Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

Prevalence of Depression and Anxiety and Associated Factors among Cancer Patient at Tikur Anbessa Hospital

BY: Meseret Mekonnen

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Advisor: Kassahun Habtamu

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Declaration

I, the undersigned, declare that this is my original work that has never been presented in this or any other university, and that all the resources and materials used for the thesis, have been fully acknowledged.

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This thesis has been submitted for examinations with my approval as an academic advisor

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ABBREVIATIONS AND ACRONYMS

DSM	Diagnostic and Statistical Manual of Mental disorders
HADS	Hospital Anxiety and Depression Scale
ICD	International classification of disease
NGO	Non-governmental Organizations
NSCLC	Non-Small Cell Lung Cancer
PBPI	Pain Beliefs and Perceptions Inventory
PTSD	Posttraumatic Stress Disorder
SPSS	Statistical Packages for the Social Sciences
WEF	World Economic Forum
WHO	World Health Organization
AOR	Adjusted Odds Ratio
COR	Crude Odds Ratio
CI	Confidence Interval

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ABSTRACT

Both depression and anxiety are the most common problems among cancer patients. But, there is information gap on the prevalence and associated factors of depression and anxiety among cancer patients in the study area. Having identified this gap, the current study aimed to assess prevalence and associated factors of depression and anxiety among cancer patients. This study is quantitative by design. Respondents of the study were selected using stratified random sampling. From the total population of the study site, a total of 384 cancer patients have participated in filling the questionnaire. Facility-based cross-sectional study was conducted from March to May2017.Data collected using questionnaire were analyzed using bivariate and multivariable binary logistic regression analysis. The prevalence of depression among cancer patients was 63% (95%, CI: 58.3-67.7). And the prevalence of anxiety among cancer patients was56.8 %(95%, CI: 51.8-61.7). All factors, age, religion, monthly income and occupation were found to be significantly associated with depression while sex, residence, marital status, education, and social support were not significantly associated. And age, sex, religion, monthly income, education and occupation were found to be significantly associated with anxiety; whereas marital status and residence were not significantly associated. All clinical factors, (treatment type, type of cancer, stage of cancer, durations of diagnosis) were found to be significantly associated with both depression and anxiety. Social support and pain belief perception of patients were significantly associated with depression and anxiety. The study recommends that counselors and oncologists need to work in close collaboration among themselves to better serve cancer patients and also awareness creation to the general public seem essential to bring attitudinal change.

Key words: *Prevalence, depression, anxiety, cancer, Tikur Anbesa Specialized Hospital*

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Cancer is one of the most common causes of death in the world and receiving a diagnosis of cancer is an extremely stressful experience (Efficace & Marrone, 2002). Cancer can have major adverse physical, psychosocial, and economic consequences for both the individual with the illness and their family members (Lewis, 1986; Zabora et al., 1997; Todd et al., 2002). Psychological distress is frequently observed among cancer patients during the clinical course of the disease. Patients are confronted with problems such as fear of death, unresolved issues and pain (Grumann and Spiegel, 2003; Song, 2003; Taylor, 2003).

In 2012, nearly 14.1 million new cases of cancer (excluding non-melanoma skin cancer) were diagnosed worldwide, and this number is expected to increase to 21.7 million by 2030 (Bray, Jemal, Grey, Ferlay, and Forman, 2012). Of all cancer types, lung cancer (4.6%), breast cancer (23%), colorectal cancer (3.6%), stomach cancer (7.8%) and prostate cancer (7.1%) are the most common worldwide (Ferlay& Shin, 2010).

Cancer is an emerging public health problem in Africa. According to the International Agency for Research on Cancer (IARC), about 850,000 new cancer cases and 600,000 cancer deaths occurred in 2012 in Africa (Daniela, 2012). The predictions for 2020 are approximately 1,056,000 new cases (an increase of approximately 24%) and more than 735,000 deaths simply due to the aging and growth of the population, with the potential to be even higher because of the adoption of behaviors and lifestyles associated with economic development, such as smoking, unhealthy diet, and physical inactivity (American Cancer Society, 2012).

Cancer, one of the non-communicable diseases, is among the major causes of morbidity and death in Ethiopia. Hospital records show that in Ethiopia there are more than 200,000 cancer cases per year (Teshome, 2011).A total of 5701 cancer cases registered from September 2011 to August 2014. Among these 3820 (67%) were females and 1881 (33%) males. The incidence rates by age groups shows that the highest (38.4%) is among age groups 30-49 years. The most commonly leading cancers among females were cancers of the breast (33%), Cervix uteri (17%) and Ovary (6%), while among males were cancers of colorectal (19%), Leukemia (18%) and prostate (11%)(Mathewos,2017).Cancer is a serious and potentially life-threatening illness which has an effect on physical and emotional wellbeing of patients and their families. The diagnosis of cancer is a stressful event causing significant psychological distress (Pirl, 2004; National Comprehensive Cancer Network, 2007: Zabora, 2001).

Various studies have demonstrated high levels of depression and anxiety in cancer patients using a variety of assessment methods (Pirl, 2004; National Comprehensive cancer Network, *2007*;Zabora, 2001*;* Mystakidou, *et al.*, 2005).Depression is a challenge to study in cancer patients as symptoms occur over a range of spectrum being different in different patients (Massie, 2004 & Lloyd, 2000). It is a challenging job to diagnose depression in patients with cancer. It may present with guilt, worthlessness, hopelessness, lowered self-esteem, social withdrawal or suicidal preoccupation (Lloyd, 2000 &Lynch, 1995). This is further complicated by the findings that symptoms in cancer patients occur in clusters *(*Donovan & Jacobsen, 2007*)*. Anxiety has been shown to frequently coexist with depressive disorders (Montazeri, *et al.*, 1998). This is significant as it has been shown that patients with co morbid anxiety and depressive disorders tend to have severe symptoms, longer recovery times, poorer outcomes and greater use of healthcare resources than those with a single disorder (Hirschfeld, 2001).Anxiety and depression in cancer patients may

be caused by various reasons including psychological reaction caused by diagnosis of cancer, long duration of treatment, side effects of treatment, repeated hospitalizations, disruption in life and diminished quality of life (Jacobsen & Jim, 2008).Furthermore, some of the agents act directly on central nervous system causing psychiatric morbidity (Capuron, Ravaud&Dantzer, 2000).

The prevalence of depression by the International Classification of Disease (ICD-10) or Diagnostics and Statistical Manual of Mental Disorder (DSM-IV) criteria in palliative-care settings was 16.5%; the prevalence of adjustment disorder was 15.4%; the prevalence of anxiety disorders was 9.8%; and combination diagnoses were prevalent among up to 29.0%of patients (Singer, et al, 2010).Singer et al (2010) observed prevalence rates up to 32% among cancer patients in acute hospitals. Despite all these findings of higher likelihood of cancer patients to suffer from psychological distress, studies have reported that healthcare workers fail to identify cancer patients with depression and anxiety leading to under-treatment in 40-90% of the cases (Lynch, 1995&Singer, 2007).It is important to recognize depression in cancer patients because it may reduce chances of survival and predict early mortality (Satin, Linden, Phillips, 2009). Presence of depression and anxiety produces complications in treatment of both cancer and depression and can lead to poor compliance with treatment resulting in worsening of situation. It puts the patients at a higher risk of suicide and may produce a desire for hastened death (O'Mahony, 2005). Additional depression leads to a decline in patient satisfaction with medical care and predicts disease progression (*Grov, 2005).* Psychological distress also has a negative effect on quality of life (Frick, Tyroller, Panzer, 2007). Depression and anxiety impair quality of life not only of the patients but also of their caregivers (Ahn, 2007).

Research suggests that interventions to treat depression and anxiety are effective even in patients with advanced disease *(*Jacobsen & Jim, 2008). In addition, identification and treatment of depression and anxiety leads to reduction in disease progression, improvement in survival rates, reduction in healthcare costs and improvement in quality of life (Carlson &Bultz, 2003*)*.

Additionally, some previous studies reported the clinical and social factors associated with anxiety and depressive disorders in cancer patients. The main factors influencing the levels of psychological distress are patients' socio-demographic characteristics such as age, gender, and education level (Vukojević, et al., 2012), social support (Tel, Sari, Aydin, 2013) and disease-related factors (Laird et al., 2009). The relationship between psychological problems and disease-related factors, such as disease stage, pain, and performance status, has been reported by various studies (Lin & Lai, 2003).Psychosocial factors seem to be more associated with the patients' illness adjustment than demographic and clinical factors (Harrison & Maguire, 1984). According to different studies, among psychosocial factors, factors relating to patient's environment such as social support and family functioning, and problem solving or coping styles were highly associated to anxiety and depressive disorders (Harrison & Maguire, 1984). Strong social support, high family functioning, and adaptive problem-solving patterns are positive personal resources. These resources are considered as protective factors. They help to moderate psychosocial stress and lessen psychiatric morbidities. From previous studies, strong social support, high family functioning, and adaptive problem-solving patterns reduced psychiatric morbidities such as anxiety and depressive disorders in cancer patients (Williams, et al., 1995).In this era of improved cancer care, it is still often believed that pain and death is inevitable for cancer patients.

There is a need to develop an evidence base to help introduce interventions as untreated depression and anxiety can lead to significant morbidity. Researchers need prevalence estimates to be able to develop an effective strategy. Although there are a number of studies assessing psychological distress in cancer patients, there are significant gaps in the literature. Furthermore, the writer of this paper has not been able to find local studies investigating the association of various demographic, social support and clinical factors with the prevalence of depression and anxiety in cancer patients and there is paucity of studies on psychological distress in cancer patients from Addis Ababa, Ethiopia. Therefore, this study aimed to assess the prevalence and associated factors of depression and anxiety among cancer patients at Tikur Anbesa Specialized Hospital .Specifically, the researcher aimed to investigate the socio-demographic, clinical and psychosocial factors that are associated with depression and anxiety among cancer patients.

1.2. Statement of the Problem

Cancer is an increasing public health burden for Ethiopia and Sub-Saharan Africa at large. Indeed, by the year 2030, cancer and other non-communicable diseases may overtake some infectious diseases as leading causes of death in the African Region(Ferlay& Shin, 2010). Currently cancer accounts for four percent of all deaths in Ethiopia(Teshome, 2011). Approximately 200,000 new cases of cancer are diagnosed annually in Ethiopia (Teshome, 2011).

Most cancer patients may suffer from psychological problems in varying degrees (Al-Shakhli ,et al., 2006). Psychological distress may be part of a reaction to the cancer diagnosis (Montazeri,et al.,1998) but in many patients, it will persist, causing an added burden during treatment and leading to more difficulty with general management and symptom control, increased length of hospital stay (Penelope & Richard , 2000), and decreased compliance with treatment (Stoudemire& Thompson, 1983). Anxiety and depression are the most common psychological

problems among cancer patients (Chapman, 1979; Takahashi, et al., 2008). Moreover, the presence of depression or anxiety in cancer patients is believed to influence survival (Gramignano, 2006 &Van, Arends, 2005). Data from several studies have indicated that poor psychological status may influence a patient's immune status and thereby affect the illness duration (Greer, 1983 & Miller, 1998); untreated depression results in significant morbidity and mortality (Massie, 2004).

In a recent study, among a sample of adults diagnosed with first onset head and neck or lung malignancies, the 12-month incidence of posttraumatic stress disorder was found to be 14%, 20% for other anxiety disorders, and 20% for depressive disorders (Kangas et al., 2005). These psychiatric disorders lead to patients' maladaptive illness behavior, and worsen the disease course and the treatment outcomes (Spiegel, 1996). However, these psychiatric disorders in cancer patients seem to be ignored and left untreated (Nilchaikovit, Lotrakul, Phisansuthideth, 1996). Understanding these common psychiatric disorders and associated social factors found in cancer patients can help to plan for effective treatment of these patients and may result in more treatment success.

Therefore, having a good understanding on the prevalence and risk factors of psychological problems among cancer patients is helpful in identifying high-risk patients.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of this study is to assess the prevalence and associated factors of depression and anxiety among cancer patients at Tikur Anbesa Specialized Hospital.

1.3.2. Specific Objectives:-

- To understand the prevalence of depression among cancer patients at Tikur Anbesa Specialized Hospital.
- To determine the prevalence of anxiety among cancer patients at Tiku Anbesa Specialized Hospital.
- To investigate the socio-demographic, clinical, pain belief perception and social characteristics associated with depression among cancer patients at Tikur Anbesa Specialized Hospital.
- To investigate the socio-demographic, clinical, pain belief perception and social characteristics associated with anxiety among cancer patients at Tikur Anbesa Specialized Hospital.

1.4. Significance of the Study

Assessing the prevalence of cancer related depression and anxiety, and associated factors causing patients experience various problems is greatly helpful to different sectors functioning on health and others described following below.

- The output of this study is useful to the hospitals delivering services to cancer patients.
- The findings of the study are useful to health care providers to improve their services to patients of cancer
- It also uses a base line to the researchers interested to study the case by adding the variables not addressed in this research.
- The outcome of the study is again useful to the policy makersto critically look at the major findings and develop the new one that can alleviate the problems.The major gaps such as

shortage of skilled human power, budget and lack of cooperation between oncologists and councilors retain the policy makers' attention for their say.

1.5. Delimitation of the Study

This study is mainly delimited to investigate the prevalence rate and associated factors of depression and anxiety among cancer patients in Tikur Anbesa Specialized Hospital. The present study is conducted in Tikur Anbesa Specialized hospital where treatment and care is given to cancer patients only. The study is structurally limited to investigate the case of cancer patients and their treatment in the Oncology Clinic after 2013 G.C. The variables that are in the study are depression, anxiety and other associated factors coming as the aftermath from cancer patients.

1.6. Operational Definition of variables

The following terms are operationally defined in accordance with the study aim and variables measured to be examined from the view point of patients of cancer**.**

Depression: is a negative mood or low mood i.e. feelings of guilt and slowed down. Hospital Anxiety Depression (HADS) Scale has 14 items (seven items for the anxiety sub-scale and seven items for the depression sub -scale). Each item is rated on a 0 to 3 score ranges, yielding a total score ranging from 0 to 21 for each subscale. The higher the total score, the higher is the level of anxiety and depression. The norms give an idea of the level of depression (0-7=normal, 8-10=mild, 11-14= moderate and 15-21=severe)

Anxiety: is feeling tense, frightened feeling, worrying thoughts, restless and sudden feelings of panic. Hospital Anxiety Depression (HADS) has 14 items (seven items for the anxiety sub-scale and seven items for the depression sub -scale). Each item is rated on a 0 to 3 score ranges, yielding a total score ranging from 0 to 21 for each subscale. The higher the total score, the higher is the

level of anxiety and depression. The norms give an idea of the level of anxiety (0-7=normal, 8-10=mild, 11-14= moderate and 15-21=severe).

Pain belief perception: refers to the perception of cancer patients on how they sense the unpleasant pain caused from cancer. For example, lengthy of the pain, blaming own self as means to bring cancer.

Clinical characteristics of cancer patients consist of:

- **Types of cancer:** the types of cancer cell they start from. The present study will focus on Breast, Cervical, Thyroid, Colon and other types of cancer as once.
- **Stage of cancer:** is the extent or spread of cancer at the time of diagnosis.

Duration of diagnosis: for the first time the patient gets informed that he is receiving the diagnosis.

Social Support: provided to cancer patients, the number of supporters who regularly provide help to clients, and some others who uniquely care patients of cancer in different settings. It also refers on the availability of helpers any time when they are found important.

CHAPTER TWO

2. LITERATURE REVIEW

This section presented the review of previous research on prevalence and associated factors of depression and anxiety among cancer patients. The review started with overview of cancer, prevalence and global cancer epidemic, cause, consequences and treatments of cancer, prevalence and associated factors of depression and anxiety. These will be followed by their underpinning theories. Then, a conceptual framework that showed the relationship of the study variables is presented.

2.1. Overview of cancer: Meaning and types of cancer

Cancer is a class of diseases characterized by out-of-control cell growth. Cancer harms the body when altered cells divide uncontrollably to form lumps or masses of tissue called tumors (except in the case of leukemia where cancer prohibits normal blood function by abnormal cell division in the blood stream). Tumors can grow and interfere with the digestive, nervous, and circulatory systems and they can release hormones that alter body function(Jemal, et al., 2010). Tumors that stay in one spot and demonstrate limited growth are generally considered to be benign (Jemal, et al., 2010). Cancer cells can spread to other parts of the body through the blood and lymph systems. When a tumor successfully spreads to other parts of the body and grows, invading and destroying other healthy tissues, it is said to have metastasized. This process itself is called metastasis, and the result is a serious condition that is very difficult to treat (Jemal, et al., 2010).

2.2. Prevalence of cancer

According to WHO, an estimated 14.1 million new cancer cases and 8.2 million cancer-related deaths occurred in 2012, but in 2008 it was 12.7 million and 7.6 million, respectively. Prevalence

estimates for 2012 show that there were 32.6 million people (over the age of 15 years) alive who had had a cancer diagnosed in the previous five years. The most commonly diagnosed cancers worldwide were those of the lung (1.8 million, 13.0% of the total), breast (1.7 million, 11.9%), and colorectal (1.4 million, 9.7%). The most common causes of cancer death were cancers of the lung (1.6 million, 19.4% of the total), liver (0.8 million, 9.1%), and stomach (0.7 million, 8.8%). Projections based on the WHO, 2012 estimates predict a substantive increase to 19.3 million new cancer cases per year by 2025, due to growth and ageing of the global population. More than half of all cancers (56.8%) and cancer deaths (64.9%) in 2012 occurred in less developed regions of the world, and these proportions will increase further by 2025 (WHO, 2012).

2.3. The global cancer pandemic

There are significant regional differences in cancer prevalence, but the biggest cancer killers worldwide are lung cancer (1.4 million deaths in 2008), stomach cancer (740,000 deaths in 2008), liver cancer (700,000 deaths in 2008), colorectal cancer (610,000 deaths in 2008), and breast cancer (460,000 deaths in 2008) (World Health Organization, 2013). In addition to the impact on loss of life, the economic impact of cancer is huge. Currently it is estimated that the disease costs economies across the world an estimated $290 billion in 2010 - $154 billion of which were medical costs (WEF report,2011).

The incidence and burden of cancer is huge and is set to rise. Cancer kills more people on a global scale than AIDS, malaria and TB combined. Many of the 600,000 deaths each month attributed to cancer can be prevented with increased governmental support and funding for prevention, detection and treatment programs. The incidence of cancer is highest in developed countries, particularly in Northern America, Australia and New Zealand and in Northern and Western Europe. However, the impact in the developing world is growing at an alarming rate.

More than 70% of all cancer deaths already occur in low- and middle-income countries and these regions are projected to account for two thirds of all cases of cancer worldwide by 2050 (an increase of 15% since 1975) (Bray, et al, 2006).

2.4. Causes of cancer

There are about 200 known types of cancer (Cancer Research United Kingdom, 2013).As with most illnesses cancer is multi -factorial, meaning there is no single cause for any one type of cancer.

C**ancer-causing)substances (carcinogens)** - Genes are coded messages inside a cell that tell it how to behave (i.e. which proteins to make.

Age – Many types of cancer become more prevalent with age. The longer people live, the more exposure there is to carcinogens and the more time there is for genetic changes or mutations to occur within their cells.

Genetics – Some people are unfortunately born with a genetically inherited high risk for a specific cancer (‘genetic predisposition). This does not mean developing cancer is guaranteed, but a genetic predisposition makes the disease more likely. For example, women that carry the BRCA 1 and BRCA 2 breast cancer genes have a higher predisposition to developing this form of cancer than women with a normal breast cancer risk (National Cancer Institute, 2013).

The immune system - People who have weakened immune systems are more at risk of developing some types of cancer.

Bodyweight, diet and physical activity - Cancer experts estimate that maintaining a healthy bodyweight, making changes to our diet and taking regular physical activity could prevent about one in three deaths from cancer

Overweight or obesity -'Obese' means being more than about 25% overweight. Overweight or obese people have an increased risk of bowel and pancreatic cancer.

Alcohol -The evidence that all types of alcoholic drinks are a cause of a number of cancers is now stronger than ever before (World Cancer Research Fund,2013).

Tobacco – Tobacco smoke contains at least 80 different cancer-causing substances (carcinogenic agents). When smoke is inhaled the chemicals enter the lungs, pass into the blood stream and are transported throughout the body (Cancer Research UK, 2013).

Ionizing radiation – Manmade sources of radiation can cause cancer and are a risk for workers. The main risk is however, prolonged and unprotected exposure to ultraviolet radiations from the sun which can lead to melanoma and skin malignancies (Cancer Research UK, 2013).

Work place hazards - Some people risk being exposed to a cancer causing substance because of the work that they do. For example, workers in the chemical dye industry have been found to have a higher incidence than normal of bladder cancer (Cancer Research UK, 2013) which most commonly affects the covering of the lungs (pleura).

Infection – A proportion of cancers can be caused by infection with a virus. However, this does not mean that these cancers can be caught like an infection; rather the virus can cause changes (Cancer Research UK, 2013)in cells that make them more likely to become cancerous.

2.5. Treatments of cancer

Given both the high cancer incidence and continuous advances in cancer detection, multimodal treatments and targeted therapies, the proportion of cancer survivors continues to grow in industrialized countries. Cancer survivorship covers a variety of medical conditions and periods that are divided into acute survival, middle and long-term survival including disease-free survival

as well as cancer recurrence and chronic disease (Brearley, et al, 2011). Thus, short, middle and long-term survivorship has significant implications for both clinical and psychosocial research as well as for health care services research (Alfan, Rowland, 2006).

There are many types of cancer treatment. The types of treatment that patients receive can depend on the type of cancer patients have and how advanced it is. The main types of cancer treatment include: Surgery, Radiation Therapy, Chemotherapy, Immunotherapy, Targeted Therapy, Hormone Therapy, Stem Cell Transplant and Precision Medicine. Some people can have only one treatment. But most people have a combination of treatments, such as surgery with chemotherapy and/or radiation therapy (Alfan, Rowland, 2006).

2.6. Consequences of cancer

Cancer is a leading cause of death worldwide and accounted for 7.4 million deaths (around 13% of all deaths) in 2004 (WHO, 2009). Cancer is significantly associated with high morbidity and mortality and its diagnosis is often regarded by many as a death sentence. Death from cancer worldwide are projected to continue rising, with an estimated 11.5 million deaths in 2030 (Keating and Cambrosio, 2012).

Cancer is associated with significant psychosocial morbidity. Many researchers have reported that six mental disorders occur more frequently in cancer patients to warrant a detailed assessment and clinical intervention. Three represent direct reaction to illness: adjustment disorders with depression and/or anxiety, major depression and delirium(Iqbal, 2002 &Rouhami, 2000). Others (primarily anxiety disorders, personality disorders and major depressive disorders) are preexisting conditions often exacerbated by the illness (Iqbal, 2002 &Rouhami, 2000). In this sense, cancer causes a disaster and a dramatic breakdown in the psychic balance of the person (Ozkan, 2002).

Depression and anxiety are two of the most commonly experienced psychological conditions experienced by patients with cancer (Chapman, 1979; Takahashi, et al., 2008) and are associated with unique psycho physiological side effects that importantly encompass poorer treatment outcomes, (Jacobsen & Jim, 2008), increased period of hospitalization and higher mortality rate (Gramignano, 2006; Van &Arends, 2005). Cancer patients might be vulnerable to depression and anxiety for many reasons: reactions to cancer diagnosis, the presence of unpleasant symptoms associated with cancer (such as pain, nausea and fatigue), and concerns about disease recurrence or progression. Besides, the physiologic effects of certain treatments (such as high-dose interferon therapy, radiotherapy and chemotherapy) also influenced anxiety and depression (Van &Arends, 2005).

2.7. Prevalence of depression among cancer patients

Depression is negative mood along with low energy, poor concentration, loss of interests, memory disturbances, low self-esteem, guilt feelings, hypochondriac preoccupation, sleep and appetite disturbances and hopelessness (PurohitSamit, et al., 2010).Although many research groups have assessed depression in cancer patients since the 1960s, the reported prevalence varies significantly because of varying conceptualizations of depression, different criteria used to define depression, differences in methodological approaches to the measurement of depression, and different populations studied(Weissma,et al., 1998). Depression is highly associated with oro pharyngeal (22%–57%), pancreatic (33%–50%), breast (1.5%–46%), and lung (11%–44%) cancers(Weissma, etal., 1998).A less high prevalence of depression is reported in patients with other cancers, such as colon (13%–25%), gynecological (12%–23%), and lymphoma (8%–19%)(Weissma, et al,1998).

Depression in cancer patients may result from (a) situational stress related to the cancer diagnosis and treatment (b) medications (steroids, interferon, or other chemotherapeutic agents) (c) a biologically determined depression (endogenous or major depression), which is not related to a precipitating event, or (d) recurrence of a bipolar mood disorder(Lesko, 1997). The first two are the most common. Though the exact etiology of depression in cancer is unknown, several factors have been suggested including the emotional impact of a cancer diagnosis, side effects of treatment, progression of cancer with associated disability, and symptoms and cerebral dysfunction associated with carcinomatosis (ACOG Committee Opinion, 2009), disruption of key relationship, dependence, disability, disfigurement and approaching death (Holland, 2003).Additional risk factors specific for the development of depression in cancer patients include certain primary tumor sites, advanced disease state with declining physical status, and certain anticancer treatment methods including particular surgical procedures, chemotherapeutic regimens, and radiotherapy (Greer, Silberfarb, 1982).A cross sectional community based study conducted in the United States indicates that prevalence rates of depression have dramatically increased over the past 50 years and it is serious mental illness affecting more than 13 million Americans, or approximately 6.6% of the population in a given year and second leading cause of disability (Hideaki, Yosuke, Shigeto, 2006).A study done in the USA on the occurrence, assessment and treatment of depression in cancer patients showed that the majority of the rates for major depressive disorder fall between 10% and 25% of patients (William, 2004). Another study in the USA on major depression, adjustment disorders and post -traumatic stress disorder in terminally ill cancer patients and associated and predictive factors showed that the proportions of patients diagnosed with major depression were 6.7% at baseline and 11.8% at follow up (Ttsuo et al., 2004).

A cross sectional study done in France on screening for adjustment disorders and major depressive disorders in cancer in-patients found a prevalence of major depressive disorder 25.5% (Darius et al, 1990). A study done in china found prevalence rates of depression 60.62% for head and neck cancer, 77.19% for lung cancer, 57.9% for breast cancer, 75.81% for esophagus cancer, 63.40 % for stomach cancer, 68.42 % for liver cancer, 54.37 % for colorectal cancer, and 71.13% for cervix cancer (Jin & Jun, 2014).In another study conducted in Turkey, the prevalence of depression and anxiety in cancer patients and their relatives showed that 29.1% patients had mild and 18.2% had severe depression (Alacacioglu et al., 2013).

In additional, a study done in Kuwait on psychiatric morbidity among cancer patients showed that prevalence of mild, moderate and severe depression was 16.5 %, 18.5% and 10.7% respectively (Satin, Linden, & Phillips, 2009).One study done in Nigeria on measured effect of some socio-demographic factors on depression among breast cancer patients receiving chemotherapy in Lagos State University Teaching Hospital showed that 39.4%of the respondents had minimal depression, 36.4% of them had mild depression, 9.1% had moderate depression, and 15.2% had severe depression. The multiple regression analysis results showed that being informed about breast cancer, cancer stage and educational level significantly predicted participants' level of depression (Odanye, 2011).Another study done in Nigeria showed prevalence of depression was 30%. Having an advanced stage of cancer, presence of pain, and having a family history of mental illness were significantly associated with being depressed. Depressed patients had poorer quality of life (Martin, 2011).Additionally study conducted in Nigeria showed that the prevalence of depression was 40.3%. The independent correlates of depression included being not married, perceived poor social support and advanced stage of the cancer (Abiodun, 2012).

Studies evaluating the correlation of depression with disease progression in women with breast cancer have shown inconsistent results. Silberfarb and colleagues found less depression in women with advanced breast cancer (4.5%) than in those with recurrent disease (15%) (Silberfarb and collages,98). Physical disability did not relate to emotional disturbance. Hopwood and colleagues (1991) reported that ambulatory advanced breast cancer patients had 20% depression prevalence in one study and 9% depression in another. Jenkins and colleagues (1991) found a 32% prevalence of depression in 22 women with local recurrence comparable with rates found with mastectomy. Pinder and colleagues (1991) found a 13% prevalence of depression in advanced breast cancer patients (N = 139); increased levels of depression were found in those with lowest socioeconomic status, poorest performance status, and closer proximity to death.

Evans and colleagues (1986) studied 83 women with gynecologic cancer and found a 23% prevalence of depression and 24% prevalence of adjustment disorder with depressed mood. Krouse and Krouse (1981) found more severe depression (prevalence not cited) and poor body image among gynecologic patients as compared with women with breast cancer undergoing mastectomy. Golden and others (1991) found a 23% rate of major depression in 83 hospitalized women with cervical, endometrial, and vaginal cancer.

In a study of 107 newly diagnosed head and neck cancer patients, Baile and colleagues (1992) reported that 16.8% had major depression or an adjustment disorder and 33.6% met the criteria for alcohol dependence, 6.5% for alcohol abuse, and 32.7% for nicotine dependence. An association of advanced cancer stage and living alone with psychological distress was also found to be significant. Baile and colleagues (1992) found that alcohol use was prevalent in patients with both benign and malignant head and neck lesions. In a study of 18 head and neck cancer patients, Godding and colleagues (1995) found that the degree of depression and distress decreased with

increasing age. Rapaport and colleagues (1993) studied 357 head and neck cancer patients and found that patients who reported a higher level of mental distress and frequently scored as a possible or probable case of psychiatric disorder were patients who had lower performance status and more advanced disease.

In a study of depression and anxiety in 129 lung cancer patients, before and after diagnosis, Hughes (1985) found that 10% of patients had severe anxiety symptoms and 12% had symptoms of depression at first presentation to their chest physician. Popkin& Tucker (1994)studied 987 lung cancer patients and found that depression was common and persistent and that it was more prevalent for those patients with more severe symptoms and functional limitations. Depression was more prevalent in patients with small cell lung cancer than those with non-small cell lung cancer (NSCLC).

In a study of 129 newly diagnosed NSCLC patients, using a clinical interview that generated a DSM-III diagnosis, Wells and colleagues (1988) reported a high prevalence of psychiatric disorders. The most common psychiatric disorder at baseline was nicotine dependence (67%), followed by adjustment disorders (14%), alcohol dependence (13%), and major depression (5%).Montazer iand colleagues (1998) used HADS as an assessment measure and reported that 50% of their samples of 60 patients with inoperable lung cancer were borderline depressed and 37% were depressed.

Generally Cancer types highly associated with depression include oro- pharyngeal (22%–57%) (Davies and colleagues, 1986), pancreatic (33%–50%) (Fras and colleagues, 1997), breast (1.5%–46%) (Sneeuw and colleagues, 1992), and lung (11%–44%) (Montazeri and colleagues, 1998) A less high prevalence of depression is reported in patients with other cancers, such as colon (13%–

25%) (Fras and colleagues, 1997), gynecological (12%–23%) (Evans and colleagues, 1996) and lymphoma (8%–19%) (Devlen & colleagues, 1999).According to study on the types of cancer it was found that the prevalence of depression among the breast cancer patients 37.0% depressed and 28.0% of patients with breast cancer were anxious which by using HADS scale (Srivastava , *et al*., 2016).Study conduct in Iran with HADS, demonstrated that there were significant relationships between depression and anxiety with the type of cancer, for instance result on depression and anxiety showed that breast 28.1% and 32%, colon 9.4% and 4%, thyroid cancer 4% and 3.1% respectively.(Nikbakhsh, *et al*., 2014).Saniah & Zainal 2010 reported that prevalence for depression was 19.1% prevalence for anxiety was 24.1%.

2.8. Prevalence of anxiety among cancer patients

Anxiety occurs in many patients with cancer varying from the "normal" worries and fears associated with a life threatening illness, through sub-syndromal distress, adjustment disorders, and generalized anxiety disorders and anxiety due to the medical condition (Noyes, 1986).The four common causes of anxiety in patients with cancer are situational, disease related, treatment related and exacerbation of preexisting of anxiety disorder (Holland, 1996).

The causes of anxiety disorders are a combination of genetic and environmental factors (Calleo& Stanley, 2008).Risk factors include a history of child abuse, family history of mental disorders, and poverty. Anxiety disorders often occur with other mental disorders; particularly major depressive disorder, personality disorder, and substance use disorder (Craske& Stein, 2016). To be diagnosed symptoms typically need to be present at least six months, be more than would be expected for the situation, and decrease functioning (Craske& Stein, 2016). Other problems that may result in similar symptoms include hyperthyroidism, heart disease, caffeine, alcohol, or

cannabis use, and withdrawal from certain drugs, among others (Testa et al., 2013). Without treatment, anxiety disorders tend to remain. Treatment may include lifestyle changes, counseling, and medications.

Anxiety symptoms are common at the initial stage of cancer diagnosis, during treatment decisions, as well as with concerns about return of the disease or disease progression but rate of fully developed anxiety disorder is not significantly higher from the one in general population. Contrary to all assumptions patients with advanced cancer have less fear of death but greater from uncontrollable pain, state of loneliness and dependence on others(Bras, 2009). The experience of life threatening disease, as cancer, can lead to development of Posttraumatic stress disorder (PTSD) (Bras, 2009). Some of the risk factors for PTSD occurrence after cancer include past experience of stress life events, history of psychological disorders, and high level of distress prior to cancer diagnosis, coping through avoidance, poor social support and worse physical functioning (Bras, 2009).

Most frequent is situational anxiety associated with hearing the diagnosis, or reaching a crisis in illness or treatment, during conflicts with family, anticipating a frightening procedure or a test result, and fear of recurrence(Stark, Kiely et al., 2002). Study conducted in Great Britain showed that 48% of cancer patients have anxiety (Stark, Kiely et al., 2002). A study carried out in china among Chinese adults with cancer showed that the prevalence of anxiety disorders were 49.69% (Yi-Long, 2013). In another study done in Malaysia on anxiety and coping strategies in cancer patients, the prevalence of anxiety was found to be 24.1%(Bras, 2009). One study done in Kuwait among cancer patients showed that the prevalence of anxiety among cancer patients was 8.5% (Satin &Linden et al., 2009).

Study done in University Malaya Medical Centre was invited to participate in the study. It reported that prevalence for anxiety was 24.1% with HADS (Saniah &Zainal 2010).Study done in China the anxiety score was significantly higher in patients at the cancer stage (Yi-Long,2014).Study conduct in Iran with HADS, demonstrated that there were significantly associated anxiety with the type of cancer; for instance result on anxiety showed that breast cancer had 32%, colon 9.4%, thyroid cancer 4% (Nikbakhsh, *et al.*,2014).Saniah &Zainal (2010) reported that prevalence for anxiety was 24.1%.

2.9. Factors associated with depression and anxiety among cancer patients

2.9.1 Factors associated with depression among cancer patients

Depression is a common experience among cancer patients. Studies utilizing both self-report and clinical observations suggest that major depression affects approximately 25% of cancer patients (Weissman, et al., 1998).It is also responsible for the largest percentage of psychiatric consultations for cancer patients. For example, Massie and Holland found that among 546 patients referred for consultation due to emotional distress, 54% had diagnoses of adjustment disorder with depressed mood and another 9% had diagnoses of major depressive disorder (Massie and Holland, 2006).

Another study found a fourfold increase in the rate of depression among oncology patients as compared to the general population, underscoring the seriousness of the problem (Rainville et al, 2002). Factors associated with greater prevalence of depression include a higher level of physical disability, advanced disease stage and the presence of pain (Rainville et al., 2002). Also, higher rates of depression have been associated with the side effects of medications and treatment for cancer. Chemotherapy and oncological surgical procedures are a source of possible iatrogenic ally-

induced depression in cancer patients because of their negative side effects that may include body image disturbances and physical symptoms (Hideaki, Yosuke, Shigeto, 2006). For example, it has been estimated that 40% to 60% of patients' emotional distress is directly attributable to the cancer treatment itself. Lower performance status, concern about being a burden to others and lower satisfaction with social support were significantly associated with major depression at baseline (Ttsuo, et al., 2004).

Study done in University of Delhion factors associated with prevalence of depression among cancer patients found that cancer site, age, disease stage, time from diagnosis and cancer treatment are important predictors of depression. Personal variables such as cultural and ethnical characteristics, religious attitudes, social economic status, personality traits, coping styles, social support, and distance from hospital are also very important variables that are mostly associated with the prevalence of depression among cancer patients (PurohitSamit, Kumar &Bhatia, 2010).
A systematic review of observational studies in Malaysia on prevalence of depression in breast cancer survivors showed that prevalence of depression is 22% and depression was associated with several socio-demographic variables, cancer-related factors, treatment-related factors, psychological factors, lifestyle factors, social support and quality of life (Nor, et al., 2013). Age less than 40 years, gastrointestinal malignancies, chest tumors and breast cancer were significantly associated with depression (Jadoon, 2010).

Another study done in Nigeria found a prevalence of depression of 30%, and having an advanced stage of cancer, presence of pain, and having a family history of mental illness were significantly associated with being depressed (Villemure & Bushnell, 2002).The independent correlates of depression included being not married, perceived poor social support and advanced stage of the cancer (Popoola &Adewuya, 2012).

Numerous studies have also investigated various psychosocial risk factors for developing depression among cancer patients. Some of these risks identified include premorbid coping skills, social isolation, and first degree relatives with a history of cancer and depression, a personal history of depression, a personal history of alcohol or other substance abuse, and socioeconomic pressures(Asmundson, et al., 2002).

2.9.2. Factors associated with anxiety among cancer patients

Oncology patients often experience anxiety, for example, while waiting to hear their diagnosis, before procedures, treatment and diagnostic tests, and while waiting for test results (Rainville et al., 2002).In addition, cancer treatments themselves can be anxiety provoking and may contribute to the actual psychological morbidity of patients with cancer (Villemure & Bushnell, 2002). Studies indicate that anxiety can increase during certain periods of the disease, such as the discovery of the tumor, then peaks during surgery and remains high until a year subsequent when it begins to decline (Rainville, et al., 2002). For some patients, anxiety can become so severe that they may be unable to adhere adequately to their medical treatment and seek to avoid fear-provoking procedures (Vlaeyen& Linton, 2002).

Anxiety disorders appear to be more common in persons with cancer than controls or other chronic illnesses in the general population. For example, one study found moderate to severe anxiety in 27% of a sample of breast cancer patients as compared to 14% in a control sample (Asmundson, et al., 2002). In addition to that, 28% of advanced melanoma patients as having anxiety compared to 15% of familial melanoma patients with no diseases (Keogh &Cochrane, 2002). Study reported that anxiety accounted for 16% of requests for psychiatric consultations among inpatients (Miller &Massie, 2006).

Some researchers have suggested that cancer survivors may respond to the psychological distress and uncertainty about the future by displaying PTSD-like symptoms similar to those experienced by victims of war or environmental disasters (Keefe, et al., 2002). Some of these symptoms have been reported as somatic vigilance and recurrent recollection of illness-related events, as well as symptomatology around anniversary dates. However, these symptoms appear to dissipate over time as the fear of recurrence lessens. Other studies have reported symptoms characteristic of stress or trauma symptoms in survivors of cancer, such as avoidant behaviors, intrusive thoughts, and heightened arousability (Keefe, et al., 2005). Study conducted in Great Britain showed that 48% of cancer patients have anxiety and also female sex and negative aspects of social support were associated with anxiety (Stark, et al., 2002). Anxiety levels were higher in women, in people with low socio-economic level, in people having a time period between diagnosis and participation in the study longer than 6 months, and in people having relapsing disease (Alacacioglu, et al., 2013).Advanced cancer stage and living alone with psychological distress was also found to be significant (Baile and colleagues 1992).

A majority of cancers in Africa are diagnosed at an advanced stage of disease because of lack of screening and early detection services, as well as limited awareness of early signs and symptoms of cancer among the public and health care providers (Jemal et al., 2010).Stigma associated with a diagnosis of cancer also plays a role in late-stage presentation in most parts of Africa (Jemal et al., 2010).

Stage 0: This stage describes cancer in situ, which means “in place.” Stage 0 cancers are still located in the place they started and have not spread to nearby tissues. This stage of cancer is often highly curable, usually by removing the entire tumor with surgery.

Stage I: This stage is usually a small cancer or tumor that has not grown deeply into nearby tissues. It also has not spread to the lymph nodes or other parts of the body. It is often called early-stage cancer.

Stage II & III: These stages indicate larger cancers or tumors that have grown more deeply into nearby tissue; they may have also spread to lymph nodes but not to other parts of the body.

Stage IV: This stage means that the cancer has spread to other organs or parts of the body. It may also be called advanced or metastatic cancer.

Staging helps describe where a cancer is located, if or where it has spread, and whether it is affecting the other parts of the body. Doctors often use tests to determine a cancer's stage. Staging may not be complete until all of the tests are finished (Jemal et al., 2010). Knowing the stage helps the doctor:

- Plan treatment, including the type of surgery and whether chemotherapy or radiation therapy are needed
- Predict the chance that the cancer will come back after the original treatment
- Predict the chance of recovery
- Talk about the diagnosis in a clear, common language with the entire health care team
- Determine treatment effectiveness and Compare larger populations with the same diagnosis to research new, more effective cancer treatments

Pain is said to be one of the most feared and distressing symptoms of cancer (Bruera, Kim, 2003) and one that disrupts all aspects of life (Foley, 1996). Research has demonstrated that

despite the effective analgesic therapy and an array of treatment modalities currently available as a result of advances in the area of neuro-oncology (Foley, 2000), there has not been a significant reduction in the prevalence of pain in patients with cancer (Vainio, Aveinen, 1996).

Cancer pain has a significant impact on the overall quality of a cancer patient's life by influencing physical, psychological, and spiritual aspects (Ahmedzai, 1995). Pain is the end product of a complex process that may involve emotional, spiritual, cognitive, and sensory components (Chapman, 1998). Cancer pain has characteristics of both chronic and acute pain. Like acute pain, cancer pain is directly associated with tissue damage. When cancer pain persists and worsens, it can serve as a sign of the progression of disease (Ahles, Blanchard, et al., 1983)and can create a sense of hopelessness because patients fear that their lives are not worth continuing or patients lose the meaning of living if they must live in pain (Ferrell, 1995).

During the past two decades, a small body of research has accumulated that suggests a relationship between pain and mood disturbance in patients with cancer. Gerbershagen studied health-related quality of life in patients with prostate cancer patients with and without pain (Gerbershagen,Ozgur, et al., 2007). They found that depressive symptoms are significantly more frequent in pain patients than in patient without pain. Another study compared patients with and without pain who were matched by site and progression of disease (Ahles, Blanchard et al., 1983). Patients with pain scored higher on measures of depression as well as anxiety, hostility, and somatization.

Pain is a multidimensional experience, far beyond a nociceptive signal. It is rooted in our socio-cultural context and belief system (Boothby, Thorn et al., 1999). Beliefs about cause, control, duration, outcome and blame are especially important. Even Lame et al (Lame, Peters et

al., 2005) indicated that quality of life in chronic pain is more associated with beliefs about pain, than with pain intensity.

One of the first efforts in psycho oncology was to obtain objective data on the type and frequency of psychological problems in cancer patients. Using criteria from the Diagnostic and Statistical Manual of Mental Disorders-Third Edition(DSM-III)(American Psychiatric Association, 1980).Classification of psychiatric disorders, the Psychosocial Collaborative Oncology Group determined the psychiatric disorders in 215 randomly selected hospitalized and ambulatory adult cancer patients in three cancer centers by structured clinical interview (Derogatis, 1983). Thirty-nine percent of those who received a psychiatric diagnosis experienced significant pain. In contrast, only 19% of patients who did not receive a psychiatric diagnosis had significant pain. The psychiatric diagnosis of the patients with pain was predominately adjustment disorder with depressed or mixed mood (69%), but of note, 15% of patients with significant pain had symptoms of a major depression.

Although certain cognitions and beliefs may be adaptive and help patients to cope with the experience of pain, others may actually contribute to increased pain and affective distress. Identification of adaptive and maladaptive pain-related beliefs and cognitions might improve our understanding of individual responses to chronic pain and contribute to more effective treatment interventions (Jensen, Turner et al., 1994). Cognitive-behavioral models of chronic pain emphasize the importance of pain-related cognitions and beliefs in pain adjustment (Meagher, 1982).Pain beliefs serve the function of helping human beings to gain a stable understanding of the events that they have, or will be experiencing (Thorn, Williams, 1992). The belief that pain is understandable has been associated with better treatment compliance and use of adaptive coping strategies, while

the belief that pain is mysterious has been associated with greater use of catastrophizing (Williams, Keefe, 1991).

In chronic non-cancer pain, it is generally agreed that the meaning assigned to pain can play an important role in the experience of pain and in the response to treatment. Several studies have demonstrated the impact of pain cognition on patients' pain experience, disability, distress, non-adherence, and outcome of treatment (Stroud, Thorn et al., 2000).For instance, in a study (Stroud, Thorn et al., 2000) after controlling for demographics, employment status and pain severity, pain beliefs and cognitions accounted for a significant amount of the variance in general activity, pain interference, and affective distress. The importance of beliefs about the meaning of symptoms, how they should be managed, ability to control pain, and worry about the future have been shown to be associated with psychological functioning, physical functioning, coping, and response to treatment (Turk, Okifuji, 2002).However, up until the last decade, very few researchers addressed the cognitive dimension of pain in cancer patients. Given the high importance of pain belief in quality of life (Williams, Keefe, 1991), it is reasonable to assess the impact that pain beliefs, may have on depression and anxiety in cancer patients.

Social support has been defined in the literature as the assistance and protection given to others, especially to individuals. Support and assistance from family members is helpful in aiding the patient cope with stress resulting from the disease and treatment. Scientists have for many years recognized a positive relationship between social support and health (Tan and Karabulutlu, 2005). Social support is well documented as one of the most popular and preferred modes of coping with hopelessness; indeed, this is also indicated in the general population (Scherer- Rath, 2001). There is apparent debate as to the relative importance of social support, including

instrumental, emotional, and informational support, versus social networks, the ties through which support is provided to cancer survival. Social support, spiritual support, and disease-related factors like metastasis, performance status, and duration of cancer diagnosis need to be considered in nursing intervention in order to maintain a fighting spirit and to overcome feelings of hopelessness and depression in cancer patients (Pessin et al., 2002). Determining the perceived levels of social support from the family and the levels of anxiety and depression of individuals with cancer is important in planning the care for these patients, in ensuring the contribution of families, and in increasing life quality, thereby increasing the quality of care.

In a study of negative and positive influences of social support on depression in patients with head and neck cancer, Grassiand colleagues (1996) found that the availability of support led to fewer depressive symptoms, but the effect of received support was equivocal. In another report, Grassiand colleagues (1996) assessed the predictive values of numerous pretreatment variables. Tumor stage, sex, depressive symptoms, openness to discuss cancer in the family, available support, received emotional support, tumor-related symptoms, and size of an informal social network were calculated 6 months to 3 years after treatment.

They concluded that these variables could be used to accurately predict which head and neck cancer patients were more likely to become depressed up to 3years after treatment.

2.10.3. Conceptual Framework

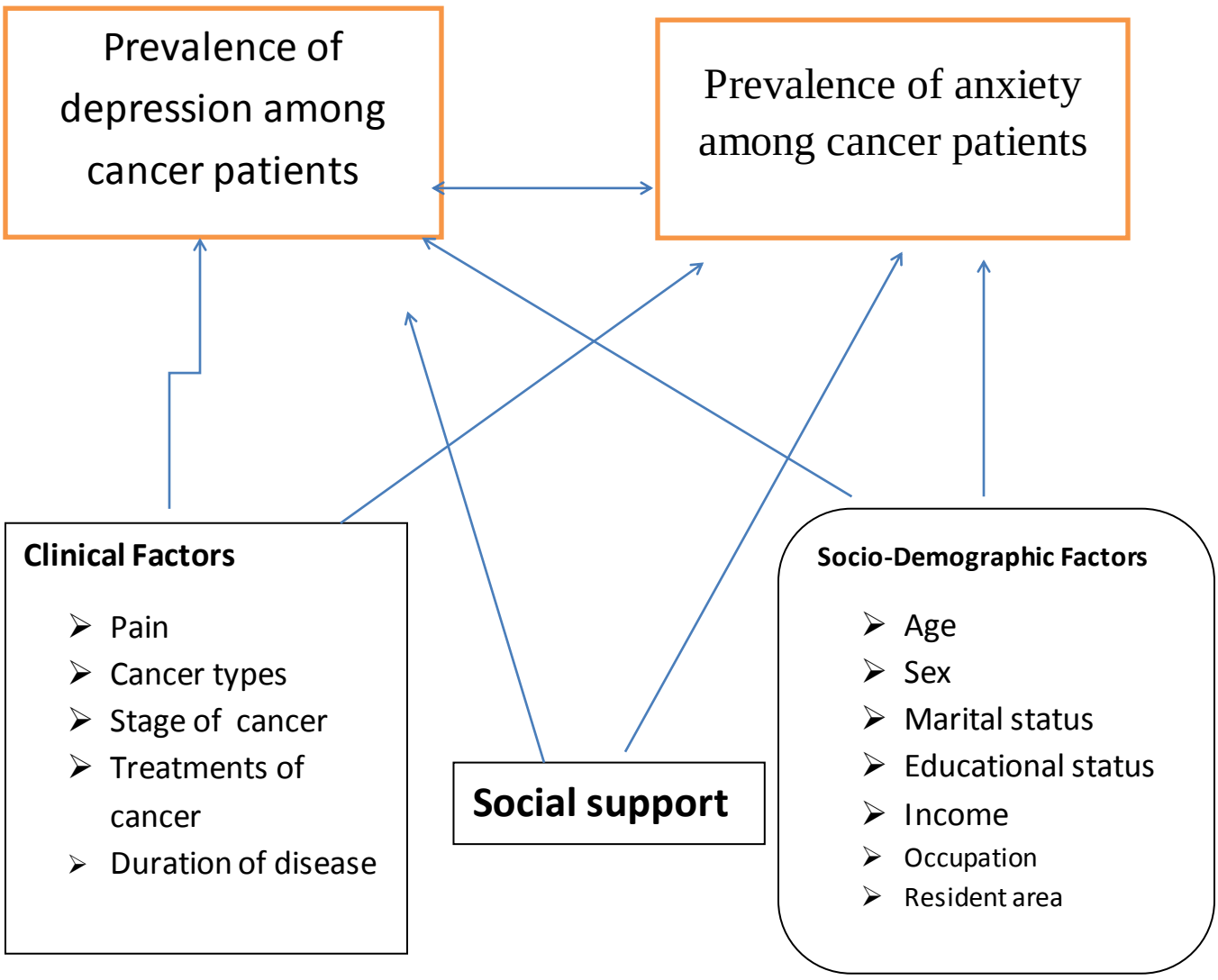

Figure 1. Conceptual framework prevalence of depression and anxiety and associated factors.

CHAPTER THREE

3. METHODS

3.1. Study Design

A facility-based cross sectional study design was employed. This is to obtain all the pertinent information from respondents at one point in time.

3.2. Study Setting

This study was conducted Tikur Anbessa Specialized Hospital. Tikur Anbessa Specialized Hospital is found in Addis Ababa within Lideta Sub-City. This Hospital is giving health services like medical management, surgical intervention, obstetric and gynecological management, pediatric and other essential services for the population. It is also a teaching hospital and has 900 beds for inpatient service. Of those beds, around 32 beds are occupied by cancer patients. The Oncology clinic in the hospital is providing cancer care services by three doctors and seven nurses (Black Lion Specialized Hospital Registrar Office, 2016). In the oncology clinic, there have been 10,400 cancer cases registered since the establishment of cancer registry office in 2012 (Black Lion Specialized Hospital Registrar Office, 2016).

3.3. Population

The target population for this study was all cancer patients who are attending the Oncology Clinic at Tikur Anbessa Specialized Hospital from Sep, 2013 to Aug., 2016 G.C.

Inclusion criteria

- All adult cancer patients, attending the oncology clinic at Tikur Anbessa Specialized Hospital from 2013-2016 G.C before the date of this survey.
- Age greater than or equal to 18years

Exclusion criteria

- Unable to hear and speak
- The presence of severe physical, cognitive or language impairments that would interfere with a patient's ability to give informed consent for research
- Those who are attending the oncology clinic at before 2013 G.C
- Age below 18 years

3.4. Sample Size Determination

The sample size required for this study was determined by using single population proportion formula considering the following assumptions.

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

n = minimum sample size required for the study

Z= standard normal distribution with confidence interval of 95%, Z=1.96

d = Absolute precision or tolerable margin of error (d=0.05)

P= is the anticipated population proportion

Since no similar study was conducted previously in Ethiopia, the prevalence of anxiety and depression among cancer patients was considered as 50%. Therefore, 50% was used to anticipate the proportion of the population of cancer patients who experience anxiety and depression.

Therefore, the sample size required for the study was calculated as follows

$n = \frac{0.5(1-0.5)1.96^2}{(0.05)^2} = 384$

3.5. Sampling Technique

To ensure a high degree of representativeness of all the strata or layers in different cancer types (Jackson, 2011).Stratified random sampling method was employed. From the cancer department at Tikur Anbesa Hospital, 4 cancer types (breast, cervical, thyroid, and colon) and other types of cancer were selected using lottery method due to time and resource limitations. The list of potential participants was obtained from Cancer Department administration office together with their medical card number.399 breast, 203 cervical, 134 thyroids, 61 colonand403 other types of cancer patients .Accordingly, the proportion number sample from breast, cervical, thyroid, colon and other types of cancer as once, were128, 65, 43, 19 and 129, respectively which made the total sample size of 384.Although Systematic random sampling technique along with simple random sampling was employed in order to select the sample units for this study. Systematic sampling is a random sampling technique which is frequently chosen by researchers for its simplicity, its periodic quality and samples have the same probability of being chosen (Jackson, 2011).The sampling interval was found to be every 3rd patient, which was calculated by dividing the sampling frame (1200) by the required sample size (384 cancer patients).The first individual was selected using with lottery method and rest were picked in orderly of every 3rd number.

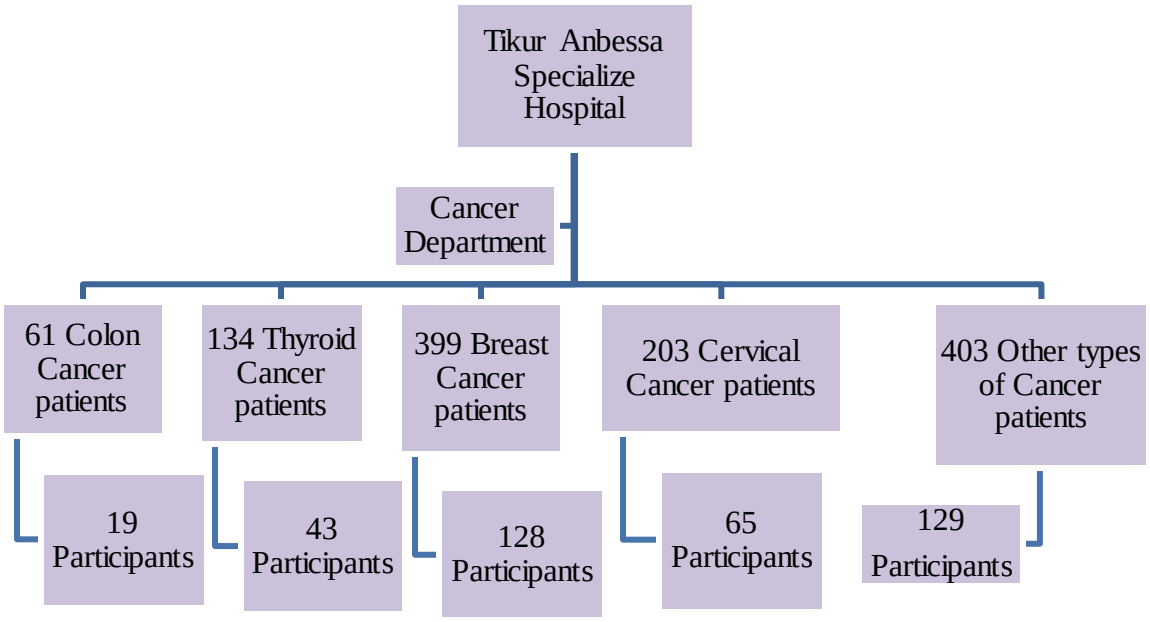

Figure 2:Schematic Illustration of the sampling procedure

3.6. Data Collection Instruments

Self-report questionnaire was used to collect the required data for this study. The questionnaire has three parts :a socio-demographic questionnaire, Hospital Anxiety and Depression Scale (HADS), both depression and anxiety checked the internal consistency of the tool; Cronbach's alpha analysis was conducted with the value of 0.88, Depression was 0.804 and anxiety was 0.786 which implies that the items have high internal consistency .Oslo 3-items Social Support Scale Cronbach's alpha analysis was conducted with the value of0.678 and Pain Beliefs and Perceptions Inventory (PBPI) with the value of 0.641which implies that both social support scale and Pain Beliefs and Perceptions Inventory (PBPI) items have relatively good internal consistency.

The socio-demographic questionnaire has 7 items and prepared by the researcher specifically for the purposes of this study to assess the patients' background information such as sex, age, marital status, occupation, income, education, and place of residence.

Pain Beliefs and Perceptions Inventory (PBPI) was used to measure pain beliefs among cancer patients. This is a 16-item scale that measures the extent of agreement or disagreement with certain beliefs about pain (Williams, Thorn, 1987). The instrument measures four dimensions of pain beliefs: (1) constancy, the belief that pain is constant; (2) permanence, the belief that pain is permanent; (3) self-blame, the belief that one is to blame for one's pain, and (4) mystery, the belief that pain is confusing and mysterious. Respondents rated the statements on a Likert scale from completely agree to completely disagree. For each dimension scores range between -8 and 8. Higher scores on each dimension indicate more maladaptive beliefs and perceptions about pain(Williams, Thorn, 1987). The validation study of the Iranian version of the PBPI proved that it is a reliable and valid measure of pain beliefs and perceptions (Williams, Thorn, 1987). Clinical Characteristics such as Cancer stages will categorize into "0", "I", "II", "III" and "IV", types of cancer, treatment of cancer and duration of disease will be recorded.

Hospital Anxiety and Depression Scale (HADS) is a self-report questionnaire developed to detect anxiety and depressive symptoms (Zigmond & Snaith, 1983). Hospital anxiety and depression scale (HADS) is a useful instrument for screening depression and anxiety in clinical settings. Its purpose is to provide clinicians with an acceptable, reliable, valid and easy to use practical tool for identifying and quantifying depression and anxiety (Zigmond&Snaith, 1983). Since it was developed for use in non-psychiatric departments, it does not rely upon symptoms that may be present in people with physical illness alone, such as pain and weight loss. Subjects are asked to choose one response from the four given. They should have to give an immediate

response and be dissuaded (convince) from thinking too long about their answers. Hospital Anxiety and Depression (HADS) Scale has 14 items (seven items for the anxiety sub-scale and seven items for the depression sub -scale). Each item is rated on a 0 to 3 score ranges, yielding a total score ranging from 0 to 21 for each subscale. The higher the total score, the higher is the level of anxiety and depression. The norms give an idea of the level of anxiety and depression (0-7=normal, 8-10=borderline, 11-21= abnormal (case) (Zigmond & Snaith,1983). The Questions relating to anxiety are marked 'A' and to depression 'D'. The scale is translated in to Amharic to use in this study.

The Oslo 3-items Social Support Scale is the result of statistical analyses of a total sample of 1717 adults above the age of 17 from different types of neighborhoods in Norway (suburban, industrial, rural and coastal) (Dowrick, et al., 1998). These three items were considered to be the best predictors of mental health, covering different fields of social support, and were put together into a composite index of social support by summarizing the standardized Z scores for each item. A sum index may also be made by summarizing the raw scores, the sum ranging from 3 – 14. A score of 3-8 is "poor support", 9-11 is "moderate support" and 12-14 is "strong support". The Oslo-3 scale has been used in several studies, confirming the feasibility and predictive validity with respect to psychological distress (Melzer, 2003).

3.7. Procedures of Data Collection

The Data were collected by two clinical nurses who have diploma level training. The data collectors were oriented about the use of the questionnaire, ethical principles, such as confidentiality and data management prior to data collection.

Data collection was commenced after all required ethical approvals, including permission to conduct the research at Tikur Anbessa Specialized Hospital and permission to view the patient's files, are obtained. Then the researcher discussed with the nurses who did the interview about how participants could be identified and the referral process that should followed in the case of adverse events occurring during the data collection process. During the data collection period the researcher and the data collectors were at the clinic on a daily basis from 8:00 until all the patients expected for the day are seen. Once a participant agreed to participate she/he was given a letter of information and was advised to sign the informed consent. The instruments were designed to be handled by the data collectors.

3.8. Methods of Data Analysis

Data was cleaned prior to performing any statistical analysis. The collected data was sorted, validated, and organized for analysis. Data cleaning and statistical analysis was done using the Statistical Package for Social Sciences (SPSS) window version 20. Descriptive statistics were computed to determine the frequencies, percentages and mean and standard deviation of the independent variables and the outcome variables. Bivariate logistic regression analyses were carried out to describe the associations between exposure variables and depression and anxiety separately. A variable that was statistically significant with p-value ≤ 0.05 at the bivariate analysis was included in the multivariate logistic regression analysis to control confounding variables. The statistically significant association between the dependent and independent variables was measured and reported using adjusted odds ratio with 95% confidence interval.

3. 9. Ethical Considerations

Ethical clearance was obtained from the Ethical Review Committee of Tikur Anbessa Specialized Hospital. The consent form and purpose of the study was discussed with each client who agreed to participate. The form was filled if the participants are voluntary, and clients had the right to withdraw from completing the questionnaire at any time they wish. Participants were assured that if they wish refuse to participate their care or dignity will not be compromised in any way since there was no relationship between participation and health care or treatment services in the Hospital. Participants were informed that no expectation of additional treatment or any benefits for them despite being associated with participating in the study but those who scored high on the HADS scale were referred to a specific person at the Hospital for assistance. Moreover, the researcher was striving to protect and to respect the privacy, secrecy and wellbeing of all the participants.

CHAPTER FOUR

4. RESULTS

4.1. Socio-demographic characteristics of participants

A total of 384 respondents participated in the study. As it is indicated in Table 1, Note that 255(66.4%) of the respondents were females and 129(33.6%) were males. In terms of age, participants were from all age categories. Their age ranged from younger to the older age group (18 to >45years). Moreover, 66(17.2%) of the participants were in the age group of 18-29, while201 (52.3 %) of the participants were found of 30-45years old. Participants whose age is above 45 years old were about 118(30.4%).

In connection to the marital status of the respondents, 217(56.5%) of them were married, 167(43.48%) single. Interims of educational background, 159(41.7%)of the participants cannot read and write, 123(32.0%) completed primary schooling, 41(10.7%) completed secondary schooling and only 61(15.9%) of the respondents attended tertiary level of education.

The livelihood of 182 (47.4%) of the respondents were unable to raise their own income. 43(11.2%) of the respondents reported that they had monthly income of less than 500 Ethiopian birr, 41(10.7%) of the respondents monthly income was 5001-1500 birr, 44(11.5%) 1501 to 2500 birr per month, 28(7.3%) 2501-3500 Ethiopian birr, 27(7.0%) and 19(4.9%)3501-4500.

Table 1: Socio-demographic characteristics of participants (n=384)

Variable	frequency	%
Age		
18-29	66	17.2
30-45	201	52.3
>45	118	30.4
Sex		
Male	129	33.6
Female	255	66.4
Marital status		
Married	217	56.5
Single	167	43.4
Residence		
Addis Ababa	103	26.8
Outside of Addis Ababa	281	73.2
Education		
Cannot read and write	159	41.4
Primary	123	32.0
Secondary	41	10.7
University	61	15.9
Monthly Income		
None	182	47.4
<=500	43	11.2
501-1500	41	10.7
1501-2500	44	11.5
2501-3500	28	7.3
3501-4500	27	7.0
>4500	19	4.9
Occupation		
NGO employee	59	15.4
Government employee	39	10.2
House wife	197	51.6
Farming	36	9.4
Daily laborers	17	4.4
Student	22	5.7
Unemployed	8	2.1
Other	6	1.3
Total	384	100

With regard to occupation, 59(15.4%) of the respondents were working inNGO, 39(10.2%) were government employed, 198(51.6%) house wife, 36(9.4) farming, 17(4.4) daily laborer, 22(5.7%) student, 8(2.1%) unemployed and 5(1.3%) reported other type of occupation. Of all the

participants, 103(26.8%) were Addis Ababa residents and 281(73.2%) were from outside of Addis Ababa.

4.2. Clinical Characteristics of Participants

As indicated in Table2, 82(21.4%) of the respondents received chemotherapy, 57(14.8%) surgery,8(2.1%)radiotherapy, 100(26%) concomitant or using all treatment, 34(8.9%) both chemotherapy and surgery, 12(3.1%) are with non-treatment, 33(8.6%) chemotherapy and radiotherapy and the remaining 58(15.1%)were receiving the treatments of surgery and radiotherapy. In terms of cancer type, 128(33.3%) of the respondents had breast cancer, 65(16.9%) cervical cancer, 43(11.2%) thyroid cancer, 19(4.9%) colon cancer, and 129(33.6%) are with unspecified type of cancer.

With regard to the stage of cancer, while 32(8.3%) were in stage 0, the rest 115(29.9%) were in stage 1, 73(19%) were in stage 2, 148(38.5%) were stage 3, and 16(4.2%) were in stage 4.Regardingtheduration of the cancer, 133(34.6%) respondents were with less than six months, while 251(65.4%) respondents were greater than six months. In terms of social support, while 127(33.1%) respondents were in a status of poor social support, the remaining 175(45.6%) and 82 (21.4%) in a state of receiving moderate and strong social supports respectively. In connection to pain belief perception 59(15.4%) had adaptive pain believe perception while 325(84.6%) had maladaptive pain believe perception.

Table 2 Clinical characteristics of participants (n=384)in 2017

Variable	frequency	%
Treatment of cancer		
Chemotherapy	82	21.4
Surgery	57	14.8
Radiotherapy	8	2.1
Concomitant	100	26
Chemotherapy& surgery	34	8.9
None	12	3.1
Chemotherapy & radiotherapy	33	8.6
Surgery & radiotherapy	58	15.1
Type of cancer		
Breast cancer	128	33.3
Cervical cancer	65	16.9
Thyroid cancer	43	11.2
Colon cancer	19	4.9
Other type of cancer	129	33.6
Stage of cancer		
Stage 0	32	8.3
Stage 1	115	29.9
Stage 2	73	19
Stage 3	148	38.5
Stage 4	16	4.2
Duration of cancer		
Less than 6 months	133	34.6
Greater than 6 months	251	65.4
Social support		
Poor social support	127	33.1
Moderate social support	175	45.6
Strong social support	82	21.4
Pain belief perception		
Adaptive	59	15.4
Maladaptive	325	84.6
Total	384	100

4.3. Prevalence of depression and anxiety

To determine the prevalence of depression and anxiety in this study sample, frequency, percentage and confidence intervals were used.

Table3. Prevalence of depression, anxiety and both (depression and anxiety)

Variable		N (%)	95% confidence interval	
			Lower	Upper
Depression	**Yes**	242(63)	58.3	67.7
Anxiety	**Yes**	218(56.8)	51.8	61.7
Both anxiety and depression	**yes**	128(33.3)	28.6	38.5

Table3 depicts that the prevalence of depression and anxiety were found to be 63% (CI: 58.3-67.7) and 56.8 %(CI: 51.8-61.7) respectively while prevalence of both depression and anxiety was estimated 33.3 %(CI: 28.6-38.5).

4.4 Prevalence of depression & anxiety by cancer type and stage of cancer

Having seen the prevalence of depression and anxiety by cancer type and stage of cancer among cancer patients, the current study indicated that among thyroid and breast cancer the number of depressed patients were 32(74.4%) and 94(73.4%) respectively. This implies that, thyroid and breast cancer contributes high number of depressed patients as compared to other cancer patients.

Moreover number of anxious patients were common among breast 94(73.4%) and cervical 42(64.6%) cancer (Table 4).

Table4. Prevalence of depression and anxiety by cancer type and stage of cancer

Cancer type	**Have depression?**		**Total**	**Have anxiety?**		**Total**
	No	**Yes**		**No**	**Yes**	
Breast	34(26.6%)	94(73.4%)	128	34(26.6%)	94(73.4%)	128
Cervical	39(60.0%)	26(40.0%)	65	23(35.4%)	42(64.6%)	65
Thyroid	11(25.6%)	32(74.4%)	43	29(67.4%)	14(32.6%)	43
Colon	10(52.6%)	9(47.4%)	19	9(47.4%)	10(52.6%)	19
Other	48(37.2%)	81(62.8%)	129	71(55.0%)	58(45.0%)	129
Total	142(37.0%)	242(63.0%)	384	166(43.2%)	218(56.8%)	384
Stage of cancer	**Have depression?**		**Total**	**Have anxiety?**		**Total**
	No	**Yes**		**No**	**Yes**	
0	6(18.8%)	26(81.2%)	32	31(96.9%)	1(3.1%)	32
1	24(20.9%)	91(79.1%)	115	71(61.7%)	44(38.3%)	115
2	24(32.9%)	49(67.1%)	73	28(38.4%)	45(61.6%)	73
3	83(56.1%)	65(43.9%)	148	24(16.2%)	124(83.8%)	148
4	5(31.2%)	11(68.8%)	16	12(75.0%)	4(25.0%)	16
Total	142(37.0%)	242(63.0%)	384	166(43.2%)	218(56.8%)	384

The prevalence of depression were very high 26(81.2%) at initial stage but the prevalence of anxiety was high 124(83.8%) in stage three (Table 4).

Table 5.Factors associated with depression among cancer(n=384)

	COR	95% CI for COR		P vale	AOR	95% CI for AOR		P Value
		Lower	Upper			Lower	Upper	
Age								
18-29	2.987	1.567	5.695	.001	2.266	.879	5.841	.090
30-45	2.906	1.809	4.669	.000	2.224	1.249	3.960	.007
>45	1				1			
Sex								
Male	.937	.605	1.452	0.772				
Female	1							
Residence								
Addis Ababa	.849	.534	1.349	0.487				
Out of Addis Ababa	1							
Social support								
Poor	.460	.256	.825	.009	.484	.234	1.000	.050
Moderate	.957	.542	1.689	.879	1.043	.529	2.056	.904
Strong	1				1			
Education								
Illiterate	.430	.224	.823	.011	.565	.259	1.233	.152
Primary	.795	.400	1.581	.513	1.123	.487	2.590	.785
Secondary	.556	.238	1.297	.174	.726	.265	1.988	.534
University	1				1			
Marital status								
Married	.638	.417	.976	.038				
Single	1							
Income								
<500	1				1			
501-1500	.547	.277	1.080	.082	.339	.123	.931	.036
1501-2500	.933	.450	1.935	.852	.445	.168	1.179	.104
2501-3500	.433	.222	.847	.014	.083	.020	.341	.001
3501-4500	.375	.167	.841	.017	.092	.023	.364	.001
>4500	.674	.344	1.318	.249	.160	.036	.714	.016
Occupation								
NGO employed	2.937	.855	10.088	.087	12.881	2.407	68.927	.003

	COR	95% CI for COR		P vale	AOR	95% CI for AOR		P Value
		Lower	Upper			Lower	Upper	
Government Employed	1.078	.313	3.710	.905	5.865	1.109	31.015	.037
House wife	1.220	.407	3.654	.722	1.733	.459	6.548	.418
Farming	.536	.154	1.868	.327	2.615	.499	13.717	.256
Daily laborer	.844	.203	3.504	.815	1.910	.334	10.919	.467
Student	3.375	.742	15.349	.115	21.396	3.015	151.854	.002
Unemployed	1				1			
Treatment								
Chemotherapy	1				1			
Surgery	3.117	1.512	6.423	.002	2.292	.920	5.713	.075
Radiotherapy	3.041	.557	16.586	.126	.457	.044	4.806	.515
Concomitant	3.851	2.046	7.248	.000	11.679	4.651	29.327	.000
None	6.081	1.253	29.502	.025	7.038	.989	50.079	.051
Chemotherapy and Surgery	.507	.215	1.193	.120	.520	.159	1.697	.278
Chemotherapy and Radiology	1.014	.450	2.282	.974	.894	.285	2.804	.847
Surgery and Radiology	5.307	2.417	11.652	.000	1.972	.546	7.122	.300
Duration of diagnosis								
Less than 6 month	2.766	1.717	4.456	.000	3.352	1.514	7.421	.003
More than 6 month	1				1			
Type of cancer								
Breast	1				1			
Cervical	.241	.128	.454	.000	.485	.178	1.325	.158
Thyroid	1.052	.478	2.317	.899	3.223	1.096	9.475	.033
Colons	.326	.122	.869	.025	.476	.133	1.710	.255
Others	.610	.359	1.037	.068	1.154	.496	2.685	.739
Stages								
0	1				1			
I	.875	.323	2.367	.793	.220	.038	1.279	.092
II	.471	.171	1.298	.145	.253	.057	1.127	.071
III	.181	.070	.465	.000	.061	.016	.236	.000
IV	.508	.128	2.019	.336	.115	.017	.776	.026
Pain belief perception								
Adaptive	5.278	2.326	11.976	.000	4.057	1.088	15.125	.037
Maladaptive	1				1			

4.5. Factors associated with depression among cancer

Both bivariate and multivariable logistic regression analyses were done to determine the association of each independent variable with depression. Variables found to be significant in the bivariate analysis (p-value less than or equal to 0.05) were entered into a multivariable logistic regression analysis to adjust the effects of confounders on the outcome variable. Odds ratio with their 95 % confidence intervals were computed to identify the presence and strength of association, and statistical significance was found if $p < 0.05$. Age, monthly income, occupation and pain belief perception were found to be significantly associated with depression (Table 5).Study participants with age group 30-45 (AOR=2.224,95%Cl:1.249-3.960) were 2.2 times affected or depressed as compared to higher age group (>45). Income was associated with depression, higher monthly income more protective (AOR=0.160, 95%CI: 0.036-0.714) those individuals who have higher income are less likely to be depressed. Occupation was significantly associated with depression, Students, NGO and government employee were a high prevalent for depression (AOR=21.396, 95%Cl: 3.015151.854),(AOR=12.881, 95%Cl: 2.407-68.927)Government employed (AOR=5.865, 955Cl: 1.109-31.015) respectively, student were 21 times more depressed than unemployed. In current study residence, sex, marital status, education and social support were not significantly associated with depression.

All clinical factors, treatment type, type of cancer, stage of cancer and durations of diagnosis were found to be significantly associated with depression. Cancer patients who are in a phase of Concomitantor using all treatment are more likely to be depressed (AOR=11.679, 95%Cl: 4.651-29.327) with 11timesmore than those who use using only chemotherapy. Moreover, patients who identified their status as diagnose less than 6 months (AOR=3.3252, 95%Cl: 1.514-7.421) are more likely to depression with 3.3 times than those who have been diagnosed more than 6 months.

Depression is common in thyroid cancer patients and (AOR=3.223, 95%Cl: 1.096-9.475)3 folds while compared to breast cancer. Stage of cancer is strongly associated with depressions stage 3 more protective for depression than stage 0(AOR=0.61, 95%Cl: 0.016-0.236). Pain believe behavior perception has significant association with depression and those individuals who have adaptive pain believe behavior (AOR=4.057, 95%Cl: 1.088-15.125) were more likely to be depressed as compared to the maladaptive (Table 5).

Table 6: Factors associated with anxiety among Cancer patients (n=384)

	COR	95% CI for COR		P value	AOR	95% CI for AOR		P value
		Lower	Upper			Lower	Upper	
Age								
18-29	.101	.050	.208	.000	.205	.060	.702	.012
30-45	.546	.333	.896	.017	.916	.468	1.794	.799
>45	1				1			
Sex								
Male	.282	.181	.439	.000	3.485	2.095	5.796	.000
Female	1				1			
Residence								
Addis Ababa	1.147	.726	1.814	.557				
Out of Addis Ababa	1							
Education								
Illiterate	4.049	2.126	7.711	.000	11.688	4.564	29.933	.000
Primary	3.909	2.008	7.608	.000	10.953	4.430	27.078	.000
Secondary	7.059	2.901	17.174	.000	13.004	4.469	37.842	.000
University	1				1			
Marital status								
Married	1.401	.932	2.106	.105				
Single	1							
Social support								
Poor support	1				1			
Moderate	.288	.168	.495	.000	1.027	.422	2.499	.954
Strong Support	.050	.024	.102	.000	.008	.001	.042	.000
Income								
<500	1.267	.654	2.452	.483	.018	.001	.221	.002
501-1500	.737	.319	1.704	.476	.040	.004	.387	.006
1501-2500	.098	.032	.295	.000	.010	.001	.127	.000
2501-3500	1.016	.439	2.355	.970	2.901	.440	19.136	.268
3501-4500	2.111	.748	5.957	.158	.238	.016	3.576	.299
>4500	1				1			
Occupation				.000				.006
NGO employed	.684	.208	2.243	.530	.023	.001	.439	.012
Government Employed	1.556	.454	5.330	.482	.007	.000	.158	.002
House wife	3.119	1.037	9.383	.043	.804	.159	4.072	.793
Farming	2.095	.599	7.333	.247	.371	.047	2.936	.347
Daily laborer	1.905	.454	7.983	.378	1.376	.148	12.817	.779
Student	.063	.007	.613	.017	.001	.000	.027	.000

Unemployed	1				1			
Treatment								
Chemotherapy	1				1			
Surgery	.834	.424	1.641	.599	.012	.002	.078	.000
Radiotherapy	.123	.015	1.048	.055	.012	.002	.070	.000
Concomitant	2.335	1.257	4.337	.007	.123	.005	2.893	.193
None	.079	.010	.636	.017	.002	.000	.016	.000
Chemotherapy &Surgery	1.583	.693	3.618	.276	.160	.009	2.717	.205
Chemotherapy &Radiology	.494	.215	1.134	.096	.251	.035	1.827	.172
Surgery and Radiology	1.522	.764	3.032	.233	.002	.000	.023	.000
Duration of diagnosis								
Less than 6 month	.207	.132	.326	.000	.056	.018	.175	.000
More than 6 month	1				1			
Type of cancer								
Breast	1				1			
Cervical	.660	.348	1.255	.206	.567	.159	2.027	.383
Thyroid	.175	.083	.369	.000	.054	.012	.239	.000
Colons	.402	.150	1.073	.069	.764	.117	4.987	.779
Others	.295	.175	.499	.000	.456	.153	1.358	.158
Stages				.000				.000
0	.097	.010	.956	.046	.096	.005	1.905	.124
I	1.859	.564	6.126	.308	.768	.105	5.636	.795
II	4.821	1.415	16.429	.012	14.851	2.586	85.277	.002
III	15.500	4.608	52.139	.000	24.455	4.780	125.111	.000
IV					1			
PBP								
Adaptive	.503	.287	.882	.016	.406	.204	.807	.010
Maladaptive	1				1			

4.6. Factors associated with anxiety among Cancer patients

The bivariate and multivariable analyses showed that age, sex, monthly income, education, occupation, social support and PBP were found to be significantly associated with anxiety whereas marital status and residence were not significantly associated (Table 6). Lower age groups were found to be protective for anxiety that means as age increases, the risk of facing anxiety also increases .That is younger age groups (18-29)(AOR=0.205,95%CI:0.060-0.702),are less likely to

be anxious. Sex was significantly associated with anxiety, AOR=3.485, 95%Cl: 2.095-5.796) male are more likely to be anxious than females. Educational status was associated with anxiety (AOR=11.688, 95%Cl: 4.564-29.933) those who are not able to read and write were anxious than those who have than university level education. Monthly income is associated with anxiety<500birr protective than higher income (AOR=0.018, 95%Cl: 0.001-0.0221) than higher monthly income .Occupation was significantly associated with anxiety and student is more protective than unemployed (AOR=0.001, 95%:0.000-0.027).Social support was significantly associated with anxiety strong social support is protective (AOR=0.008, 95%Cl: 0.001-0.042).

Again all clinical factors were found to be significantly associated with anxiety. The current finding showed that, all treatments are protective as compared to chemotherapy).Those who were diagnosed before 6months were (AOR=0.056, 95%, Cl: 0.018-0.178) less likely to be anxious as compared to those who were diagnosed more than 6months.Thyroid cancer is protective (AOR=0.054, 95%Cl: 0.012-0.239) compared to breast cancer. The risk of anxiety increases at stage 3 cancer (AOR=24.455, 95%Cl: 4.780-125.11) compared to initial stage. Social support was significantly associated with anxiety; those participants who have strong social support were less anxious (AOR=0.008, 95%Cl: 0.001-0.42)as compared to those who have poor social support and adaptive pain belief behavior(AOR=0.406, 95%Cl: 0.204-0.807) protective than maladaptive behavior(Table 6).

CHAPTER FIVE

5. Discussion

The aim of the study was to assess the prevalence and associated factors of depression and anxiety among cancer patients at Tikur Anbesa hospital. In this chapter the key research findings are discussed under each of the research questions .The first section discusses on findings regarding the prevalence of depression and second section the prevalence of anxiety. The third section discusses findings about the associated factors of depression. The last section discusses about associated factors of anxiety.

5.1. Prevalence of Depression

The prevalence of depression among cancer patient in this study is 63 %(95% CI: 58.3-67.7) which is higher figure as compared to previous s studies (Darius,et al, 1990, Weissma, et al, 1998). This difference may be due to the difference of study setting. For example study conducted in France (Darius, et al., 1990) reported 25.5% which has a significant difference as compared to the current finding. Study conducted in Nigeria showed that the prevalence of depression was 40.3%(Martin,2011).The current study indicated that thyroid and breast cancer were more depressed; which were 32(74.4%) and 94(73.4%) respectively. The significant difference that was seen was due to varying conceptualizations of depression, different criteria used to define depression, differences in methodological approaches to the measurement of depression, and different populations studied (Weissma,et al., 1998).In developed countries such as France, there are many factors including availability of health facility and health professionals, good economic status, early diagnosis and treatment which can significantly reduce depression. As a result the significant difference may be observed when developed and developing countries are compared to each other.

5.2. Prevalence of anxiety

Anxiety occurs in many patients with cancer varying from the "normal" worries and fears associated with a life threatening illness, through sub-syndromal distress, adjustment disorders, and generalized anxiety disorders and anxiety due to the medical condition (Noyes, 1986). The prevalence of anxiety was assessed in the current study and found to be 56.8 %(95% CI: 51.8-61.7). A small difference was observed with study conducted in Great Britain (48%). A study carried out in china among Chinese adults with cancer showed that the prevalence of anxiety disorders were 49.69% (Yi-Long, 2013). Another study done in Malaysia on anxiety and coping strategies in cancer patients found a prevalence of 24.1% (Bras, 2009). Surprisingly, study done in Kuwait among cancer patients showed that the prevalence of anxiety among cancer patients was 8.5% (Satin & Linden et al., 2009). This difference may be due to economic difference, life style, easily availability of health facility, early diagnosis and treatment and also oncology treatment integrated with psychotherapy or counseling service and also different criteria used to define depression, differences in methodological approaches to the measurement of depression, and different populations studied.

5.3 Associated Factor of Depression

Such factors as (age, monthly income and occupation) were found to be significantly associated with depression .But sex; marital status, education and residence were not significantly associated with depression. Age group 30-45years old is more depressed which is 2.2 folds as compared to higher age group(>45).This finding goes in line with previous research findings (Rapaport& colleagues 1993,Jadoon, 2010).Systematic review of observational studies in Malaysia on prevalence of depression was associated with several socio-demographic variables (Age, religion, monthly income and occupation) (Nor et al., 2013).

In the current study sex, residence, marital status, education and social support were not significantly associated with depression however income is highly related with depression and the depression rate discovered in this study is consistent with the report made by (Pinder and colleagues, 1991).This study has reported that the NGO employee, Government employee and students are more depressed than unemployed. This finding is not consistent with the studies reported by (Purohit, S.,Kumar, P., & Bhatia, M.S. ,2010).Their report shows that the depression exists more to unemployed than the employees. The reason to the difference may happen as a result of the responsibilities and load of the work given to NGOs, GOs and students are higher than those who are unemployed.

All clinical factors, treatment type, type of cancer, stage of cancer, durations of diagnosis were found to be significantly associated with depression. A systematic review of observational studies in Malaysia showed that prevalence of depression was related with treatment (Nor et al., 2013).This finding shows that using all treatment will increase depression by 11 times as compared to using only chemotherapy. Study shows that, chemotherapy and surgical procedures are a source of depression in cancer patients because of their negative side effects that may include body image disturbances and physical symptoms. This finding supported by other researches (Hideaki, Yosuke, Shigeto, 2006andGreer, Silberfarb, 1982).Those who are diagnosed for less than 6 months are 3.3 times more likely to be depressed as compared to those who are diagnosed for more than 6 month. Duration of cancer diagnosis need to be considered in nursing intervention in order to maintain a fighting spirit and to overcome feelings of depression in cancer patients (Pessin,et al., 2002).This study had reported that depression was more common in thyroid cancer then in breast cancer. In different studies, there were different results that were found. For example, breast cancer (Jadoon, 2010), Pharyngeal cancer (Davies and Colleagues, 1986) and lung

cancer (Jin and Jun, 2014) were significantly associated with depression and also prevalence and severity of psychological distress also vary across cancer types (Massie, 2004 & Powe, 2003).

Study done in University of Delhi on factors associated with prevalence of depression among cancer patients found that cancer type, disease stage, time from diagnosis and cancer treatment are important predictors of depression (Purohit,S.,Kumar,P.,&Bhatia,M.S.2010, Abiodun,2012). Having an advanced stage of cancer, presence of pain, were significantly associated with being depressed (Baile and colleagues, 1992, Martin, 2011) .The current finding shows that initial stage or stage'' 0'' were more depressed than advanced stage and this findings were in line with other studies (Purohit, S.,Kumar, P.,& Bhatia, M.S. 2010, and Nor et al., 2013) depression also depends on the stage of cancer .The current finding shows that pain believe perception was significantly associated with depression and this finding goes in line with previous research findings (Spiegel, 1996, Williams, et.al., 1995).

5.4. Associated factors of anxiety

The study showed that sex, age, monthly income, occupation and education were found to be significantly associated with anxiety whereas marital status and residence were not significantly associated. The current findings are in line of with previous studies (Stark, et al., 2002, Bloom,et al.2001, Kornblith,et al.2001, Gremore,et al. 2011).Age (18-29) years old less likely to anxious compared to older age(>45).This finding goes in line with previous research findings (Jadoon, 2010).Male are more likely to be anxious than females. This study is different from other researches it may be that adjustment disorder is more common in male. Student was the most protective or less likely to be anxious than unemployed. This finding is in line with study conducted in University of Delhi (Purohit,S.,Kumar,P.,& Bhatia, M.S.,2010).Income was

significantly associated with anxiety this finding goes in line with the research findings (Alacacioglu,et al.,2013).According to educational status illiterate was more anxious than high level educational status, this finding supported by other researches(Alacacioglu ,et al.,2013).Cancer treatment is significantly associated with anxiety and this findings goes with findings, by other researchers(Villemure & Bushnell, 2002) Cancer treatments is themselves can be anxiety provoking and may contribute to the actual psychological morbidity of patients with cancer (Villemure & Bushnell, 2002) .The risk of anxiety increases as stage of cancer increases and this is also supported by other researchers(Bras, 2009).Breast cancer is more anxious as compared to the others(Cervical, thyroid and colon this finding goes the line with other researchers (Odanye, 2011).Stages of cancer were significantly associated anxiety ;stages three were more anxious than initial stage. This finding is supported by other researchers(Baile and colleagues, 1992)

Social support was significantly associated with anxiety and this goes in line with previous research findings (Stark, et al., 2002 and Bloom, et al.2001, Kornblith ,et al.,2001, Gremore, et al., 2011)The current study showed that pain belief perception is significantly associated with anxiety and this findings goes in line with other previous research finding (Spiegel,1996 and Williams,etal.,1995).

In general, these findings could be used as a base line for other researcher to modify the result that are incongruent with the international findings such as sex, residence, education, marital status in significant to depression. The other incongruent thing is that adaptive pain belief perception are more depressed than maladaptive pain perception and also male are more anxious than female requires further studying as it contrast the international ones.

Limitations of the Study

- The study has few limitations; this study was conducted in only one government hospital, which will make the generalizability of the findings difficult.
- The study is cross-sectional, which cannot determine the causation or temporality of the association between associated factors and depression/.anxiety among cancer patients. It may be affected by bias due to using self-report measures.
- There is no any research done in this topic in our country

CHAPTER SIX

6. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Summary

This study explored the prevalence and associated factors of depression and anxiety among cancer patients at Tikur Anbessa Hospital. It sought answers for the following four research questions.

- What is the prevalence of depression among cancer patients at Tikur Anbesa Specialized Hospital?
- What is the prevalence of anxiety among cancer patients at Tikur Anbesa Specialized Hospital?
- Which of the socio-demographic, clinical and social characteristics are associated with depression among cancer patients at Tikur Anbesa Specialized Hospital?
- Which of the socio-demographic, clinical and social characteristics are associated with anxiety among cancer patients at Tikur Anbesa Specialized Hospital?

All participants are from Tikur Anbessa hospital Cancer department. The required sample was stratified by cancer types which are breast, cervical, thyroid, colon and other types of cancer(128, 65, 43, 19 and 129), respectively the data were collected though self-report questionnaire was used to collect the required data for this study. The questionnaire has five parts: a socio-demographic questionnaire, a clinical factor questionnaire, the Hospital Anxiety and Depression Scale (HADS), the Oslo 3-items Social Support Scale and Pain Beliefs Perceptions Inventory (PBPI).

The following are the major findings of the study.

- Most of the participants are from 30-45years old.
- According to the marital status, most of participants are married.
- According to the educational status most of participants are illiterate.
- The majority of the participants are no monthly income or unknown source of income.
- Most of the participants are house wives.
- The prevalence of depression is 63%.
- Age, education, income, occupation, religion, clinical factors (Types cancer, Stage of cancer, Duration diagnosis \illness) and pain belief perception are significantly associated with depression.
- Prevalence of anxiety is 58.3%
- Age, sex, religion, occupation, monthly income, education and clinical factors (Types cancer, Stage of cancer, Duration diagnosis \illness) social support and pain belief perception is significantly associated with anxiety.

6.2. Conclusions

The study found that the prevalence of depression is 63% and the prevalence of anxiety is 56.8% among cancer patients at Tikur Anbessa Specialized Hospital. Age, religion, monthly income and occupation are found to be significantly associated with depression but sex, residence, education and marital status are not significantly associated. Age, sex, education, religion, monthly income and occupation were found to be significantly associated with anxiety whereas marital status and residence were not significantly associated among cancer patients. All clinical factors, (treatment type, type of cancer, stage of cancer, durations of diagnosis) were found to be significantly associated with depression. Pain belief perception has significant association with

depression. All the clinical factors were found to be significantly associated with anxiety. Social support was significantly associated with anxiety. The study shows the importance of counseling for anxiety and depression to the patients as means of effectively improving their psychological problems and ultimately improving the quality of medical care provided in the field of oncology.

6.3. Recommendations

Having seen the prevalence of depression and anxiety, it is recommended that all the concerned body such as the Ministry of Health of Ethiopia, Tikur Anbessa Specialized Hospital particularly; Oncology Department should integrate psychotherapy with oncology treatment.

Federal Ministry of Health

- Improvement in comprehensive cancer control program including prevention, early detection, treatment & psychotherapy is mandatory.
- The need to expand cancer screening programs (HPV testing & PAP smear)
- To create awareness in collaboration with public medias about cancer Prevention, screening and treatment is crucial

Black lion hospital

- The need to improve public and professional awareness, early detection and Prompt treatment using feasible and effective regimens and consider integrate psychotherapy.

Researchers

- Further studies on prevalence and associated factors depression and anxiety among cancer patients that can address the limitations of this study and devise strategies to improve completeness by use of complementary active methods.

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APPENDICES

Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

Structured questionnaire (to be administered to cancer patients)

The purpose of this questionnaire is to collect data on depression and anxietyand associated factors among cancer patients. Thank you for your consideration to participate in this study. There are four parts included in this study questionnaire. It will not take you more than 30 minutes to complete the questionnaire. There is no right or wrong answer to the questions presented, and you may skip questions if you do not wish to answer. Your answers will be confidential; there will be no way to connect your answers to you and don't need to mention your name. All data collected in this study will be reported in aggregate. We kindly request you to give us your sincere and truthful answer.

Thank you for your time and effort!

PPENDIX -A

Part I: Background characteristics

Direction: You are requested to give answers genuinely to the following questions. Please give your answers by putting (X) in the box provided in front of your choice.

S.NO	Variables	
1	**In what age group are you in?**	
	18-29 Years old	☐
	30-45 Years old	☐
	>45 Years old	☐
2	**What is your gender?**	
	Male	☐
	Female	☐
3	**What is your marital status?**	
	Married	☐
	Single	☐
5	**Where is the place of your residence?**	
	Addis Ababa	☐
	Out of Addis Ababa	☐
6	**What is your educational status?**	
	Can't read and write	☐
	Primary	☐
	Secondary	☐
	University	☐
7	**What is your monthly income?**	
	None	☐

	≤500 Birr	☐
	501-1500 Birr	☐
	1501-2500 Birr	☐
	2501-3500 Birr	☐
	3501-4500 Birr	☐
	>4500 Birr	☐
8	**What is your occupation?**	
	Non-government (NGO) employed	☐
	Government employed	☐
	House wife	☐
	Farming	☐
	Daily laborer	☐
	Student	☐
	Unemployed	☐
	Other	☐

APPENDICES -B

Part II: Clinical Characteristics of the participants

2.1 **Direction**: Give your responses to the following questions by putting (X) in the box provided in front of your choice.

S.NO	Variables	
1	**What is your cancer type?**	
	Breast	☐
	Cervical	☐
	Thyroid	☐
	Colons	☐
	Other	☐
2	**What is your stage of cancer?**	
	0	☐
	I	☐
	II	☐
	III	☐
	IV	☐
	V	☐
3	**How long have you known that you have a cancer?**	
	Less than 6 Months	☐
	Greater than 6 Months	☐
4	**What kind of treatment are you taking now?**	
	Chemotherapy	☐
	Surgery	☐
	Radiotherapy	☐
	Concomitant	☐
	None	☐

APPENDICES-C

Part III. A Pain Belief and Perception Inventory

Direction: Here are items related to your belief and perception about pain. Please read each statement carefully and indicate the extent (degree) to which you agree (or disagree) to the following statements by putting (X) against your choice (i.e. Strongly Agree, Agree, Strongly Disagree and Disagree).

	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1	No one has been able to tell me exactly why I am in pain.				
2	I used to think my pain was curable but now I am not so sure.				
3	There are times when I am pain-free				
4	My pain is confusing to me.				
5	My pain is here to stay.				
6	I am continuously in pain				
7	If I am in pain, it is my own fault				
8	I don't know enough about my pain.				
9	My pain is a temporary problem in my life.				
10	It seems like I wake up with pain and I go to sleep with pain.				
11	I am the cause of my pain.				
12	There is a cure for my pain.				
13	I blame myself if I am in pain				
14	I cannot figure out why I am in pain				
15	Someday I will be 100% pain-free again				
16	My pain varies in intensity but is always with me				

S.NO	D	A	I feel tense or 'wound up
1			Most of the time
			A lot of the time
			From time to time, occasionally
			Not at all

S.NO	D	A	I feel as if I am slowed down:
1			Nearly all the time
			Very often
			Sometimes
			Not at all

APPENDICES-D

Part IV: Hospital Anxiety and Depression Scale (HADS)

Direction: Tick the box beside the reply that is closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate is best.

2			**I still enjoy the things I used to enjoy:**	**2**			**I get a sort of frightened feeling like 'butterflies' in the stomach:**
			Definitely as much				Not at all
			Not quite so much				Occasionally
			Only a little				Quite Often
			Hardly at all				Very Often
3			**I get a sort of frightened feeling as if something awful is about to happen:**	**3**			**I have lost interest in my appearance:**
			Very definitely and quite badly				Definitely
			Yes, but not too badly				I don't take as much care as I should
			A little, but it doesn't worry me				I may not take quite as much care
			Not at all				I take just as much care as ever
4			**I can laugh and see the funny side of things:**	**4**			**I feel restless as I have to be on the move:**
			As much as I always could				Very much indeed
			Not quite so much now				Quite a lot
			Definitely not so much now				Not very much
			Not at all				Not at all
5			**Worrying thoughts go through my mind:**	**5**			**I look forward with enjoyment to things**
			A great deal of the time				As much as I ever did
			A lot of the time				Rather less than I used to
			From time to time, but not too often				Definitely less than I used to
			Only occasionally				Hardly at all
6			**I feel cheerful:**	**6**			**I get sudden feelings of panic**
			Not at all				Very often indeed
			Not often				Quite often
			Sometimes				Not very often
			Most of the time				Not at all
7			**I can sit at ease and feel relaxed:**	**7**			**I can enjoy a good book or radio or TV program**
			Definitely				Often
			Usually				Sometimes
			Not Often				Not often
			Not at all				Very seldom

APPENDICES-E

Part V. Social support scale

Direction: Here are items which focus on the social support of respondents. Consider each item separately and rate each item independently. Circle the rating that indicates the extent to which you agree with each statement. Please do not skip any rating.

S.NO	Statement	
1	**How easy can you get help from neighbours if you should need it?**	
	Very easy	5 ☐
	Easy	4 ☐
	Possible	3 ☐
	Difficult	2 ☐
	Very difficult	1 ☐
2	**How many people are so close to you that you can count on them if you have serious problems?**	
	None	1 ☐
	1-2	2 ☐
	3-5	3 ☐
	5+	4 ☐
3	**How much concern do people show in what you are doing?**	
	A lot	5 ☐
	Some	4 ☐
	Uncertain	3 ☐
	Little	2 ☐
	No	1 ☐

Thank you for your kind cooperation

አዲስ አበባ ዩኒቨርሲቲ

የባህሪ ጥናት የትምህርት ክፍል

መጠይቅ (ለካንሰርታካሚዎች)

የዚህጥናትአላማበጥቁርአንበሳሪፈራልሆስፒታልሕክምናቸውንየሚከታተሉየካንስርታካሚዎቸለድብርትናለጭንቀትያላቸውንተላጭነትእንዲሁምከዚህጋርተያያዥነትያላቸውንነገሮቸለማጥናትናለመረዳትለሚደረግጥናትመረጃለመሰብሰብታስቦነው፡፡የካንስርታካሚዎቸለድብርትናለጭንቀትያላቸውንተጋላጭነትእንዲሁም ከዚህ ጋር ተያያዥነት ያላቸውን ነገሮቸ ማጥናትና ለመረዳ ታስቦ በተዘጋጀው መጠየቅ ላይ ለመሳተፍ ስለወሰኑ እናመሰግናልን፡፡ መጠይቁ አራት ክፍሎች ያሉት ሲሆን መጠየቁ ከ30 ደቂቃ በላይ አይወስድም፡፡ትክክል ወይም ትክክል ያልሆነ ምላሽ የሚባል የለም መመለስ የማይፈልጉዋቸውን ጥያቄዎች ማለፍ ይችላ፡፡ የእርስዎና የሌሎች የጥናቱ ተሳታፊዎች ምላሽ ሚስጥራዊነቱ የተጠበቀ ሲሆን ስምዎትን መጥቀስ አያሰፈልግዎትም፡፡ ስለሆነ ምላሽዎት ከልብዎ የመነጨና እውነተኛ ቃል እንዲሆን በማከበር በትሕትና እጠይቃለሁ፡፡

ስለመልካምትብብርዎከወዲሁአመሰግናለሁ፡፡

ክፍልአንድ፡አጠቃላይመረጃ

መመሪያ፡ለሚከተሉትጥያቄዎችበእርስዎጊዜዊአጠቃላይመረጃላይየሚያጠነጥኑሲሆኑእርስዎንይገልጸኛልብለወዮሚያስቧቸውላይበተዘጋጀው ሳጥንውስጥ(X)በማድረግምላሽዎትንይስጡ፡፡

ተ.ቁ	መጠይቆች	(X)
1	**እድሜዎስንትነው?**	
	18-29 አመት	☐
	29-45 አመት	☐
	>45አመት	☐
2	**ጾታዎምንድንነው?**	
	ወንድ	☐
	ሴት	☐
3	**የጋብቻሁኔታዎምንድንነው?**	
	ያገባ/ች	☐
	ያላገባ/ች	☐
5	**የመኖሪያአድራሻዎትየትነው?**	
	አዲስአበባከተማውስጥ	☐
	ከአዲስአበባከተማውጭ	☐
6	**የትምህርትደረጃዎትምንያህልነው?**	
	ማንበብመጽህፍማይችል	☐
	አንደኛደረጃያጠናቀቀ/ቀች	☐
	ሁለተኛደረጃት/ቤትያጠናቀቀ/ቀች	☐
	ከፍተኛየትምህትተቋምየገባ/ች	☐
7	**በወርምንያክልገቢያገኛሉ?**	
	ገቢየለኝም	☐
	<500	☐
	501-1500	☐
	1501-2500	☐
	2501-3500	☐
	3501-4500	☐
	>4500	☐
8	**የሚተዳደሩበትየስራዘርፍምንአይነትነው?**	
	የግልድርጅቸውስጥበመስራት	☐
	መንግስታዊድርጅትውስጥበመስራት	☐
	የቤትእመቤት	☐
	በግብርናሙያ	☐
	የጉልበትስራተኛ	☐
	ተማሪ	☐
	ሰራአጥ	☐

ክፍልሁለት: በህክምናምርመራጋርግንኙነትያላቸውመረጃዎችለመለካትየተዘጋጀመጠይቅ

1.1 ***መመሪያ***:

እባክዎትለዚህበታችየተቀመጡጥያቄዎችበህክምናምርመራዎትዙሪያላይየሚያተኩሩናቸው::እባክዎንእኔንይገልጸኛልብ ለውየሚያምኑበትንምላሽበጥያቄዎችፊትለፊትበተቀመጡትሳጥኖችውስጥ (X) በማድረግምላሽዎትንያስቀምጡ::

ተ.ቁ	መጠይቆች	(X)
1	**የምንአይነትካንሰርተጠቂነዎት?**	
	የጡትካንሰር	☐
	የማህፀንጫፍካንሰር	☐
	የታይሮይድእጢካንሰር	☐
	የትልቁአንጅትካንሰር	☐
	ሌላካለይጥቀሱ?	-----
2	**የእስዎየካንሰርደረጃስንትነው?**	
	0	☐
	I	☐
	2	☐
	3	☐
	4	☐
3	**መቼበዚህአይነትካንሰርተጠቂሆኑ?**	
	≤ 6 ወርበታች	☐
	> 6 ወርበላይ	☐
4	**ባሁኑሰዓትእየወሰዱትያሉትፀረ- ካንሰርየህክምናአይነትምንድንነው?**	
	የፀረ-ካንሰርህክምና (Chemotherapy)	☐
	የጨረርህክምና (Radiotherapy)	☐
	ሁሉምህክምናዎችበአንድላይ (Concomitant)	☐
	ባሁኑሰዓትምንምአይነት ህምክምናእየወሰድኩአይደለም::	☐
5	ቀዶህክምናአድርገዋል?	☐
	የፀረ-ካንሰርህክምናቀዶህክምናአድርገዋል?	☐
	ቀዶህክምናየጨረርህክምና	☐

ክፍል 3

የሚሰማዎትንየህመምስሜትላይያለዎትንየግላዊእምነትንናመረዳትንየሚለካመጠይቅ

መመሪያ:የሚከተሉትጥያቄዎችለሚሰማዎትንየህመምስሜትላይያለዎትንየግላዊእምነትናመረዳትለማወቅየሚረዱናቸው፡የእርስዎየመስማማት ደረጃይገልጽልኛልብለውበሚያስቡትቁጥርላይበማከበብምላሽዎትንያስቀምጡ፡፡

ተ.	ጥያቄዎች	በጣም አልስማማም	አልስማማም	እስማማለሁ	በጣም እስማማለሁ
1	ማንምሰውለምንእንደዚህአይነትየህመምስሜትውስጥእንደሆንኩሊያ ስረዱኝአልቻሉም፡፡				
2	ከዚህበፊትህመሜሊፈወስይችላልብዬአስብነበርነገርግንአሁንያንንአ ላስብም፡፡				
3	ከህመሜስሜትነጻየምሆንባቸውጊዜያትአሉ፡፡				
4	የህመሜስሜትሁሌምግራያጋባኛል፡፡				
5	የህመሜስሜትሁሌምእኔጋርነው፡፡				
6	ሁሌምየህመምስሜትአለኝ፡፡				
7	የህመምስሜትውስጥመሆኔየራሴውጥፋትነው፡፡				
8	ስለህመሜበበቂሁኔታግንዛቤውየለኝም፡፡				
9	ህመሜጊዜያዊየኑሮዬችግርነው፡፡				
10	ከእንቅልፌስነቃናወደምችታዬስሄድበህመምስሜትውስጥሁኜነው፡፡				
11	የህመሜምክንያትእኔውራሴወትኝ፡፡				
12	ለህመሜፈውስአገኛለሁ፡፡				
13	በህመምስሜትውስጥስሆንራሴንእወቅስሳለሁ፡፡				
14	በህመምስሜትውስጥለምንእንደሆንኩማወቅአልቻልኩም፡፡				
15	አንዳንድቀንሙሉበሙሉከህመሜስሜትነጻእሆናለሁ፡፡				
16	የህመሜስሜትሁሌምእኔጋርቢኖርምየህመምስሜቱ (መጠኑ) ግን የተለያየነው፡፡				

ክፍል 4፡ሆስፒታልውስጥለሚገኙለካንሰርተጠቂዎችየድብርትናየጭንቀትተጋላጭነታቸውን የመለኪያመጠይቅ

መመሪያ፡ስነልቦናበብዙበሽታዎችላይየራሱየሆነሚናእንዳለውይታወቃል፡፡ባለፈውሳምንትየተሰማዎትንስሜትመሰረትበማድረግስሜቴንይገልጽልኛልያሉት ንምላሽበተዘጋጀውሳጥንውስጥ(X)
በማድረግምላሽዎትንያስቀምጡ፡፡በተቻለመጠንሲመልሱብዙጊዜአይውሰዱምንአልባትእንደተጠየቁወዲያውኑየመጣልዎትንምላሽትክክለኛስሜ ትዎንሊገልጽይችላል፡፡

ተ.ቁ	ጥያቄዎች	(X)	ተ.ቁ	ጥያቄዎች	(X)
1	የመጨነቅወይምየመወጠርስሜትዎንያህልይሰማዎታል?		1	ስራዎን ሲያከናውኑ ወዘተ ፍጥነትዎ ምንያህል የቀነስ ይመስለዎታል?	
	በጣምብዙጊዜ፡፡	☐		እጅግበጣምብዙጊዜ፡፡	☐
	ብዙጊዜ፡፡	☐		በጣምብዙጊዜ፡፡	☐
	አልፎአልፎ፡፡	☐		አልፎአልፎ፡፡	☐
	ምንምአይሰማኝም፡፡	☐		ምንምአልቀነሰም፡፡	☐
2	ቀደምሲልያስደስቱኝየነበሩነገሮችአሁንምምንያህልያስደስትዎታ ል?		2	ሆዴአካባቢየመደንገጥወይምየመሸበርስሜትይሰማዎታል?	
	አሁንምእንደድሮውያስደስተኛል፡፡	☐		ምንምአይሰማኝም፡፡	☐
	ከድሮውትንሽቀንሷል፡፡	☐		አልፎአልፎ፡፡	☐
	በጥቂቱያስደስተኛል፡፡	☐		ብዙጊዜ፡፡	☐
	ጭራሽአያስደስተኝም፡፡	☐		በጣምብዙጊዜ፡፡	☐
3	አንድ መጥፎነገርሊያጋጥመዎ የተቃረበየሚመስልፍርሀትይሰማዎታል?		3	ለአለባበስዎ ትኩረትን መስጠት አቁመዋል? አዎን ምንም ትኩረትእየሰጠሁአይደሉም?	☐
	እጅግበጣምይሰማኛል፡፡	☐		የምፈልገውን ያህል ትኩረትእየሰጠሁአይደለም፡፡	☐
	በጥቂቱይሰማኛል፡፡	☐		ድሮከምሰጠውትኩረትበጥቂቱያነሰትኩረትእሰጣለሁ፡፡	☐
	ምንምአይሰማኝም፡፡	☐		ሁሌምየምሰጠውንትኩረትእሰጣለሁ፡፡	☐
4	መሳቅናየነገሮችን አስቂኝነንማየትይችላሉ?	☐	4	አንድቦታመሄድያለብዎይመስልተረጋግቶመቀመጥይቸግረዎታል?	
	አብዛኛውንጊዜ እችላሉሁ፡፡	☐		በጣምብዙጊዜይቸግረኛል፡፡	☐
	እንደድሮውባይሆንም እችላሉሁ ፡፡	☐		ብዙጊዜይቸግረኛል፡፡	☐
	በጥቂቱ እችላሉሁ፡፡	☐		ብዙምአይቸግረኝም፡፡	☐
	ምንምአልችልም፡፡	☐		ምንምአይቸግረኝም፡፡	☐
5	ጭንቀትንየሚያጭሩሀሳቦችበአእምሮዎትምንያህልይመላለሳሉ?		5	መጭነገሮችንበደስታይጠብቃሉ?	
	በጣምብዙጊዜ	☐		አዎ	☐

					ሁሌምበተለመደውወይምበድሮውመጠንእጠብቃለሁ።	
	ብዙጊዜ	☐			ከድሮውወይምከተለመደውበጥቂቱባነሰመጠንእጠብቃለሁ።	☐
	አብዛኛውንጊዜባይሆንምአልፎአልፎ	☐			ከድሮውወይምከተለመደ ባነሰመጠንእጠብቃለሁ።	☐
	አንዳንድ ብቻ።	☐			ምንምበደስታአልጠብቅም።	☐
6	ደስተኛ ነዎት?			6	በድንገትየመደንገጥወይምየመሸበርስሜትይሰማዎታል?	
	ምንምደስተኛአይደለሁም።	☐			በጣምብዙጊዜይሰማኛል፡	☐
	ብዙጊዜደስተኛአይደለሁም።	☐			ብዙጊዜይሰማኛል።	☐
	ብዙምባይሆንምደስተኛነኝ።	☐			አልፎአልፎይሰማኛል።	☐
	አብዛኛውንጊዜደስተኛነኝ።	☐			ምንምአይሰማኝም።	☐
7	ተረጋግተውመቀመጥእናዘናማለትይችላሉ?			7	በሬዲዮ/ቴሌቪዥንፕሮግራሞችራስዎንያስደስታሉ?	
	ሁሌም እችላለሁ።	☐			አዎን ብዙጊዜ።	☐
	አብዛኛውንጊዜ እችላለሁ።	☐			ብዙባይሆንም አዎ።	☐
	ብዙውንጊዜአልችልም።	☐			አልፎአልፎ።	☐
	ምንም አልችልም።	☐			በጣምአልፎአልፎ።	☐

ክፍል5፡የማህረሰብድጋፎችዙሪያየሚዳስስመጠይቅነው፡፡

መመሪያ፡ከዚህበታችየተቀመጡጥያቄዎችእርስዎከማህበረሰቡብሚያገኙትድጋፎችላይያተኩራል፡፡ሁሉንምጥያቄዎችእያንዳንዳቸውንበትኩረት ተመልክተውየእርስዎንየማህበረሰብድጋፍደረጃይገልጽልኛልያሉትንምላሽበተቀመጠውአራትማዕዘንላይ (X) ምልክትበማድረግምላሽዎትንይስጡ፡፡

ተ.ቁ	ጥያቄዎች	(X)
1	ምን ያክል በሚፈልጉት ጊዜ የነረቤትዎን እና የጓደኞችዎትንድጋፍ ያገኛሉ?	
	በጣም በቀላሉ፡፡	5☐
	በቀላሉ፡፡	4 ☐
	ምናልባት፡፡	3 ☐
	ከባድነው፡፡	4 ☐
	በጣምከባድነው፡፡	1 ☐
2	ምንያክል በአስፈላጊ ጊዜያት ሊደርስልዎት የሚችል የቅርብ ሰዎች አሉዎት?	
	ምንም	1 ☐
	1-2 ሰዎች	2 ☐
	3-5 ሰዎች	3 ☐
	5+ ሰዎች	4 ☐
3	ምንያክል በሚፈልጉት ጊዜ የነረቤትዎን እናየ ጓደኞችዎትን ድጋፍ ያገኛሉ?	
	ብዙ	5☐
	በጥቂቱ	4 ☐
	ያልተወሰነ/አንዳንዴ	3 ☐
	በጣምበትንሹ	2 ☐
	ምንም	1 ☐

ስለመልካምትብብርዎበጣምእናመሰግናለን፡፡

Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

Date _____

Time _____

INTRODUCTION AND CONSENT STATEMENT

The general objective of this research is to study the role of counseling service in enhancing the academic performance of student

Please note the following remarks.

1 The information collected is going to be used only for the research purpose and will be kept confidential.

2 If you encounter any ambiguity, it is necessary to ask.

3 You also have a right to do not participate in providing information in this interview.

4 Please be kindly informed that your cooperation by giving genuine information is highly valuable to complete the study.

So, are you voluntary to participate in this study? Yes _____ No _____