (specify _____)
1.4	Residence	A. Urban B. Rural
1.5	Marital status	A. Single B. Married C. Divorced D. Widowed
1.6	Parity	_____
1.7	Monthly household income	_____

2. Clinical and treatment related data		
2.1	Duration after mastectomy in months	_____
2.2	Which side of breast is removed?	A. Right breast B. Left breast
2.3	Type of mastectomy done	A. Simple (total) mastectomy B. modified radical mastectomy C. Palliative Mastectomy
2.4	Have you taken other cancer treatment modality after surgery?	A. Yes B. No
2.5	If yes, for question number 2.4, what type of treatment have you taken?	A. Radiotherapy B. Chemotherapy C. Hormonal therapy
2.6	If you take chemotherapy How many cycles of treatment have you taken	_____
2.7	TNM stage of cancer	A. Stage I B. Stage II C. Stage III D. Stage IV
2.8	Do you have Comorbid diseases	A. Yes B. No
2.9	If yes for question number 2.8, what type of disease	A. Hypertension B. Diabetes mellitus C. Heart disease D. Other (specify) _____
2.10	Do you want to have reconstruction of your breast from other tissues?	A. Yes _____ B. No _____
2.11	Do you get social support from families and	A. Yes _____

	friends/ relatives?	B. No _____
2.12	Involved in peer support groups?	A. Yes _____ B. No _____
2.13	Get psycho-social support from a professional (Psychologist, psychiatrist, related professional)?	A. Yes _____ B. No _____

3. EORTC QLQ C-30 (English version)

We are interested in some things about you and your health. Please answer all of the questions yourself by circling the number that best applies to you. There are no "right" or "wrong" answers. The information that you provide will remain strictly confidential.

		Not at all	A little	Quite a bit	Very much
1	Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1	2	3	4
2	Do you have any trouble taking a long walk?	1	2	3	4
3	Do you have any trouble taking a short walk outside of the house?	1	2	3	4
4	Do you need to stay in bed or a chair during the day?	1	2	3	4
5	Do you need help with eating, dressing, washing yourself or using the toilet?	1	2	3	4

During the past week		Not at all	A little	Quite a bit	Very much
6	Were you limited in doing either your work or other daily activities?	1	2	3	4
7	Were you limited in pursuing your hobbies or other leisure time activities?	1	2	3	4
8	Were you short of breath?	1	2	3	4
9	Have you had pain?	1	2	3	4
10	Did you need to rest?	1	2	3	4
11	Have you had trouble sleeping?	1	2	3	4
12	Have you felt weak?	1	2	3	4
13	Have you lacked appetite?	1	2	3	4
14	Have you felt nauseated?	1	2	3	4
15	Have you vomited?	1	2	3	4

16	Have you been constipated?	1	2	3	4

During the past week		Not at all	A little	Quite a bit	Very much
17	Have you had diarrhea?	1	2	3	4
18	Were you tired?	1	2	3	4
19	Did pain interfere with your daily activities?	1	2	3	4
20	Have you had difficulty in concentrating on things, like reading a newspaper or watching television?	1	2	3	4
21	Did you feel tense?	1	2	3	4
22	Did you worry?	1	2	3	4
23	Did you feel irritable?	1	2	3	4
24	Did you feel depressed?	1	2	3	4
25	Have you had difficulty remembering things?	1	2	3	4
26	Has your physical condition or medical treatment interfered with your family life?	1	2	3	4
27	Has your physical condition or medical treatment interfered with your social activities?	1	2	3	4
28	Has your physical condition or medical treatment caused you financial difficulties?	1	2	3	4

For the following questions please circle the number between 1 and 7 that best applies to you

29. How would you rate your overall health during the past week?

1 2 3 4 5 6 7

very poor

excellent

30. How would you rate your overall quality of life during the past week?

1 2 3 4 5 6 7

very poor

excellent

4- EORTC QLQ -BR45 (English version)

Patients sometimes report that they have the following symptoms or problems. Please indicate the extent to which you have experienced these symptoms or problems during the past week.

During the past week		Not at all	A little	Quite a bit	Very much
31	Have you had a dry mouth?	1	2	3	4
32	Have food and drink tasted different than usual?	1	2	3	4
33	Have your eyes been painful, irritated or watery?	1	2	3	4
34	Have you lost any hair?	1	2	3	4
35	Answer this question only if you have lost any hair: Have you been upset by the loss of your hair?	1	2	3	4
36	Have you felt ill or unwell?	1	2	3	4
37	Have you had hot flushes?	1	2	3	4
38	Have you had headaches?	1	2	3	4
39	Have you felt physically less attractive as a result of your disease or treatment?	1	2	3	4
40.	Have you felt less feminine as a result of your disease or treatment?	1	2	3	4
41	Have you had problems looking at yourself naked?	1	2	3	4
42	Have you been dissatisfied with your body?	1	2	3	4
43	Have you worried about your health in the future?	1	2	3	4

During the past four weeks		Not at all	A little	Quite a bit	Very much
44	Have you been interested in sex?	1	2	3	4
45	Have you been sexually active? (With or without intercourse)	1	2	3	4
46	Has sex been enjoyable for you?	1	2	3	4

During the past week		Not at all	A little	Quite a bit	Very much
47	Have you had any pain in your arm or shoulder?	1	2	3	4
48	Have you had a swollen arm or shoulder?	1	2	3	4
49	Have you had problems raising your arm or to moving it sideways?	1	2	3	4
50	Have you had any pain in the area of your affected breast?	1	2	3	4
51	Has the area of your affected breast been swollen?	1	2	3	4
52	Has the area of your affected breast been oversensitive?	1	2	3	4
53	Have you had skin problems on or in the area of your affected breast (e.g., itchy, dry, flaky)?	1	2	3	4
54	Have you sweated excessively?	1	2	3	4
55	Have you had mood swings?	1	2	3	4
56	Have you been dizzy?	1	2	3	4
57	Have you had soreness in your mouth?	1	2	3	4
58	Have you had any redness in your mouth?	1	2	3	4
59	Have you had pain in your hands or feet?	1	2	3	4
60	Have you had any redness on your hands or feet?	1	2	3	4
61	Have you had tingling in your fingers or toes?	1	2	3	4
62	Have you had numbness in your fingers or toes?	1	2	3	4
63	Have you had problems with your joints?	1	2	3	4
64	Have you had stiffness in your joints?	1	2	3	4
65	Have you had pain in your joints?	1	2	3	4
66	Have you had aches or pains in your bones?	1	2	3	4
67	Have you had aches or pains in your muscles?	1	2	3	4
68	Have you gained weight?	1	2	3	4
69	Has weight gain been a problem for you?	1	2	3	4

During the past four weeks:		Not at all	A little	Quite a bit	Very much
70	Have you had a dry vagina?	1	2	3	4
71	Have you had discomfort in your vagina?	1	2	3	4

Please answer the following two questions only if you have been sexually active:		Not at all	A little	Quite a bit	Very much
72	Have you had pain in your vagina during sexual activity?	1	2	3	4
73	Have you experienced a dry vagina during sexual activity?	1	2	3	4

During the past four weeks:		Not at all	A little	Quite a bit	Very much
74	Have you been satisfied with the cosmetic result of the surgery?	1	2	3	4
75	Have you been satisfied with the appearance of the skin of your affected breast (thoracic area)?	1	2	3	4

Were there any symptoms or problems that were not covered by the questionnaire but were relevant for you in the past week?		Not at all	A little	Quite a bit	Very much
76		1	2	3	4
77		1	2	3	4
78		1	2	3	4

Annex-IV Information sheet (Amharic version)

አዲስ አበባ ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና ትምህርት ክፍል የተሳታፊዎች መረጃ መስጫ ቅፅ

ጤና ይስጥልኝ፣ ስሜ _____ ይባላል። በአዲስ አበባ ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና ትምህርት ክፍል የጥናት ቡድን አባላት በተዘጋጀው ጥናት ላይ መረጃ ሰጥባቢ ሁኔታ እየሰራሁ ነዉ። ፈቃደኛ ከሆናችሁ ይህን ጥናት በተመለከተ አጭር ቃለመጠይቅ ከርስዎ ጋር ይነረኛል። ከቃለ መጠይቡ በፊት ግን ስለዚህ ጥናት አላማ በአጭሩ እገልጽለታለሁ። ይህ ጥናት በአ.አ.ዩ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና የድህረ ምረቃ (ማስተርስ) ፕሮግራም መመረቂያ ፅሁፍ ነዉ።

የጥናቱ አላማ፡ በኢትዮጵያ የጡት ካንሰር ትልቅ የጤና ችግር እየሆነ ቢመጣም እና አብዛኛዎቹ ታማሚዎች የማስቴክቶሚ ህክምና እየተደረገላቸው ቢሆንም ከዚህ ህክምና ጋር የተያያዙ የህይወትን ጥራት ምዘና እና ትንቢቶቹን በተመለከተ የተደረገው ጥናት አነስተኛ ነዉ። በዚህ ጥናት ውስጥ የማስቴክቶሚ ቀዶ ጥገና ህክምና የተደረገላቸው የጡት ካንሰር ታካሚዎችን የህይወት ጥራት እና ተያያዥ ምክንያቶች ለመገምገም አቅደናል።

የጥናቱ ጥቅም፡ ለተሳታፊዎች ምንም አይነት ቀጥተኛ ጥቅም የለም ነገርግን ውጤቱ የጡት ካንሰር ህመማን ከማስቴክቶሚ ህክምና በኋላ ከህይወት ጥራት ጋር የተያያዙ የሚያጋጥሙትን ችግሮች ለመረዳት ይረዳል። ከዚህም በላይ ጤናን በተመለከተ መተዳደሪያ ደንብ ለሚያወጡ አካላት ችግሮቹን ለመቅረፍ ምቹ የሆነ የፕሮግራም አካሄድ እንዲፈጥሩ እና ለህዝቡ ሁሉን አቀፍ አገልግሎት እንዲሰጡ መረጃ ይሰጣል።

የጥናቱ ስጋት፡ በዚህ ጥናት ውስጥ መሳተፍ ምንም አይነት አደጋ ወይም ጉዳት አይኖረውም።

የተሳታፊዎች መብቶች፡ በዚህ ጥናት ውስጥ እንደ ተሳታፊ የመሳተፍ ወይም ያለመሳተፍ ሙሉ መብት አለዎት። ለሁሉም ጥያቄዎች ምላሽ መስጠት ይችላሉ፤ ወይም ደግሞ ላልፈለጓቸው ጥያቄዎች መልስ ላይሰጡ ይችላሉ፤ እና በፈለጉት ጊዜ ቃለ መጠይቁን ማቆም ይችላሉ። ለእርስዎ ግልጽ ያልሆነ ማንኛውንም ጥያቄ መጠየቅ ይችላሉ። እርሶዎ በጥናቱ በመሳተፍ ከሆስፒታል ካልዎት ግንኙነት ጋር ተፅእኖ የለውም።

ምስጢራዊነት፡ በዚህ ጥናት ወቅት ስለእርስዎ የምንሰበስበው ማንኛውም መረጃ በሚስጥር ይጠበቃል። ይህ መረጃ በኮምፒውተር በሚስጥር ከተመዘገበ በኋላ ስምዎት አይጠቀስም እናም በምንም ዓይነት መንገድ ሊታወቅ አይችልም። በኮምፒውተር ውስጥ ያለው መረጃ በሚስጥር ኮድ ታስሮ ይቀመጣል።

በጥናቱ ላይ ለመሳተፍ ፍቃደኛ ነዎት? 1. አዎ 2. አይደለውም አመሰግናለሁ!!

ለማነጋገር

ማንኛውም አይነት ጥያቄ ካሎት ዶ/ር ሮዳ መስፍንን ማነጋገር እና በፈለጉት ጊዜ መጠየቅ ይችላሉ።

ስም፡- ዶ/ር ሮዳ መስፍን ኃይሌ

ስልክ ቁጥር፡ +251988241385

ኢሜል፡ roda.mesfin@gmail.com

Annex-V Informed consent form (Amharic version)

ፈቃደኝነትን የሚያረጋግጥ ቅፅ

እኔ፣ በስሩ የተፈረመው፣ በዚህ ጥናት ለመሳተፍ በመስማማት አላማዎቼን እና ሁኔታዎችን ሙሉ በሙሉ እንደተረዳሁ አረጋግጣለሁ። ሃሳቤን ከቀየርኩ በማንኛውም ጊዜ ከጥናቱ የመውጣት መብቴን አውቃለሁ።

እኔ _____ ፣ በዚህ ጥናት ውስጥ እኔን ለማካተት ሚስተር /ወ/ት _____ ፈቃድ ሰጥቻለሁ። ስለ ጥናቱ አስፈላጊ መረጃ ተሰጥቶኛል። እንዲሁም ፈቃዴን በማንኛውም ጊዜ ያለቅጣት ወይም ጥቅማጥቅሞችን ማጣት ማቋረጥ እንደምችል አረጋግጥልኛል። ፕሮፖዛሉ በምረዳው ቋንቋ ተብራርቶልኛል።

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ _____ አይደለውም (ቃለ ምልልሱን አቋርጥ እና አመሰግናለሁ)

የጠያቂው ስም ዶ/ር/ አቶ _____

ተቆጣጣሪ

ዶ/ር፣ አቶ፣ ወ/ሮ፣ ወ/ት _____ ፊርማ _____ ቀን ____ / ____ / ____

የቃለ መጠይቁ ቀን (የኢትዮጵያ አቆጣጠር) ____ / ____ / ____

የቃለ መጠይቁ ውጤት፡-

1. የተጠናቀቀ _____ 2. አልተስማሙም _____

3. ተጠሪ አይገኝም _____ 4. በከፊል የተጠናቀቀ _____

Annex-VI Structured questionnaire Amharic version

1. ማንነትን የሚመለከት ጥያቄዎች		
1.1	ዕድሜ	_____
1.2	የትምህርት ደረጃ	ሀ/ አልተማርኩም ለ/አንደኛ ደረጃ ያጠናከኩ ሐ/ሁለተኛ ደረጃ ያጠናከኩ መ/ኮሌጅ እና ከዚያ በላይ
1.3	ስራ	ሀ/ የቤት እመቤት ለ/የመንግስት ሠራተኛ ሐ/መንግስታዊ ያልሆነ ድርጅት ሠራተኛ መ/ግል
1.4	የመኖሪያ ቦታ	ሀ/ ከተማ ለ/ ገጠር
1.5	የጋብቻ ሁኔታ	ሀ/ያላገባች ለ/ በትዳር ላይ ያሉ ሐ/የፈታች መ/ ባል የምትባሉት

1.6	ስንት ልጆች ወለዱ	_____
1.7	የወር ገቢ	_____
2. የሕክምና መረጃ/ ከበሽተኛ ካርድ የሚወሰድ		
2.1	የማስቴክቶሚ ቀዶ ጥገና ከተደረገ በኋላ ምን ያህል ጊዜ ሆኗል	በቀናት
2.2	የትኛው የጡቱ ጎን ተወግዷል	ሀ/ የቀኝ ጡት ለ/ የግራ ጡት
2.3	የተከናወነ የማስቴክቶሚ ዓይነት	ሀ/ Simple (total) mastectomy ለ/ modified radical mastectomy ሐ/ Palliative Mastectomy
2.4	ከዚህ ህክምና በፊት ሌላ የካንሰር ህክምና ወስደዋል?	ሀ/ አዎ ወስደዋል ለ/ አልወስዱም
2.5	ለ2.4 መልስዎ አዎ ከሆነ ምን ዓይነት ህክምና ነው የወሰዱት ?	ሀ/ የChemotherapy ህክምና ለ/ የጨረር ህክምና ሐ/ የሆርሞን ሕክምና
2.6	ኬሞቴራፒ ከወሰዱ ለስንተኛ ዙር ነው ይህን መድሀኒት የሚወስዱት	ሀ/ ለሀላትኛ ጊዜ ለ/ ለሶስተኛ ጊዜ ሐ/ ለአራተኛ ጊዜ መ/ ለአምቲኛ ጊዜ ሠ/ ለስድስተኛ ጊዜ

		ረ/ ለሰባተኛ ጊዜ ሰ/ ለስምተኛ ጊዜ
2.7	የዕጢው ደረጃ	ሀ/ Stage I ለ/ Stage II ሐ/ Stage III መ/ Stage IV
2.8	ተጉዋዳኝ በሺታ ዐለብዎት?	ሀ/ አዎ ለ/ የለም
2.9	ለጥያቄ ቁጥር 2.8 መልስዎ አዎ ከሆነ ምን አይነት	ሀ/ የደም ግፊት ለ/ የስኳር በሺታ ሐ/ የልብ በሺታ መ/ ሌላ
2.10	ጡትዎን ከሌሎች ሕብረ ሕዋሳት መልሶ ግንባታ እንዲኖርዎት ይፈልጋሉ?	ሀ/ አዎ ለ/ አይ
2.11	ከቤተሰቦች እና ጓደኞች/ዘመዶች ማህበራዊ ድጋፍ ያገኛሉ?	ሀ/ አዎ ለ/ አይ
2.12	በአቻ ድጋፍ ቡድኖች ውስጥ ተሳትፈዋል?	ሀ/ አዎ ለ/ አይ

2.13	ከባለሙያ የስነ-ልቦና-ማህበራዊ ድጋፍ ያገኛሉ? (ሳይኮሎጂስት፣ ሳይካትሪስት፣ ተዛማጅ ባለሙያ)?	ሀ/ አዎ ለ/ አይ

3. EORTC QLQ C-30 (Amharic version)

የእኛው ቡድን ስለክእራዎ ስለጤንነትዎ ልዩ ትኩረት መስጠት ነው።

እባክዎትን የሚከተሉትን ጥያቄዎች በሙሉ እርሶዎ ትክክለኛ ብለው ያመኑበትን በማክበብ ይመልሱ ። ትክክለኛ መልስ ወይም የተሳሳተ መልስ የሚባል የለም። የሚሰጡት መረጃ ሁሉ ሚስጠራዊነቱ በደንብ የተጠበቀ ይሆናል።

እባካዎን የእርሶዎንና የአያትዎን የስም መጀመሪያ ፊደል ይገኙኝ.....

መለያቁጥር.....

ቀን፡.....

		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
1	ከባድ ስራ ወይም እንቅስቃሴ ለመስራት ችግር አለብዎ (ለምሳሌ፤ ዘንቢል ለመሸከም)	1	2	3	4
2	ረጅም የእግር ጉዞ ለማድረግ ችግር አለብዎ	1	2	3	4
3	አጭር የእግር ጉዞ ለማድረግ ችግር አለብዎ (ከቤትዎ ውጪ)	1	2	3	4
4	በህመምዎ የተነሳ በቀን አልጋ ላይ ወይም ወንበር ላይ ሁነው ረዘም ላለ ሰዓት ያሳልፋሉ?	1	2	3	4
5	የዕለት ተዕለት እንቅስቃሴዎን ለማከናወን ረዳት ወይም አጋዥ ይፈልጋሉ ?ለምሳሌ መመገብ መልበስ	1	2	3	4
	ባለፈው ሳምንት ውስጥ	በጭራሽ	በትንሹ	በመጠኑ	በብዛት
6	ስራዎትን ወይም የዕለት ተዕለት እንቅስቃሴዎን ለማከናወን አግድዎት ነበር	1	2	3	4
7	በትርፍ ጊዜ የሚከናወን ስራ ወይም ዝንባሌዎን ለማሳካት ወይም ሌሎች የመዝናኛ ጊዜዎች ለማሳለፍ አግዶዎታለ?	1	2	3	4
8	ሲተነፍሱ ትንፋሽ ማጠር አጋትጥመዎት ነበር?	1	2	3	4
9	የህመም ስሜት ነበረብዎ?	1	2	3	4
10	ከወትሮዎ የተለየ ዕረፍት አስፈልጎዎት ነበር?	1	2	3	4
11	የእንቅልፍ ችግር ነበረብዎ?	1	2	3	4
12	አቅም ያንስዎት ነበር?	1	2	3	4
13	የምግብ ፍላጎትዎ ቀንሷል?	1	2	3	4
14	የማቅለሽለሽ ስሜት ነበረብዎ?	1	2	3	4
15	አስመልስዎት ነበር ?	1	2	3	4
16	የሰገራ ድርቀት ነበረብዎ ?	1	2	3	4

ባለፈው ሳምንት ውስጥ		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
17	ተቅማጥ ነበረብዎ?	1	2	3	4
18	የድካም ስሜት ነበረብዎት ?	1	2	3	4
19	ህመሙ ዕለት ተዕለት እንቅስቃሴዎን ያውኩብዎ ነበረ ?	1	2	3	4
20	አንዳንድ ነገሮች ትኩረት ስጥተው ለመስራት? ያዉክዎት ነበር? (ለምሳሌ፤ ጋዜጣ ለማንበብ፤ ራዲዮ በማዳመጥ)	1	2	3	4
21	የውጥረት ስሜት ነበረብዎ ?	1	2	3	4
22	የመጨነቅ ስሜት ነበረብዎ ?	1	2	3	4
23	የመነጫነጭ ስሜት ነበረብዎ?	1	2	3	4
24	የመደበር ስሜት ነበረብዎ ?	1	2	3	4
25	ነገሮችን የማስታወስ ችግር ነበረብዎ ?	1	2	3	4
26	የጤናዎ ሁኔታ ወይም የሚከታተሉት ህክምና ኑሮ ላይ ያሳደረው ተፅዕኖ አለ	1	2	3	4
27	የጤናዎ ሁኔታ ወይም የሚከታተሉት ህክምና በማህበራዊ ህይወትዎ፤ በሚያደርጉት እንቅስቃሴ ላይ ያሳደረው ተፅእኖ አለው ?	1	2	3	4
28	የጤናዎ ሁኔታ ወይም የሚከታተሉት ህክምና ገንዘብ እንዲያጥርዎ /እንደቸገርዎ አድርጓል ?	1	2	3	4

		በጣም መጥፎ						እጅግ በጣም ጥሩ
29	ባለፈው ሳምንት በአጠቃላይ የጤንነት ሁኔታዎን እንዴት ይመዝኑታል?	1	2	3	4	5	6	7
30	ባለፈው ሳምንት የርስዎን የሂወት የመኖር ጣዕም ዕንዴት ይመዝኑታል?	1	2	3	4	5	6	7

4. EORTC QLQ BR-45 (Amharic version)

ባለፈው ሳምንት ውስጥ		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
31	የአፍ ድርቀት ነበረብዎ ?	1	2	3	4
32	ምግብና መጠጥ ከወትሮ የተለያ ጣዕም ተለውቶብዎ ነበር?	1	2	3	4
33	አይንዎን የህምም የመቆርቆር ወይም ውሀ የማዘል ስሜት ነበረብዎ ?	1	2	3	4
34	ፀጉርዎ ሳስቶ ፤ ተነቅሎ ነበር?	1	2	3	4
35	ለጥያቄ ቁጥር 4.4 መልስዎአዎ ከሆነ ወይም ከ ምርጫ ቁጥር 1 ውጪ ከሆነ ፀጉራ በመነቀሉ ተናደው ነበር?	1	2	3	4
36	የህምም ስሜት ነበረብዎ?	1	2	3	4
37	ፊትዎ አካባቢ የሙቀት፤ የማቃተል ስሜት ነበርብዎ?	1	2	3	4
38	ራስ ምታት ነበረብዎ ?	1	2	3	4
39	በጤናዎ ሁኔታ ወይም በሚከታተሉት ህክምና ምክንያት አይን የማይሰቡ ሰው እንደሆኑ ተሰምቶዎት ነበር ?	1	2	3	4
40	በጤናዎ ሁኔታ ወይም በሚከታተሉት ህክምና ምክንያት ሴትነትዎ ተሰምቶዎት ነበር?	1	2	3	4
41	እርቃንዎን ሁኔታ ራስዎን መመልከት ከብደዎት ነበር?	1	2	3	4
42	በአካልዎ ወይም በሰውነትዎ አቋም ያለመርካትና ያለመደሰት ስሜት ተሰምቶዎት ነበር?	1	2	3	4
43	ስለወደፊት ጤንነትዎ ተጨንቀው ነበር?	1	2	3	4
ባለፈት አራት ሳምንት ውስጥ		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
44	ለየታዊ ግንኙነት ምን ያህል ፍላጎት ነበርዎት ?	1	2	3	4
45	የታዊ ግንኙነት ላይ ምን ያህል ተሳታፊ ነበሩ? (በግብረ ስጋ ግንኙነት ወይም ከግንኙነት ውጭ)?	1	2	3	4
46	ለጥያቄ ቁጥር 45 መልስዎ ከ 1 ወጪ ከሆነ (ግብረ ስጋ ግንኙነቱ ምን ያህል አስደሳች ነበር?	1	2	3	4
ባለፈው ሳምንት ውስጥ		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
47	ከንድዎ ላይ ወይም ትከሻዎ ላይ ህመም ተሰምቶዎት ነበር ?	1	2	3	4
48	የክንድ ወይም ትከሻ እብጠት ነበረብዎት?	1	2	3	4

49	ከንድሥን ለማነሳት ወይም ወደ ጉን ለማንቀሳቀስ ተቸግረው ነበር?	1	2	3	4
50	በበሽታ የተጠቃዉ ጡትዎ አካባቢ የህምም ስሜት ነበረብዎ?	1	2	3	4
51	በበሽታ የተጠቃዉ ጡትዎ አካባቢ እብጠት ነበረብዎ ?	1	2	3	4
52	በበሽታ የተጠቃዉ ጡትዎ አካባቢ በትንሹ ሲነካ ከባድ የህመም ስሜት ነበረብዎ?	1	2	3	4
53	በበሽታ የተጠቃዉ ጡትዎ አካባቢ የቆዳ ችግር ነበረብዎ?	1	2	3	4
54	ከመጠን በላይ ላብ ነበረብዎት?	1	2	3	4
55	የስሜት መለዋወጥ ነበረብዎት?	1	2	3	4
56	የማዘር ስሜት ተስምትዎ ነበር?	1	2	3	4
57	በአፍዎ ውስጥ ህመም ነበረብዎት?	1	2	3	4
58	በአፍዎ ውስጥ ማንኛውም አይነት መቅላት ነበረብዎት?	1	2	3	4
59	በእጆችዎ ወይም በእግርዎ ላይ ህመም አጋጥሞዎታል?	1	2	3	4
60	በእጆችዎ ወይም በእግርዎ ላይ ማንኛውም አይነት መቅላት ነበረዎት?	1	2	3	4
61	በጣቶችዎ ወይም በእግር ጣቶችዎ ላይ የመቆጥቆጥ አይነት ስሜት ነበረብዎ?	1	2	3	4
62	በጣቶችዎ ወይም በእግር ጣቶችዎ ላይ የመደንዘዝ ስሜት ነበረዎት?	1	2	3	4
63	በመገጣጠሚያዎችዎ ላይ ችግር አጋጥሞዎታል?	1	2	3	4
64	በመገጣጠሚያዎችዎ ላይ ግትርነት ነበረዎት?	1	2	3	4
65	በመገጣጠሚያዎችዎ ላይ ህመም አጋጥሞዎታል?	1	2	3	4
66	በአጥንትዎ ላይ ህመም አጋጥሞዎታል?	1	2	3	4
67	በጡንቻዎችዎ ላይ ህመም አጋጥሞዎታል?	1	2	3	4
68	ከብደት ጨምረዋል?	1	2	3	4
69	ከብደት መጨመር ለእርስዎ ችግር ሆኖብዎታል?	1	2	3	4
ባለፈት አራት ሳምንት ውስጥ		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
70	የብልት መድረቅ ነበረዎት?	1	2	3	4

71	ብልትዎ ውስጥ ምችት ማጣት አጋጥሞታል?	1	2	3	4
እባክዎ ግንኙነት ከጀመሩ ብቻ የሚከተሉትን ሁለት ጥያቄዎች ይመልሱ:-		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
72	በግንኙነት ወቅት ብልትዎ ላይ ህመም አጋጥሞታል?	1	2	3	4
73	በግንኙነት ወቅት የብልት መድረቅ አጋጥሞታል?	1	2	3	4
ባለፈው ሳምንት ውስጥ		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
74	በቀዶ ጥገናው ውጤት ረክተዋል?	1	2	3	4
75	የተጎዳው የጡትዎ ቆዳ (የደረት አካባቢ) በአሁኑ ጊዜ ባለው መልክ ረክተዋል?	1	2	3	4

በመጠይቁ ያልተሸፈኑ ነገር ግን ባለፈው ሳምንት ለእርስዎ ጠቃሚ የሆኑ ምልክቶች ወይም ችግሮች ነበሩ?		በጭራሽ	በትንሹ	በመጠኑ	በብዛት
76		1	2	3	4
77		1	2	3	4
78		1	2	3	4

Annex-VII Training Manual

Title: Magnitude of Mastectomy, Post-Mastectomy Health-related Quality of Life, and Its Predictors Among Breast Cancer Patients in Addis Ababa, Ethiopia

Part I: Overview of the Study

This study aims to assess the magnitude of mastectomy and evaluate the quality of life of breast cancer patients' post-surgery in Addis Ababa, Ethiopia. Understanding the predictors that influence quality of life will provide insights for the patients, healthcare providers and policymakers to improve overall patient care.

Part II: Training and Its Arrangements

Training Schedule: Monday, Wednesday, Friday 9:00 AM-12:00 PM

Duration: 3 days

Location: Wello Sefer, Nasar Transit and Logistics PLC

Participants: BSC Nurses and Health officers

Training Content

Introduction to the study and its importance

Overview of data collection method (Face-to-face interviews)

Ethical considerations, including patient consent and confidentiality

Part III: Roles and Responsibilities

Principal Investigator: Oversee the entire study

Data Collectors: Conduct interviews

Supervisors: Monitor data collection and ensure adherence to protocols

Part IV: Interviewing Skills and Technique

Active Listening: Allow participants to express themselves fully

Open-Ended Questions: Encourage detailed responses

Empathy: Show understanding and compassion towards participants' experiences

Techniques

Build rapport to facilitate open communication

Use follow-up questions to clarify responses

Part V: Data Quality Management During Data Collection

Strategies for Ensuring Data Quality

Regularly monitor data collection processes

Provide continuous training and support to data collectors

Implement double data entry to minimize errors

Documentation

Maintain detailed records of data collection activities

Ensure all data is securely stored and backed up

Part VI: Supervision of Data Collection

Supervision Plan

Daily check-ins with data collectors to address challenges

Weekly team meetings to review progress and resolve issues

Random spot checks to ensure adherence to protocols

Responsibilities of the supervisors

Provide guidance and support to data collectors

Ensure ethical standards are met during data collection

Compile and analyze feedback for continuous improvement

DR. RODA MESFIN HAILE

General Practitioner

PROFILE

More than Two years' experience as a General Practitioner. In addition to my background in Medical Doctorate I have been involving in different tasks like Community Based Training Program, Team Training Program and First Aid Training coordinated by the school. What makes me different is I am a quick learner and have an experience working in a challenging environment and communicate effectively with people from a variety of cultural backgrounds.

CONTACT

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+251988241385

Current Location:

Addis Ababa, Ethiopia

Email

roda.mesfin@gmail.com

www.linkedin.com/in/roda-haile-89542320b

EDUCATION

AAU, College of Health Sciences, School of Public Health Master's degree

October 2023 – Present.

Jimma University

Degree of Medical Doctorate

October 2013 – February 2020.

WORK EXPERIENCE

Yeka Sub-City Woreda 12 Health Center

General Practitioner

July 2021 – December 2023.

My responsibilities include examining and prescribing the necessary treatment to patients at OPD and after thoroughly explaining their health status, referring the ones who need further investigation and management to referral hospitals.

Mainly worked on Integrated Management of Newborn and Childhood Illness (IMNCI) in addition to monitoring of children on an Outpatient Therapeutic Programs as well as growth and Development programs.

Provide outpatient and inpatient consultations and manage the health professionals under my direct supervision to facilitate the overall curative health service delivery core process.

Detection of potential disease outbreaks by examining the result at hand and immediately informing to the surveillance officers so that protective actions can be undertaken based on the disaster warning and the available resources. Assist during emergency response planning and preparations.

LANGUAGE

English
Amharic

HOBBIES

Volunteering
Aerobic Exercises
Watching Movies

Provide on-job trainings to health professionals to refresh previous knowledge and give updates according to new guidelines on patient management and emerging outbreaks. Work on Cholera surveillance and clinical case management.

Semen Health Center

General Practitioner

October 2020 – June 2021

With the objective of contributing for my countries effort to control and prevent the COVID-19 pandemic, I started volunteering at Semen Health Center which allowed me to get more experience in public emergency outbreak responses.

Participated on procedures which are done in the minor OR like circumcision.

Life Addis Higher Clinic
December 2020 – June 2021

I was volunteering two days a week to equip myself with knowledge and skills in management of patients who are on chronic, Non-Communicable Disease (NCD) follow up.

Jimma University Medical Center
Medical Intern
January 2019 – January 2020

I have worked as a Medical Intern. My duties were taking histories and physicals, writing progress notes, collecting lab reports, writing transfer and discharge summaries, and participating in morning reports.

SKILLS & TRAINING

- Certificate on basic Cholera Surveillance and Clinical Case Management.
- I have good theoretical knowledge, clinical skills and displays them with mature mannerism, I am a hard worker attentive and empathic to patients.
- Training on Basic Obstetrics Ultrasound Skills coordinated by Ethio-American Health and Related Consultancy = Certificate, from 12-14 February 2021.

REFERENCES

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Employer: Life Addis Higher Clinic
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3. Dr. Mulatu Biru
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4. Dr. Demisew Amenu
Job Title: MD, Ass.Professor of OBGYN Urogynecology and reconstructive pelvic Surgery Subspecialist
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Telephone number: +251911811468

Magnitude of Mastectomy, Post-Mastectomy Health-Related Quality of Life and Its Predictors Among Breast Cancer Patients in Addis Ababa, Ethiopia.

ORIGINALITY REPORT

21%	17%	16%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	etd.aau.edu.et Internet Source	3%
2	www.ncbi.nlm.nih.gov Internet Source	2%
3	"Managing Side Effects of Breast Cancer Treatment", Springer Science and Business Media LLC, 2024 Publication	2%
4	journals.plos.org Internet Source	1%
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