

ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF ALLIED HEALTH SCIENCE DEPARTMENT
OF NRSING AND MIDWIFERY POST GRADUATE PROGRAM

ASSESSMENT OF PREVALENCE OF CANCER PAIN AND ANXIETY AND
ASSOCIATED FACTORS AMONG PATIENTS ADMITTED TO ONCOLOGY
WARD, TIKUR ANBESSA SPECIALIZED HOSPITAL, ETHIOPIA, 2017.

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Assessment of prevalence of cancer pain and anxiety and associated factors among patients admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2017.

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Abstract

Introduction: Pain is an unpleasant and subjective experience that involves sensory, affective, cognitive, social, and behavioral components. The WHO statistics indicated that approximately 2 million people suffer from pain everyday worldwide. Pain is one of the most common symptoms in patients with malignant tumor, substantially affecting patients' quality of life. The diagnosis and treatment of cancer considered as a major life stress can cause or aggravate the related psychological distress. Some studies have indicated that anxiety was one of the common psychological distresses in cancer patients(1, 2).

Objective: To assess the prevalence of cancer pain and anxiety and associated factors among patients admitted to oncology ward, TASH, Ethiopia, 2017.

Methods: A cross-sectional study design was conducted. The sample size was calculated using single population proportion formula. Data collectors were instructed to check the completeness of the instrument just after its completion. Moreover, the collected data was coded, cleaned and explored before analysis to check missing items and completeness of the collected data. Odds ratio was computed to assess the presence and magnitude of association between dependent and independent variables. Moreover, a logistic regression was done to control the possible confounding effect so as to assess the separate effects of the variables.

Result: From the total 220 subjects, 72.3% had cancer or treatment related pain. Of those who had pain, 80% had moderate to very severe pain and 62.3% did believe that the cause of their pain was cancer lesion. Moreover, only 48.2% used pain management. Interference of ADL due to pain was mentioned by 61.5% respondents of the total 160 subjects who have pain. Colorectal cancer 49(22.3%) was the most prevalent cancer type followed by lung cancer 29(13.2%). About 70(31.8%) of participants were in clinical stage IV. On the other hand 101(45.9%) of the respondents have waited 0-3 months. the rest 68(30.9%) and 51 (23.2%) had length of stay of 4-6 and >6 months before beginning RX, respectively. Pain and anxiety were significantly associated. Besides, length of stay, duration since they knew their DX, cancer types and stage of the disease were important determinants of cancer pain and anxiety.

Conclusion: The investigation revealed that three fourth of cancer patients suffered from pain and anxiety was common among cancer pts.

Recommendation: It would be better if TASH administrative bodies, researchers and nurses of oncology ward consider pain and anxiety as priority problems to be managed accordingly.

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Abbreviations and acronyms

- AAU-----Addis Ababa University
- ADL-----Activity of Daily Living
- AOR-----Adjusted Odd Ratio
- BC -----Breast Cancer
- CAM-----Complementary Alternative Medicine
- CI-----Confidence Interval
- COR-----Crude Odd Ratio
- DX-----Diagnosis
- EPIC-----European Pain In Cancer
- FMOH-----Federal Ministry Of Health
- GI-----Gastro Intestinal
- HADS-----Hospital Anxiety and Depression Scale
- HN-----Head and Neck
- ICU-----Intensive Care Unite
- IRB-----Institutional Review Board
- NCR-----National Cancer Registry
- NCS-R-----National Comorbidity Survey Replication
- NHS-----National Health Service
- OR-----Odds Ratio
- PI-----Principal Investigator
- PTS-----Patients
- QOL-----Quality Of Life
- RX-----Treatment
- St. Paul-----Saint Paul
- TASH-----Tikur Anbessa Specialized Hospital.
- UK-----United Kingdom
- USA-----United States of America
- VAS-----Visual Analogue Scale
- WHO-----World Health Organization

1. Introduction

1.1. Background information

Pain is an unpleasant and subjective experience that involves sensory, affective, cognitive, social, and behavioral components. It is a major cause of human suffering and loss of quality of life. Health professionals have an ethical, deontological and clinical responsibility to play a main role in the management of care, provided to cancer patients and their families to contribute to effective pain control. Despite extensive progress in the scientific understanding of pain, 51% to 77% of cancer patients experience moderate to severe pain at some time during their illness. Theoretically, 90% of cancer pain can be adequately relieved with relatively simple medical intervention. However, fewer than 50% of cancer patients actually achieve effective pain relief in practice. (3, 4)

Pain can reduce strength, vitality, activity tolerance and mobility. Cancer patients with pain report significantly lower levels of performance status than those without pain demonstrated that pain due to cancer was associated higher levels of perceived disability and a lower degree of activity. Pain may affect a person's ability to care for themselves, to work or to participate in fulfilling activities. The experience of cancer pain may also result in disruption to family and careers' quality of life. Thoughts and emotional responses can contribute to the intensity of the pain experience. Anxiety, depression, fear of the future, hopelessness, negative perceptions of personal and social competence, decreased social activity/social support and lack of control over pain may all be important. (5)

The concept of cancer and cancer pain has become more prevalent in the world. Cancer patients usually go through intense and chronic pain. Patients may experience moderate to severe pain due to malignant tumor or side effects of treatment regimens like chemotherapy, radiation therapy or surgery. Psychological distress increases with intensity of cancer pain. Cancer pain is often under reported and under treated for a variety of complex reasons partly due to a number of beliefs held by patients, families and health care professionals. There is evidence that cognitive behavioral technique that addresses catastrophizing and promotes self-efficacy lead to improved pain management. Group format pain management programs could contribute to care of cancer survivors with persistent pain. (5, 6)

The diagnosis and treatment of cancer considered as a major life stress can cause or aggravate the related psychological distress. Some studies have indicated that anxiety was one of the common psychological distresses in cancer patients. More importantly, the unrecognized and untreated anxiety could lead to difficulty with symptom control, poor compliance with treatment, prolonged recovery times and impaired quality of life. Because of the high prevalence and the negative impacts of anxiety, a lot of studies mainly explored the variables influencing anxiety among cancer patients.(1, 7, 8)

1.2. Statement of the problem

There were two million cancer survivors in UK. In USA 1,638,910 new cancer cases and 577,190 deaths from cancer were estimated in 2012. Cancer is predicted to be an increasingly important cause of morbidity and mortality in the next few decades, in all regions of the world. Within the forecasted changes in population demographics in the next two decades, the estimated incidence of 12.7 million new cancer cases in 2008 will rise to 21.4 million by the year 2030. While cancer diagnosis has become more prevalent, it is no longer considered to be a death sentence, but rather a disease that patients must manage and live with. Numerous studies have shown that depression, anxiety, stress and poor quality of life are often psychological consequences of living with cancer, and cancer patients face the double challenge of learning to manage the physical as well as psychological effects of cancer.(9, 10)

The bi-dimensional model analysis found that there was a large positive correlation between anxiety and depression ($r=0.638$), and both scores were significantly positively correlated with pain severity. An anxiety disorder along with chronic pain can be difficult to treat. Those who suffer from chronic pain and have an anxiety disorder may have a lower tolerance for pain. People with an anxiety disorder are more sensitive to medication side effects or more fearful of side effects than, and they may also be more fearful of pain than someone who experiences pain without anxiety.(11)

In Africa, it is an emerging public health issue, with estimated 715,000 new cases and 542,000 deaths in 2008 only. Half a million people die of cancer in sub-Saharan Africa every year. Data from South Africa's NCR shows breast cancer as the leading cancer among women. South African women have a 1 in 29 lifetime risk of developing breast cancer, with an age-standardized incidence rate of 30.6 per 100,000 populations. These rates vary by race group, with Black women having the lowest (16.3) and White women the highest (69.4) rates of breast cancer diagnosis.(12)

The FMOH estimated that there could be more than 150,000 cancer cases in Ethiopia each year though available data was limited. About 2013 adult cancer patients visited Tikur Anbesa Specialized Hospital in 2012. Comprehensive cancer registration and population based measurement of cancer burden are yet to be done in Ethiopia.(13)

Pain is a most common as well as terrible symptom of cancer that patient's experience. The prevalence of pain is estimated in oncology patients up to 25 % in newly diagnosed, 33% in those who are under active treatment and more than 75%, in patients with advance stage of cancer. Pain is complex; it gives physical as well as psychological discomfort to individuals. In addition, patients with cancer pain are most likely to go through disability, fatigue, anxiety and depression. The prevalence of depressive and anxiety symptoms was 78.0% and 71.3% in bladder cancer patients, and 77.6% and 68.3% in renal cancer patients, respectively.(14)

Chemotherapy and radiation therapy have a bad effect on the quality of life of cancer patients which causes them to use more CAM. About 91% patients, who were on radiation or chemotherapy, were using CAM. Other studies also reported that 84% of cancer patients were using complementary or traditional therapies in Pakistan and affirmed that CAM can decrease the physical and psychological pain of patients on cancer treatment.(15)

1.3. Justification of the study

Cancer is still a threatening pandemic that has eroded many lives and affected the growth and development of many countries, especially in sub-Saharan Africa where the pandemic is increasing and the pain and anxiety of people living with cancer has been undermined. Inadequate pain assessment is one of the most common causes for poor cancer pain management and in turn contributes to poor quality of life. The magnitude of unrelieved pain can be judged from the fact that pain has been declared as the “fifth vital sign.” An evaluation process based upon patient's own description of pain, its characteristics and significance imparted to it is an indispensable component of adequate cancer pain management. Unconventional therapies are currently an unavoidable reality in the world of health care, and they have been widely used in Eastern cultures. The search for the best evidence in pain and anxiety control has led researchers to the discovery of their benefits, so they can be associated to existing therapies, as another element that favors a better quality of life. Despite the importance of cancer pain management,

its development has been slow in Africa as well as in Ethiopia. The development of accessible health care that addresses the needs of cancer patients and enhance their QOL, is imperative. In Ethiopia, information about cancer pain and anxiety and influencing factors is lacking. Investigating cancer pain and anxiety may be crucial in identifying how cancer patients are suffering from pain and what could be the influencing factors. Cancer pain should take a primary hand in cancer care settings. But, it is still under reported.(16)

Limited researches are done on the assessment of prevalence of cancer pain and anxiety and associated factors in our country. Therefore result of this study may contribute some importance for the hospital as well as to the country in drawing the attention of the policy makers, health care managers and health care professionals especially nurses so as to stimulate them to take appropriate measures to its management and pointing researchers to view it as one of the area of investigation. Further, the result of the study can be used as a baseline data for further related studies.

2. Literature review

The World Health Organization statistics indicated that ~2 million people suffer from pain everyday worldwide. Pain is one of the most common symptoms in patients with malignant tumor, substantially affecting patients' quality of life. Approximately 25% of newly diagnosed patients report pain and ~60%–80% of patients with advanced cancer have chronic pain, one-third of them are categorized as severe. Lung cancer is the most common malignant tumor worldwide, with an average survival of 1 year in advanced patients making palliative care an especially important consideration. The incidence of pain is 47% in all patients with lung cancer, and 76% in those in palliative care.(17, 18)

Cancer pain is common and its prevalence is related to the stage of illness: 48% of patients with early disease; 59% undergoing cancer treatment; 64–74% with advanced disease. These findings are in keeping with those in the recent European Pain in Cancer (EPIC) survey of 11 European countries, which indicated an overall pain prevalence of 72% of patients with cancer in the community. This was slightly higher in the United Kingdom at 77%. (19)

Recently, a pan-European survey of prevalence, treatment and patient attitudes about cancer related pain found that pain severity was quite variable within different kinds of cancers and different countries. Of 5084 patients, 56% suffered moderate-to-severe pain at least monthly, and 50% believed that their quality of life (QOL) was not considered a priority by their healthcare professional. Despite more than two decades of education in Europe, greater insight into the pathophysiological mechanisms of pain, and the wider availability of anti-nociceptive therapies, treatment of cancer pain is still suboptimal.(2)

A study that involves 601 cancer patients was conducted in France. 57% of patients reported pain due to their disease and of those with pain, 69% rated their worst pain at a level that impaired their ability to function. 30% were reported as receiving no drugs for their pain. Of the 270 patients in pain for whom information on treatment was available 51% were not receiving adequate pain relief, according to an index based on the World Health Organization's guidelines.(20)

A study conducted in UK used to assess the prevalence of pain at a tertiary cancer referral center, on the adequacy of pain control and for risk factors leading to higher prevalence and severity of pain. 149 patients were surveyed. 53% of patients had pain within the previous 7 days, and 25% had significant pain. Of those with pain, 63% was inadequately controlled and neuropathic pain was identified in 36%.

Age, gender, tumor type, and the type of cancer treatment were not significant predictors of the prevalence or severity of the pain.(21)

A study that involves 505 patients was conducted in Boston, 67.3% were pain free at the initial visit, 17.8% experienced mild pain, 9.5% experienced moderate pain and 5.4% experienced severe pain. At least one episode of severe pain within one year of diagnosis was reported by 29.1% of patients. Patients with head and neck, gastrointestinal and thoracic malignancies were more likely to experience severe pain compared with patients with other types of cancer (52.6%, 33.9% and 30.5%, respectively). In the multivariable model, patients whose primary language was not English (OR 2.90, 95% CI 1.08 to 7.80), patients who reported severe pain at the initial visit (OR 9.30, 95% CI 3.72 to 23.23) and patients with head and neck (OR 10.17, 95% CI 2.87 to 36.00) or gastrointestinal (OR 4.05, 95% CI 1.23 to 13.35) cancers were more likely to report severe pain in the following year. Patients who were younger than 60 years of age were more likely to report any pain compared with older patients (32% v 21%). The prevalence of severe pain was highest among those age 18 to 39 years (9%). Women had a somewhat higher frequency of any pain compared with men (29% v 24%). Patients who were nonwhite (33% v 25%) or who did not speak English as their primary language (37% v 26%) were also more likely to be experiencing pain at the index ambulatory visit. Pain scores differed across disease groups. Although 20% to 30% of patients reported some pain, the prevalence of moderate or severe pain was highest among patients with thoracic (18%), breast (18%), and head and neck (17%) cancers. The prevalence of pain was lowest among patients with urogenital cancer, with only 2.4% reporting a severe pain score(22).

A study conducted in Taiwan enrolled 2075 patients. 1051 patients reported pain within the previous week and Breast cancer (BC) and gastrointestinal (GI) cancer (including colorectal) were the most common cancers, followed by HN cancer. Other study was conducted in Taiwan and of 480 cancer patients from 15 hospitals, pain was reported by 257 patients (54%), and severe pain was reported by 35% of patients. Only 149 of the patients who reported pain were receiving analgesia.(23)

According to the study conducted in India, of 126 patients included in the study 75.40%, 62.70%, 26.98%, and 13.49% patients had pain, moderate-severe, chronic, and neuropathic pain, respectively. The average duration of pain was 171.16 ± 716.50 days. Totally, 46.03% and 42.01% patients had at least one or more than one neuropathic pain symptoms, respectively. The primary malignancies associated with the highest prevalence of pain were genitourinary, hematological, and head and neck

whereas breast and lung cancers were associated with the highest prevalence of neuropathic and chronic pain, respectively. A total of 89 (70.63%) and 37 (29.37%) patients had advanced and early malignancy, respectively. A total of 49.2% patients reported pain to be the most distressing symptom at the time of ICU admission and 80% (76) of the patients having pain reported to have “pain interfering with their sleep.”(24)

According to the study conducted in china Patients with non-small-cell lung cancer and small-cell carcinoma accounted for 86.8% and 13.2% of 152 lung cancer cases, respectively. Among them, moderate 72.4% and severe pain 27.6% was reported in 73.7% of the cases at stage IV, chest or back pain was reported in 76.3% of the cases, and pain in other locations in the rest of the cases. Bone metastases were apparent in 44.1% of the patients. Neuropathic pain was noted in 46.7% of the patients.(25)

A total of 124 patients were interviewed in a study conducted in Saudi Arabia, of whom 82.3% had metastatic disease. The most common cancers were breast 27.4% and head and neck (15.3%). The majority of patients 85.5% reported pain, with a median intensity score of 5 and a mean of 4.6. Of those who reported pain, 51% scored above 4. The mean pain score did not differ between groups of patients according to various characteristics such as age, sex, performance status, type of cancer or encounter type.(14)

According to the study conducted in New York, USA, The prevalence of clinical anxiety as determined via the HADS (HADS \geq 8) was 23%.(26)

According to the study conducted in Massachusetts General Hospital Cancer Center, Boston, the NCS-R sample consisted of 225 long-term cancer survivors and 5,337 people without a history of cancer. Controlling for socio-demographic variables, long-term cancer survivors were more likely to have an anxiety disorder (OR: 1.49, 95% CI: 1.04-2.13), including specific phobia (OR: 1.59, 95% CI: 1.06-2.44) and medical phobia (OR: 3.45, 95% CI: 1.15-10.0), during the past 12 months compared to those without cancer histories. In the NCS-R sample, 225 individuals met criteria for long-term survivorship, having been diagnosed with cancer after the age of 18 and at least five years prior to the survey. The cancer types represented in the sample were diverse and included: breast (24.0%), melanoma (18.7%), cervical (10.0%), prostate (8.0%), uterine (7.2%), colon (7.0%), ovarian (1.8%), lymphoma/ leukemia

(1.8%), lung (0.7%), among others (25.6%). The comparison sample included 5,337 people without cancer histories. The demographic characteristics of.(27)

Seventeen eligible studies with a total of 3497 subjects were included. The prevalence of depression and anxiety were significantly higher in adults with cancer compared with those without (Depression: 54.90% vs. 17.50%, OR = 7.85, 95% CI = 5.56-11.07, P = 0.000; Anxiety: 49.69% vs. 18.37%, OR = 6.46, 95% CI = 4.36-9.55, P = 0.000). According to the study conducted in china, the prevalence of depression and anxiety was 52.2% and 65.6% in cervical cancer patients. The anxiety score was significantly higher in patients at the period of 4–6 months after diagnose and at cancer stage II. A study was conducted in New York to assess Anxiety in Terminally Ill Cancer Patients. Moderately elevated anxiety symptoms were found in 18.6% of participants and 12.4% had clinically significant anxiety symptoms.(28) A total of 193 patients were involved in a study in Malesia. The prevalence of anxiety was 25.4% (95%CI: 19.2 – 31.6). The anxiety ratings were mild anxiety (10.4%), moderate anxiety (13.6%) and severe anxiety (1.6%). Another study conducted in Iran shows, 29.3% patients had mild anxiety, 16.7% symptomatic anxiety There were significant relationships between anxiety, depression and the age group of the patients with higher frequency in older ages.(29)

2.1. Conceptual frame work

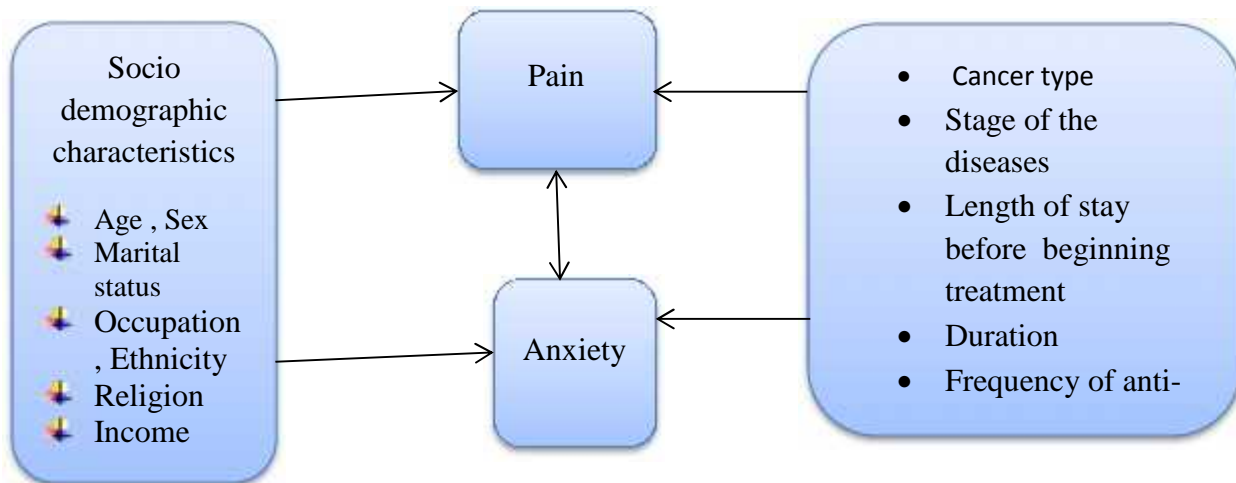


Figure 1: conceptual frame work (30, 31)

3. Objectives of the study

3.1. General objective

- To assess the prevalence of cancer pain and anxiety and associated factors among patients admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2017.

3.2. Specific objectives

- I. To assess the prevalence of cancer pain among pts admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2017.
- II. To assess the prevalence of anxiety among pts admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2017.
- III. To assess factors associated with cancer pain and anxiety among pts admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2017.

4. Methods

4.1. Study area and period

The study was conducted in Tikur Anbessa Specialized Hospital, Addis Ababa, capital city of Ethiopia. It is a referral hospital and treats approximately 370,000- 400,000 patients per year. The emergency department treats around 80,000 patients per year. The hospital has 800 beds, with 169 specialists and 65 non-teaching doctors. It got eight major operating theatre rooms. The hospital is the largest teaching hospital for Addis Ababa University, School of Medicine in Ethiopia. It is the training center for fellows, postgraduate, undergraduate, medical students, dentists, nurses, radiographers and laboratory technicians. There are about 25 fellows, 500 residents, 1396 medical students and 99 interns. A total of 16,622 new cases of cancer in TASH registry data set were diagnosed between 1997 up to 2012. In 2015 new cases registered were 2,150. At present, the oncology clinic of Tikur Anbessa Hospital is the major referral center that provides oncology care service in the country. Currently, the clinical service is run by 3 senior oncologists, 22 resident doctors and 30 clinical nurses. Every year the unit takes at least 2000 new diagnosed patients but the waiting time to start treatment is more than 6 months. In the meant time 14% of them may die without any help or comfort(32).

The study was conducted from Feb. to May, 2017.

4.2. Study design

A cross-sectional study design was conducted.

4.3. Population

4.3.1. Source population

All patients aged 18 and older admitted to oncology ward to TASH between Feb. to May, 2017.

4.3.2. Study population

Patients aged 18 and older and attending a TASH oncology in patients.

4.4. Eligibility criteria

4.4.1. Inclusion criteria

Age 18 and older

4.4.2. Exclusion criteria

Critically ill, hearing impairment, changes in consciousness level or cognitive disorders and those who did not consent was excluded.

4.5. Sample size and Sampling technique

The sample size was determined using a formula for estimation of single population proportion with the following assumptions.

Since the proportion of cancer pain is unknown (according to the scope of my search) in Ethiopia, 50% of population proportion was used to determine sample size. In addition, a 5% margin of error, 95% confidence level and 15% non-response rate was considered.

Non-probability (convenient) method of sampling was used.

$$n = \frac{(Z\alpha/2)^2 p(1-p)}{d^2} = 384$$

Where: Z= is standard normal variable at 95% confidence level (1.96)

p= the proportion of cancer pain (50%)

d= the desired marginal error (5%)

n= the total sample size

With which sample size (n) become 384. Since the number of source population is less than ten thousands, the population correction formula was employed.

$$n_f = \frac{n}{1+n/N}$$

Where:

N= total number of patients attending TASH oncology ward per three months is 450.

$$n_f = \frac{384}{1 + 384/450} = \frac{384}{1.85} = 208$$

After which N_f become 208 and considering 15% non-response rate of this, lastly the final sample size is 239.

4.6. Study variables

4.6.1. Independent variables

Socio-demographic characteristics

- Age
- Sex
- Religion
- Ethnicity
- Marital status
- Occupation
- Income

Cancer related problems

- Cancer type
- Stage of the diseases
- Length of stay before beginning treatment
- Duration
- Frequency of anti-pain

4.6.2. Dependent variables

- Pain and anxiety

4.7. Data collection procedures

The assessment tool is composed of questions to assess socio-demographic characteristics, prevalence of cancer pain and anxiety and associated factors. Four Nurses working in cancer ward were recruited as data collectors and training on the data collection process was given a week before the initiation of the actual data collection. Besides, one senior nurse was recruited to supervise the data collectors.

4.7.1. Data collection tools

Data was collected by using structured interviewer administered questionnaire. Pain intensity was assessed using four point verbal rating and Anxiety was assessed with Hospital Anxiety Scale (HAS). If the participants have pain they were again required to rate their pain from mild to very sever (mild, moderate, sever and very sever pain). Anxiety was calculated from seven components of anxiety scale each ranging 0 to 3, summation of which gives 0 to 21(free from anxiety to case DX). The questionnaire was adapted and adopted from HADS and the four point verbal rating scale(33). Both have been shown to be reliable, valid and appropriate for clinical use.

4.8. Operational definition

Mild pain: if the clients' perception for rating of pain severity is 4, it is considered as mild pain

Moderate pain: if the clients' perception for rating of pain severity is 3 it is considered as moderate pain

Severe pain: if the clients' perception for rating of pain severity is 2 it is considered as severe pain

Very severe pain: if the clients' perception for rating of pain severity is 1 it is considered as very severe pain

Anxiety: the degree of physical or mental upset, anguish, or suffering experienced from a specific symptom. Classified as follows:

Normal: if the clients' perception for rating of symptom distress/bothersome is 0 to7 it is considered as Normal.

Borderline abnormal (borderline case): if the clients' perception for rating of symptom distress/bothersome is 8 to10 it is considered as Borderline abnormal (borderline case).

Abnormal (case): if the clients' perception for rating of symptom distress/bothersome is 11 to 21 it is considered as Abnormal (case).(34)

4.9. Data quality control

The questionnaire was initially prepared in English and translated to Amharic then back to English. Before the actual data collection the questionnaire was pre tested on 10% of the study population at St. Paul hospital two weeks before the actual data collection. Amendments on the instrument, such as on unclear questions, ambiguous words was made accordingly. 4 data collectors (registered nurses) was recruited based on their experience in research. Training was given for one day on the objective of the study, instrument and data collection procedures by the principal investigator. Data collectors were instructed to check the completeness of the instrument just after its completion. The PI checked out the questionnaire for completeness each night. Moreover, the collected data was coded, cleaned and explored before analysis to check missing items and completeness of the collected data.

4.10. Data analysis procedures

The data was analyzed using SPSS version 20. Summary statistics (frequencies, means, and standard deviations) of demographic characteristics of participants to identify any important baseline differences across study population was calculated and presented using figures, tables, diagrams and texts. Logistic regression was done to control the possible confounding effect so as to assess the independent effects of the variables. Odds ratio with 95% CI and associated P-value was computed. Significance level was considered at P-value < 0.05.

4.11. Ethical consideration

Formal letter of ethical clearance and approval was obtained from Addis Ababa University IRB. Letter was submitted to TASH oncology ward. Then letter of permission was obtained from head nurses of oncology ward. All participants recruited to the study had received written information sheet about the study. Respondents were ensured about the confidentiality of information obtained and the respondents name was not asked.

4.12. Dissemination of the result

The findings of this study will be presented in Addis Ababa University department of nursing and midwifery and different conferences. The study finding again will be dispatched to local, international as well as policy makers. Lastly, it will be published in reputable national or international journal to make it accessible to the scientific community.

5. Results

A total of 239 interviewer administered questionnaires were used among the study subjects; out of which 220 were filled out completely, making the response rate 92.05%.

Socio-demographic characteristics

From the total of 220 respondents 117 (53.2%) were males and 169(76.8%) were at the age range between 24 and 64 years. Oromo ethnic group constituted the largest proportion, 89 (40.5%), followed by Amara making up 60 (27.3%) of the study population. Majority, 122 (55.5%) of them were Orthodox and Muslim religion followers were the second largest group accounting 57 (25.9%). With respect to their marital status, 124 (56.4%) of them were married while 53 (24.1%) were single at the time of the study. Only 3(1.4%) of the study participants had MSc degree while 59(26.8%) were illiterate. With respect to their job, 59(26.8%) of the total study participants were government employees. With regard to the participant's income, 136(61.8%) of the study participants had monthly income of less than 1000ETbr. (Table1)

Table 1: Socio-demographic characteristics of patients attending Tikur Anbessa Specialized Hospital, oncology ward, Addis Ababa Ethiopia, 2017

Variables	Category	N	Percent
Age	18-24	30	13.6
	25-64	169	76.8
	>64	21	9.5
sex	Male	117	53.2
	Female	103	46.8
Ethnicity of patients	Oromo	89	40.5
	Amara	60	27.3
	Tigray	24	10.9
	Gurage	10	4.5
	Others	37	16.8
religion of patients	orthodox	122	55.5
	Muslim	57	25.9
	protestant	32	14.5
	catholic	7	3.2
	others	2	0.9
marital status of patients	Single	53	24.1
	married	124	56.4
	divorced	17	7.7
	widowed	26	11.8
Educational status	illiterate	59	26.8
	1-8	34	15.5
	9-12	64	29.1
	BSC.	32	1.4
	MSC.	3	1.4
	diploma	28	12.7
job of patients	housewife	33	15.0
	daily labourer	26	11.8
	Government employee	59	26.8
	farmer	38	17.3
	merchant	23	10.5
	student	19	8.6
	others	22	10.0
Income	<1000	136	61.8
	1001-200	22	10.0
	2001-3000	28	12.7
	> 3000	34	15.5

Proportion of cancer pain

Colorectal cancer 49(22.3%) was the most prevalent cancer type followed by lung cancer 29(13.2%). While the rest 24(6.4%), 25(11.4%), 23(10.5%), 13(5.9%), 16(7.3%), 18(8.2%) and 14(6.4%) have liver, cervical, osteogenic, esophageal, gastric uterine cancer and others (skin, eye, oropharyngeal, neck etc.), respectively. However, only 9(4.1%) of the participants do have breast cancer. Around 70(31.8%) of participants were in clinical stage IV cancer while the rest 43 (19.5%), 48(21.8%) and 59 (26.8%) were in stages I, II and III, respectively. (Table 2)

Table 2: The proportion of cancer patients by type and stage of cancer among patients attending Tikur Anbessa Specialized Hospital oncology ward, Addis Ababa Ethiopia, 2017.

	category	Frequency	Percent
Cancer types	lung cancer	29	13.2
	others	14	6.4
	liver cancer	24	10.9
	colorectal cancer	49	22.3
	cervical cancer	25	11.4
	osteogenic cancer	23	10.5
	breast cancer	9	4.1
	esophageal cancer	13	5.9
	gastric cancer	16	7.3
	uterine cancer	18	8.2
		Total	220
Stage of the disease	Stage I	43	19.5
	Stage II	48	21.8
	Stage III	59	26.8
	Stage IV	70	31.8
		Total	220

From the total of 220 respondents, about 190(86.4%) have been with cancer for 0-25 months since they know their diagnosis and 24(10.9%) of the subjects do know their diagnosis in the past 26-50 months,

while the rest 6 (2.7%) knew their diagnosis before 51 months with a mean and standard deviation of 24.44 and 19.69 months, respectively. On the other hand 101(45.9%) of the respondents have waited 0-3 months before they start their treatment and the waiting time for 68(30.9%) of them was 4-6 months. Whereas 51 (23.2%) of the study participants did start their treatment 6 months and above after they know that they do have cancer. The average waiting time between diagnosis and beginning of treatment was 4.4 months with the standard deviation of 2.37 months. (Table 3), (fig 2)

Table 3: Duration and length of stay of patients attending Tikur Anbessa Specialized Hospital oncology ward, Addis Ababa Ethiopia, 2017.

SN	Category	Frequenc y	Percent	mean	Std. deviation
1. Duration since they know their DX	0-25 months	190	86.4	24.44 months	19.685 months
	26-50 months	24	10.9		
	51-100 months	4	1.8		
	>101 months	2	.9		
2. Length of stay before starting RX	0-3 months	101	45.9	4.4 months	2.363 months
	4-6 months	68	30.9		
	7-10 months	51	23.2		

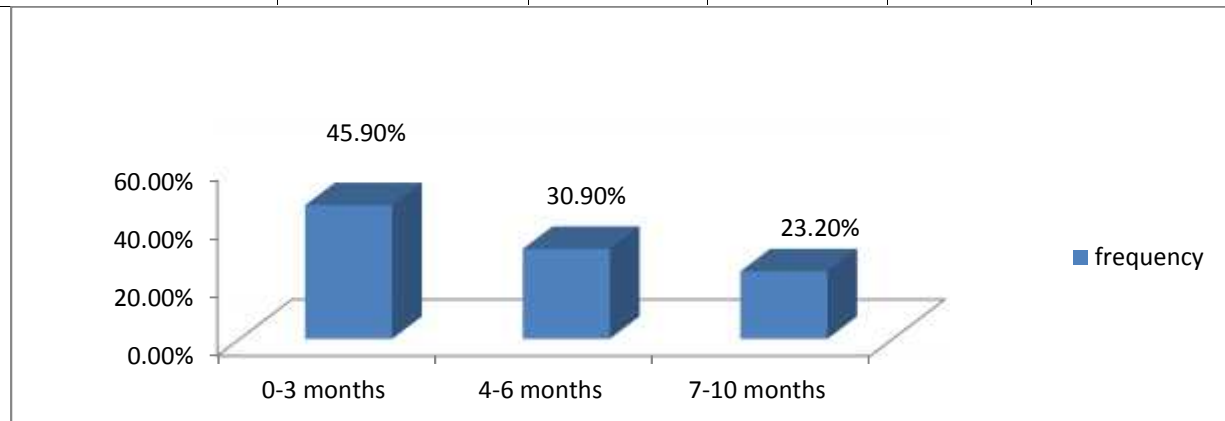


Figure 2: length of stay between diagnosis and treatment among patients attending Tikur Anbesaa Specialized Hospital, oncology ward, Addis Ababa Ethiopia, 2017

The magnitude of pain was 72.7% (95%CI: 66.8 to 78.6). Among those who have pain, 60(37.5%) were experiencing severe pain and 43(26.9%), 25(15.6%) and 32(20%) were experiencing very sever, moderate and mild pain in the last four weeks respectively. (Fig. 3)

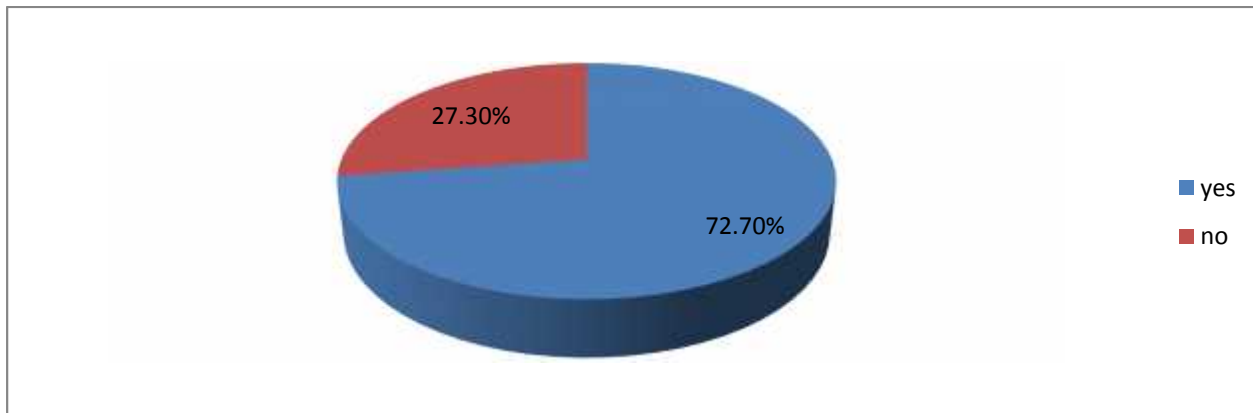


Figure 3: Magnitude of cancer pain among patients attending Tikur Anbessa Specialized Hospital, oncology ward, Addis Ababa Ethiopia, 2017.

Out of the 160 study subjects who have Pain, majority 137 (85.6%) of them reported that the cause of their pain was the lesion from the cancer and 69(43.1%) of them said that the cause of their pain is the surgical procedure. Drug side effect and other reasons have again been listed as causes for their pain accounting 49(30.6%) and 15(9.4%), respectively.

From the total of 220 subjects, 106(48.2%) used prescribed or un-prescribed medication to relieve their pain, while the rest 54(24.5%) did not use any medication to relieve their pain. The study subjects was again required to explain for how often did they took their prescribed or un-prescribed anti-pain medication, 34(15.5%) of them used three or more times a week and 24(10.9%), 15(6.8%) and 33(15%) of them have used less than once, once and twice a week, respectively. Interference of ADL due to pain was mentioned by 142(61.5%) respondents. About 63(28.6%) of the total study participants reported that pain interferes with their daily life very much and rest 30(13.6%) and 49(28.6%) said that pain interferes with their daily life a little and quit a bite respectively (table 4)

Table 4: Magnitude of cancer pain and stated causes among patients attending Tikur Anbessa Specialized Hospital, oncology ward, Addis Ababa, Ethiopia, 2017.

Characteristics		N	Percent	
cancer or treatment related pain	no	60	27.3	
	yes	160	72.7	
Cause of pain	lesion in the cancer site	no	23	14.38
		yes	137	85.6
	the surgical procedure	no	91	38.1
		yes	69	43.1
	drug side effect	no	111	69.4
		yes	49	30.6
	other	no	145	90.6
		yes	15	9.4
Severity of cancer pain	very severe	43	19.5	
	Severe	60	27.3	
	Moderate	25	11.4	
	Mild	32	14.5	
pain interference with normal work	not at all	16	7.3	
	a little	30	13.6	
	quit a bite	49	22.3	
	very much	63	28.6	
prescribed or un-prescribed medication intake	Yes	106	48.2	
	No	54	24.5	
Frequency of anti-pain	less than once a week	24	10.9	
	once a week	15	6.8	
	twice a week	33	15.0	
	three or more time	34	15.5	

Cancer pain and associated factors

Binary logistic regression illustrated that anxiety, length of stay, duration, cancer types and stage of the disease were significantly associated with cancer pain.

Those who were free from anxiety had 92.5% (OR =0.075, 95% CI: 1.031- 1.183) lower odds of pain compared to those who were anxious or those who were anxious were 16.057 times more likely to have pain than those who were free from anxiety and those who were at border line case were 1.762 times more likely to have pain than those who were free from anxiety.

As the duration of the disease increases by a month, the odds of pain increases by 1.939 folds (OR=1.939, 95% CI: .911-2.968) and the odds of pain increases by 1.730 folds (OR=1.730, 95% CI, 1.620- 1.859) in each month increment in length of stay between DX and RX. Those who had colorectal cancer were 1.219 times (OR=1.219, 95% CI, 1.061- 1.785) and those with lung cancer were 1.56 times (OR= 1.56, 95% CI, 1.006-2.5) more likely to have pain than uterine cancer patients respectively. With respect to the stage of cancer, stage of the disease was significantly associated the pain. The odds of pain was 98.7% (OR=0.013, 95%CI, 1.002- 1.099), 98.7% (OR=0.013, 95%CI, 1.002- 1.104), and 93.7% (OR=0.063, 95%CI, 1.008-1.506) lower in stages I, II and III compared to stage IV cancer, respectively.

In the multiple logistic regressions analysis, even though there was some change in P value and OR, the variables remain significantly associated with pain. Patients with no anxiety were 93.4% (OR=0.066, 95%CI, 1.022- 1.198) lower to have pain compared to the participants with anxiety. Each additional month living with cancer makes the patient to increase her/his pain by 1.19 times (OR=1.19, 95%CI, 1.021- 2.157) higher than the previous month. Similarly, for a single month increase in waiting without starting treatment, the odds of pain increased by 1.72 folds (OR=1.72, 95% CI, 1.294- 2.282). Colorectal cancer and lung cancer were 1.076 (OR=1.076, 95%CI: .015- 1.393) and 1.34 times (OR=1.34, 95%CI, 1.002- 1.463) more likely to have pain than uterine cancer, respectively. With regard to stage of the disease, the odds of pain was 99.4% (OR=0.006, 95%CI, 1.000-1.109), 97.3% (OR=.027, 95%CI 1.002- 1.374) and 96.5% (OR=0.035, 95%CI, 1.002- 1.585) lower in stages I, II and III compared to stage IV, respectively.

Table 5: Cancer pain and associated factors among patients attending Tikur Anbessa Specialized Hospital oncology ward, Addis Ababa, Ethiopia, 2017.

Variables	Category	P value	COR(95%CI)	P value	AOR(95% CI)
Age	15-24	.233	.54(.16, 1.89)	.758	.78(.16, 3.85)
	25-64	.339	.6(.21, 1.72)	.860	.89 (.23, 3.41)
	>65				
Anxiety	No	.001*	.08(1.0, 1.18)	.001**	.07(1.02, 1.2)
	Yes				
Sex	male	.124	.62(.34, 1.14)	.072	.31(.09, 1.11)
	Female			.	.
Income	<1000	.088	.47(.20,1.12,)	.080	.22(.04, 1.2)
	1001-2000	.592	1.4(.45,3.99,)	.398	2.1(.37,11.96)
	2001-3000	.085	.35(.11, 1.15)	.921	.93(.22, 3.98)
	>3000			.	.
Ethnicity	Oromo	.064	.36(.161, .82)	.060	9.4(1.7,52)
	Amara	.075	.39 (.16, .94)	.103	.18(.06, .57)
	Tigray	.104	.39 (.13,1.21)	.867	.88(.21, 3.76)
	Gurage	.065	.13 (.02,1.14)	.108	.11(.01, 1.63)
	Others			.	.
duration		.001*	1.94(1.9,2.9)	.009**	1.19(1.02,2.16)
length		.001*	1.7 (1.6,1.86)	.001**	1.7(1.29,2.28)
Cancer types	lung cancer	.011*	1.56 (1.01,2.5)	.011**	1.3(1.002, 1.46)
	Other cancers	.308	2.1 (.51, 8.67)	.469	.51(.08, 3.2)
	Liver cancer	.509	.65 (.18,2.36)	.364	.45(.08, 2.56)
	Colorectal cancer	.002*	1.22 (1.06,1.79)	.002**	1.08(1.02, 1.39)
	Cervical cancer	.397	1.7 (.49, 5.8)	.881	.89(.19, 4.21)
	Osteogenic cancer	.787	.84 (.23,3.01)	.233	.36(.07, 1.95)
	Breast cancer	.778	.79 (.15,4.2)	.704	.66(.08, 5.68)
	Esophageal cancer	.981	.98 (.23,4.25)	.474	.5(.07, 3.35)
	Gastric cancer	.096	.22 (.04,1.3)	.390	.38(.04, 3.45)
	Uterine cancer				
Stage	Stage I	.001*	.01 (1.002, 1.1)	.001**	.01(1.00,1.11)
	Stage II	.001*	.01(1.002, 1.1)	.007**	.03(1.002, 1.37)
	Stage III	.009*	.06(1.01, 1.51)	.020**	.04(1.002, 1.59)
	Stage IV				

Magnitude of anxiety

The magnitude of anxiety was 38.6% (95% CI: 32.7-45.5). Whereas 41.4% and 20% were free from anxiety and borderline cases, respectively.(fig 4)

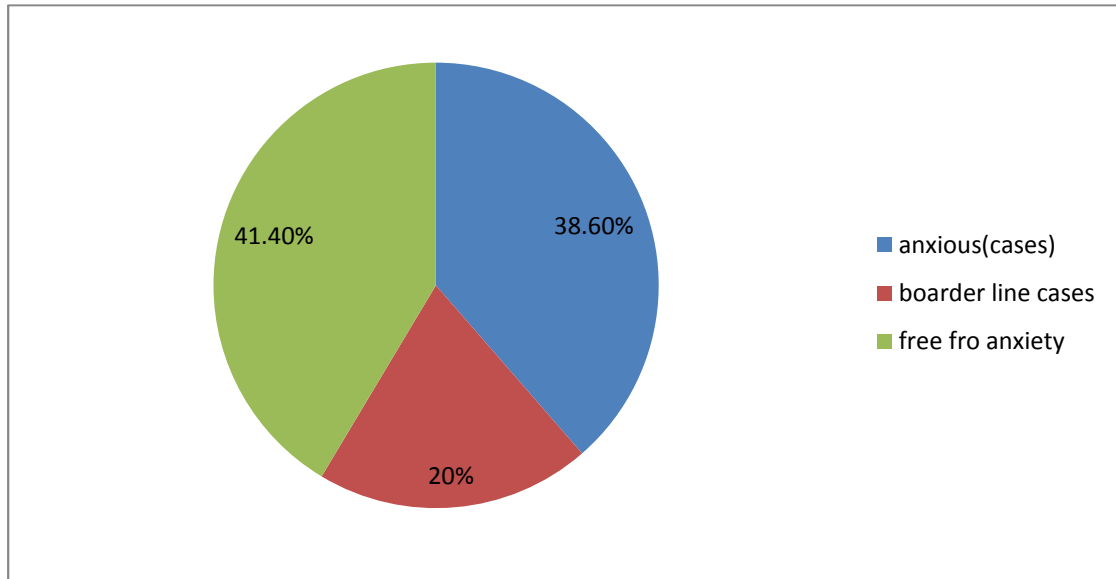


Figure 4: Prevalence of anxiety among patients attending Tikur Anbessa Specialized Hospital, oncology ward, Addis Ababa Ethiopia, 2017.

Anxiety and associated factors

In binary logistic regression analysis; sex, length of stay, duration, cancer type and stage of the disease were important determinants factors of anxiety.

The odds of anxiety was 42.3% lower in females compared to males (OR=.573, 95% CI, 1.331- 1.991). Participants whose waiting time was 0-3 and 4-6 months were 3.997 folds (OR=3.997, 95% CI, 2.042 7.824) and 2.964 folds (OR=2.824, 95%CI, 1.416- 6.203) more likely to be free from anxiety than the patients whose waiting time is 6-10 months. The association between pain and anxiety also shows that pts who have no pain were 13.363 times (OR=13.363 95%CI, 5.455- 32.735) more likely to be free from anxiety. With regard to the cancer types, lung cancer, other cancer types (skin, eye, oropharyngeal, neck etc.), colorectal cancer and cervical cancer were 83.9% (OR=.161, 95%CI: 1.048- 1.541), 73.2% (OR=.268, 95%CI: 1.082- 1.877), 70.5% (OR=.295, 95%CI: 1.100-1.873) and 80.5% (OR=0.195, 95%CI: 1.063- 1.603) less likely to be free from anxiety compared to uterine cancer. On the other hand, stages of the disease was associated with anxiety, the odds of stages I, II, and III were 5.047 folds

(OR=5.047, 95%CI: 2.047-12.443), 2.580 folds (OR=2.58, 95%CI: 1.174- 5.672) and 1.136 folds (OR=1.136, 95%CI: .564- 2.286) higher to be free from anxiety compared to stage IV, respectively. Respondents lived with cancer for 0-25, 26-50 and 51-100 months were 24.27 times (OR=24.27, 95%CI: 3.099- 190.011), 34.67 times (OR=34.67, 95%CI: 3.691- 325.613) and 13.00 times (OR=13, 95%CI: 1.268- 133.285) more likely to be free from anxiety than those who lived with cancer for > 100 months

However, in the multiple logistic regressions analysis, only length of stay, pain, stage of the disease and duration remained significantly associated with anxiety. Patients started treatment in the first 0-3 and 4-6 months of diagnosis were 2.81 times (OR=2.81, 95%CI: 1.152- 6.848) and 2.259 times (OR=2.259, 95% CI: 1.864- 5.903) more likely to be free from anxiety than pts whose waiting time was more than six months. Cancer in-patients who were free from pain was 11.52 times (OR=11.52, 95%CI: 3.992-33.3) more likely to be free from anxiety than pts with pain. It was 5.219 (OR=5.219, 95%CI: 1.52-17.97), 1.510 (OR=1.51, 95%CI: 1.526- 4.336) and 1.109 times (OR=1.109, 95%CI, 1.458- 2.688) higher of being free from anxiety among pts with stages I, II and III compared to stage IV, respectively.

Patients who have lived with the cancer for 0-25, 26-50 and 51-100 months were 9.544 (OR=9.544, 95%CI: .941-96.801), 7.888 (OR=7.888, 95%CI: 1.43-224.1) and 3.168 (OR=3.168, 95%CI: 1.226-44.478) more likely to have no anxiety compared to those who lived for more than 100 months, respectively.

Table 6: Anxiety and associated factors among patients attending Tkur Anbessa Specialized Hospital, oncology ward, Addis Ababa, Ethiopia, 2017.

Characteristics		P value	COR(95% CI)	P value	AOR(95% CI)
Sex	male	.046*	.57(1.33, .99)	.329	1.49(1.67, 3.3)
	female			.	.
Length of stay in months	0-3	.001*	3.99 (2.04, 7.82)	.023**	2.8(1.15, 6.85)
	4-6	.004*	2.96 (1.42, 6.20)	.046	2.261(.86, 5.9)
	7-10				
Cancer or treatment Related pain	no	.001*	13.36 (5.46, 32.74)	.001	11.5(3.99,33.3)
	yes			.	.
Cancer type	lung cancer	.003*	.16 (1.05, 1.54)	.416	.519(.11, 2.52)
	Other cancers	.029*	.27 (1.08, 1.88)	.334	.46(.09, 2.24)
	Liver cancer	.087	.46 (.19, 1.12)	.725	.8(.24, 2.72)
	Colorectal cancer	.027*	.29 (1.10, 1.87)	.102	.26(.05, 1.31)
	Cervical cancer	.005*	.19 (1.06, 1.60)	.113	.3(.07, 1.33)
	Osteogenic cancer	.318	.45 (.09, 2.17)	.736	.71(.1, 5.22)
	Breast cancer	.103	.32 (.08, 1.26)	.511	.56(.1, 3.16)
	Esophageal cancer	.107	.358 (.10, 1.25)	.256	.39(.08, 1.99)
	Gastric cancer	.837	.87 (.24,3.21)	.351	2.22(.42,11.8)
	Uterine cancer			.	.
Stage of the disease	stage I	.001*	5.05 (2.05, 12.4)	.009**	5.22(1.5,17.9)
	Stage II	.018*	2.58 (1.17, 5.67)	.044**	1.51(1.53, 4.34)
	Stage III			.049**	1.11(1.46, 2.69)
	Stage IV	.021*	1.14 (.56, 2.29)	.	.
Age	15-24	.177	2.2 (.7, 6.91)	.937	1.07(.22, 5.18)
	25-64	.204	1.81 (.73, 4.49)	.738	1.23(.36, 4.21)
	>65			.	.
Duration since They know Their diagnosis	0-25 months	.002*	24.3 (3.1, 190)	.046**	9.54(.94,96.80)
	26-50 months	.002*	34.7 (3.69, 325.6)	.025**	7.89(1.4,224)
	51-100 months	.031*	13 (1.3, 133.3)	.039**	3.17(.23,44.5)
	>101 months			.	.

6. Discussion

The World Health Organization statistics indicated that ~2 million people suffer from pain everyday worldwide. Pain is one of the most common symptoms in patients with malignant tumor, substantially affecting patients' quality of life.

Around 220 participants were involved in this study. The respondents were required to report their pain and majority 72.7% (95%CI: 66.8 to 78.6). Of them reported that they have cancer or treatment related pain. This showed that study finding is comparable with a study conducted in India that shows of 126 patients included in the study 75.40% had pain and lower than result of the study conducted in Saudi Arabia, A total of 124 patients were interviewed, the majority of patients 85.5% reported pain (18). This difference and similarity might be due to the similarity and difference in life style, income and socio-cultural aspect of the countries.

A study conducted in Taiwan enrolled 2075 patients. 1051(50%) patients reported pain within the previous week which indicates that result of odds of this finding is 1.5 folds higher (72.7% vs 50%). Other study was conducted in Taiwan and of 480 cancer patients from 15 hospitals; pain was reported by 257 patients (54%). This shows almost similar with the previous study and lower than this finding (72.7% vs 54%). (15) This may be due to the difference in sample size, age and cancer types of the study population.

Other similar study conducted in UK used to assess the prevalence of pain at a tertiary cancer referral center, on the adequacy of pain control and for risk factors leading to higher prevalence and severity of pain. 149 patients were surveyed. 53% of patients had pain which demonstrates it is approximately one third lower than this finding. Almost the same result was found by a pan-European survey of prevalence, treatment and patient attitudes about cancer related pain found that pain severity was quite variable within different kinds of cancers and different countries. Of 5084 patients, 56% suffered moderate-to-severe pain at least monthly which shows lower magnitude. (11) This disparities might be due to the use of different pain assessment scales and in UK pain was of primary concern of the health professionals. The study done by the pan European survey again showed that pain differs among different cancer types, therefore, this is good clue that participants of these studies report different pain proportions.

This finding also shows that, of those who have pain, 60(37.5%) were experiencing severe pain and 43(26.9%) and 25(15.6%) were experiencing very sever and moderate pain in the last four weeks,

respectively and majority 137 (62.3%) of them reported that the cause of their pain is the lesion of the cancer. From the 160 subjects who have pain, 54(24.5%) did not use prescribed or un-prescribed medication to relieve their pain. A study that involves 601 cancer patients was conducted in France. 57% of patients reported pain due to their disease and of those with pain, 69% rated their worst pain at a level that impaired their ability to function. 30% were reported as receiving no drugs for their pain. Which indicates, report of pain severity is slightly higher in this study (64.4% vs 69%) and with regard to believe of the participants on the cause of their pain was the cancer lesion was a little bite lower in this finding (62.3% vs 57%). On the other hand slightly higher proportion of patients did not take anti-pain (24.4% vs 30%). (12) According to the study conducted in India, of 126 patients included in the study 62.70%, moderate-severe pain that is 1.3 times lower than this result (80% vs 62.7%). (16) Pain report depends on the subjects, so difference in pain perception of the participants might be the factor.

Other study was conducted in Taiwan and of 480 cancer patients from 15 hospitals, severe pain was reported by 35% of patients. Only 149 of the patients who reported pain were receiving analgesia still demonstrating almost 2 fold lower and somewhat better in anti-pain intake than this finding(64.4% vs 35%) and (24.5% vs 31%) respectively. (23) This difference might be due to fear of side effect of the medication.

A study that involves 505 patients was conducted in Boston, 67.3% were pain free, 17.8% experienced mild pain, 9.5% experienced moderate pain and 5.4% experienced severe pain, but this study shows only 27.3% of the pts were pain free demonstrating approximately 2.5 times lower (27.3% vs 67.3%). Severity of pain again shows huge difference, 64.4% of these study participants suffered severe to very severe pain which is around seven folds higher (64.4% vs 19.5%). (14) The participants in Boston were using CAM, therefore that is pretty good indicator that they report lower proportion of pain than this study participants.

Colorectal cancer 49(22.3%) is the most prevalent cancer type followed by lung cancer 29(23.2%). Which is close enough with a study conducted in Taiwan enrolled 2075 patients. Breast cancer (BC) and gastrointestinal (GI) cancer (including colorectal) were the most common cancers, followed by HN cancer.

According to the study conducted in china lung cancer (47%) was the most prevalent cancer type. Among them, moderate 72.4% and severe pain 27.6% was reported in 73.7% of the cases at stage IV.

This agrees with the finding of this study as the cancer become metastasized, the prevalence of cancer pain increases, 58.6% of stage III-IV report sever pain and also lung cancer is the second most prevalent cancer here, but incomparable with the study conducted in Saudi Arabia that included 124 participants, The most common cancers were breast 27.4% and head and neck (15.3%). (18)

A study that involved 505 patients conducted in Boston showed that Patients with head and neck, gastrointestinal and thoracic malignancies were more likely to experience severe pain compared with patients with other types of cancer 52.6%, 33.9% and 30.5%, respectively. This somehow agrees with my study finding showing colorectal and lung cancer had a significant association with pain ((OR=1.076, 95%CI: .015- .393) and (OR=1.34, 95%CI, .002- .463)), respectively (14).

The study conducted in Boston also showed that age, sex and race (Patients who were nonwhite (33% v 25%) or who did not speak English as their primary language (37% v 26%) were also more likely to be experiencing pain at the index ambulatory visit. Pain scores differed across disease groups. (14) But my study finding demonstrated that none of socio-demographic characteristics were determinant factors of pain. However, it agrees with the part that pain differed across different cancer types. As shown in the result of this study, anxiety, length of stay, duration, cancer types and stage of the disease were important determinants of cancer pain.

According to the study conducted in New York, USA, The prevalence of clinical anxiety as determined via the HADS (HADS ≥ 8) was 23%. (26) The result of this finding showed that 38.6% (95% CI: 32.7-45.5) of the total study subjects have anxiety, whereas 91(41.4%) and 44(20%) are free from anxiety and borderline cases respectively which shows it is higher. (19)

Similar study was conducted in New York to assess Anxiety in Terminally Ill Cancer Patients. Moderately elevated anxiety symptoms were found in 18.6% of participants. These showed it is more than two fold lower than this finding (38.6% vs 18.6%), other study conducted in Malesia showed that there is still huge proportion of prevalence of anxiety, however its much lower than this finding's result 25.4% (95%CI: 19.2 – 31.6). (28)

According to the study conducted in china, the prevalence of anxiety was 65.6% in cervical cancer patients. The anxiety score was significantly higher in patients at the period of 4–6 months after diagnose and at cancer stage II. This is pretty much higher than the present finding. However the determinant factors were comparable with my finding. Participants whose waiting time was 0-3 and 4-6

months were 3.997 folds (OR=3.997, 95% CI, 2.042-7.824) and 2.964 times (OR=2.824, 95% CI, 1.416-6.203) more likely to be free from anxiety than the patients whose waiting time is 6-10 months. On the other hand anxiety increases with an increase in stage of the disease.

This finding also showed that length of stay, pain, stage of the disease and duration remained significantly associated with anxiety which is incomparable with a study done in Iran in which age was important determinant factor. But, agrees with a study done in Massachusetts General Hospital Cancer Center, Boston, Controlling for socio-demographic variables, long-term cancer survivors were more likely to have an anxiety disorder (OR: 1.49, 95% CI: 1.04-2.13). (22)

There are different conditions that could lead cancer pts to be anxious: co-morbidity, family related issues, job loss, duration since they knew their disease, length of stay to begin treatment, availability of anxiety management protocols, care givers and expectation of prognosis of the disease etc. therefore, disparities in those factors could be the reason for reporting different anxiety proportion among our study and studies conducted in different countries.

7. Strength and limitations of the study

Strengths;

- Many different variables considered as associated factors of pain and anxiety were assessed and analyzed to characterize their relative contribution for pain and anxiety.
- Standard and valid questionnaires used in other studies was adopted and adapted for this study.

Limitations;

- The respondent might not provide accurate information
- Data collectors bias might be there during data collection
- Recall bias was likely as the respondents might not remember the medication they take, length, duration etc. which leads to misclassification.
- The number of the study population might affect the degree of association existed b/n the outcome variable and associated factors.
- Since the sampling method was convenience, Possible selection bias could have occurred in selecting participants.

8. Conclusion and recommendation

Conclusion;

Based on the findings of the study, the principal investigator made the following major conclusions.

- ♣ The investigation revealed that approximately Three fourth of cancer patients suffered from pain.
- ♣ Anxiety was common among cancer pts.
- ♣ Pain and anxiety was significantly associated.
- ♣ Length of stay between diagnosis and the beginning of treatment and duration since they know their DX were determinant factors of pain and anxiety.
- ♣ Cancer type and stage of the disease also were significantly associated with pain and anxiety.

Recommendations;

Based on the findings, the following recommendations are forwarded to the concerned bodies.

- ✓ It would be better if nurses of oncology ward consider pain and anxiety as priority problems to be managed accordingly.
- ✓ Consideration of logistic and human resource by administrative bodies of TASH, especially in oncology ward could be important so that length of stay to begin treatment can be minimized.
- ✓ Tikur Anbessa Specialized Hospital should use its potential to influence policy makers to put managements of cancer pain and anxiety in consideration while making decisions and formulating different health policies.
- ✓ Addis Ababa University should encourage researches in this area as it is one of the least investigated area; and encourage and follow up the application of the findings of the studies. Therefore, Researchers should view cancer pain and anxiety and factors attributed to it, as an area requiring further investigation.

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Appendixes

Annex I

Questionnaire English version

Addis Ababa University College of allied health sciences department of nursing and midwifery
Questionnaire prepared to assess the prevalence of cancer pain and anxiety and associated factors among patients admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2017. To the data collector facilitators: Please inform the respondents the aim of the study as described below!

Dear respondents:

This questionnaire is only for research purpose. I assure you that confidentiality and anonymity will be fully maintained. To strengthen this you are not expected to write anything such as name, ID, address... that may lead to your identification.

Your participation is purely voluntary, and you can withdraw at any time after you get involved in the study without compromising your right. However, I hope that you will participate in this study since your responses are quite important. If you are willing to take part in the study, you are kindly requested to respond to all questions honestly!

Now do you agree to participate in the study? Yes _____ No _____.

Thank you very much for your co-operation!

Data collector facilitators name _____ signature _____

Date _____ month _____ year _____

Supervisor name _____ signature _____

Date _____ month _____ year _____

Please indicate your response by circling your choice or by writing the appropriate information on the space provided!

1. Socio-demographic characteristics	
1.1 Age:	_____years old
1.2. Sex:	A. Female B. Male
1.3. Ethnicity:	1. Oromo 3 Tigray 2. Amhara 4. Gurage 5. Others (specify) _____
1.4. Religion:	A. Orthodox C. Protestant B. Muslim D. Catholic E. Others (specify) _____
1.5. Marital status:	A. Single C Widowed B. Married D. Divorced
1.6. Educational status (Circle only the highest grade or degree completed):	A. 0-4 D. Diploma B. 5-8 E. BSc C. 9-12 F. MSc G. Others (specify) _____
1.7. What is/was your occupation? for female pt	A. Housewife E. Merchant B. Daily laborer F. Farmer C. Government employee G. Student D. Others (specify) _____
1.8. What is/was your occupation? for male pt	A. Daily laborer B. Government employee C. Farmer D. Merchant E. Student F. Others (specify) _____
1.9. Average income	_____birr/month

2. Participants' experience of cancer related pain

The following questions ask about any physical pain you may experience from your cancer within the last 4 weeks. This includes pain from surgery for cancer, pain from cancer treatments (chemotherapy or radiation), or pain from the disease itself. Please remember to answer these questions about cancer related pain only.

2.1. Medical diagnosis (cancer type) _____ stage _____

2.2. How long has it been since you first know your diagnosis? _____ Months

2.3. Length of stay to begin treatment _____ months

S.N	Question	Response	Remarks
2.3.	Do you have any pain from your cancer and /or its treatment, even if it was mild?	0. No 1. Yes	
2.4	If yes, what is the source of your pain?	1. Lesion in the cancer cite 2. The surgical procedure 3. Drug side effect 4. Other; specify_____	
2.5	During the past 4 weeks, how would you rate your severity of pain?	1. Very Severe 2. Severe 3. Moderate 4. Mild	
2.6	Have you taken medicine (prescribed or over the counter) to relieve your pain?	0. No 1. Yes	
2.7	If yes, how often do you take the medicine?	1. less than once a week 2. once a week 3. twice a week 4. 3 or more times a week	

2.8.	How much did pain interfere with your normal work (both outside and in the home)	0. Not at all 1. A little 2. Quite a bit 3. Very much	
------	--	--	--

Hospital Anxiety Scale (HAS)

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 you replies: your immediate is best.

3.1. I feel tense or 'wound up':

- 3 Most of the time
- 2 A lot of the time
- 1 From time to time, occasionally
- 0 Not at all

3.2. I get a sort of frightened feeling like 'butterflies' in the stomach:

- 0 Not at all
- 1 Occasionally
- 2 Quite Often
- 3 Very Often

3.3. I get a sort of frightened feeling as if something awful is about to happen:

- 3 Very definitely and quite badly
- 2 Yes, but not too badly
- 1 A little, but it doesn't worry me
- 0 Not at all

3.4. I feel restless as I have to be on the move:

- 3 Very much indeed
- 2 Quite a lot
- 1 Not very much
- 0 Not at all

3.5. Worrying thoughts go through my mind:

- 3 A great deal of the time
- 2 A lot of the time

- 1 From time to time, but not too often
- 0 Only occasionally

3.6. I get sudden feelings of panic:

- 3 Very often indeed
- 2 Quite often
- 1 Not very often
- 0 Not at all

3.7. I can sit at ease and feel relaxed:

- 0 Definitely
- 1 Usually
- 2 Not Often
- 3 Not at all

መጠይቅ

በአዲስ አበባ ዩኒቨርሲቲ ጤና ሳይንስ ኮሌጅ የነርቪንግ እና ሚድዋይሬሪ ትምርት ክፍል

ይህ መጠይቅ የተዘጋጀው በጥቁር አንበሳ ልዩ እና የማስተማር ሆስፒታል በካንሰር ህመምተኞች ላይ የህመም እና የጭንቀት ስርጭት እና ተዛማጅ ሁኔታዎችን ለማጥናት ነው።

ለሰብሳቢው ወይም ለአስተባባሪዎች፡ እባክህ ከዚህ በታች የተገለጹትን የጥናቱ ዓላማዎች ለጥናቱ ተሳታፊዎች አስረዳ!

ውድ ተሳታፊዎች፡

የዚህ መጠይቅ ዓላማ ለምርምር ብቻ ነው። እኔ ላረጋግጥልዎት የምፈልገው፤ በዚህ መጠይቅ ላይ የሚሰጡት መረጃ ሚስጢራዊነት እና ማንነትን ሙሉ በሙሉ የተጠበቀ ይሆናል። እናም በዚህ መጠይቅ ላይ የእርስዎን ማንነት ሊያመራ የሚችል ስምዎት፣ መለያ ቁጥሮትን እና አድራሻዎትን አይጻፍም።

በዚህ ጥናት መሳተፍ የሚችሉት በፈቃደኝነት ብቻ ነው። በማንኛውም ስዓት የእርስዎን መብት የሚጋፋ በመሰሎት ገዜ ማቆም ይችላሉ። ነገር ግን የእርስዎ ተሳትፎ በጣም አስፈላጊ ስለሆነ ይሳተፉ ብለን ተስፋ እናደርጋለን። በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ከሆኑ የምንጠይቅዎትን መረጃ ሙሉ ለሙሉ በሐቀኝነት ይመልሱልን ዘንድ እንጠይቅዎታለን።

አሁን ጥናት ውስጥ ለመሳተፍ ይስማማሉ? አዎ _____ አይደለም _____

በጣም እናመሰግናለን!

መረጃ ሰብሳቢ (አስተባባሪ) ስም _____ ፊርማ _____
 ቀን _____ ወር _____ ዓ.ም _____

የተቆጣጣሪ ስም----- ፊርማ-----
 ቀን _____ ወር _____ ዓ.ም _____

እባክዎትን የእርስዎን ምርጫ በማክበብ ወይም በቀረበው ቦታ ላይ ተገቢው መረጃ በመጻፍ ምላሽዎን ይጻፉልን !

1. ማህበራዊና-ሕዝብ አወቃቀር ባህርያት	
1.1 ዕድሜ	_____ ዓመት
1.2.ጾታ	a. ወንድ b. ሴት
1.3. ብሔርዎ ምንድነው?	1. አሮሞ 3 ትግራይ 2. አማራ 4. ጉራጌ 5. ሌላ (ይገለጥ) _____
1.3. ሃይማኖት:	a. ኦርቶዶክስ c. ፕሮተስታንት b. ሙስሊም d. ካቶሊክ e. ሌላ (ይገለፅ) _____
1.4. የጋብቻ ሁኔታ:	a. ያላገባ/ች b. ያገባ/ች c. የፈታ/ች d. የሞተችበት/ባት
1.5. የትምህርት ሁኔታ(ከፍተኛ ያጠናቀቁት ክፍል ወይም ኮለጅ በቻ ያከብቡ):	A. 0-4 B. 5-8 C. 9-12 D. ዲፕሎማ E. ድግሪ F. ማስተር G. ሌላ (ይገለፅ) _____
1.6. የስራ ሁኔታ(ለሴት)	A. የቤት እመቤት B. የቀን ሰራኛ C. የመንግስት ሰራተኛ D. ገበሬ E. ነጋዴ F. ተማሪ G. ሌላ (ይገለፅ) _____

1.7. የሥራ ሁኔታ(ለወንድ)	A. የቀን ሰራኛ B. የመንግስት ሰራተኛ C. ገበሬ D. ነጋዴ E. ተማሪ F. ሌላ (ይገለፅ) _____
1.8. `በወር በአማካይ ገቢ	_____ብር/ወር

2. ከካንሰር ጋር የተያያዘ ህመም

የሚከተሉት ጥያቄዎች ባለፉት 4 ሳምንታት ውስጥ ከካንሰር ጋር ተያይዞ ሊያጋጥሟቸው ከሚችሉ አካላዊ ሆነ አእምሮዊ ህመሞች መካከል አጠይቅዎታለሁ። ይህም ህመሙን ጨምሮ የካንሰር ሕክምናዎች (የኬሞቴራፒ ወይም የጨረር ሕክምና), በካንሰር ምክንያት ቀዶ ጥገና, ህመሞችን ያጠቃልላል።

- 2.1. የሕክምና ምርመራ (ካንሰር አይነት) _____ ደረጃ _____
- 2.2. ህመምዎትን ካወቁ ምን ያህል ጊዜ ሆነዎት? _____ ወራት
- 2.3. ሕመምዎትን ካወቁ በምን ያህል ጊዜ መዳኒት ጀመሩ? _____ ወራት

ተ.ቁ	ጥያቄ	መልስ	አስተያየት
2.4	በካንሰሩ ወይም በሕክምናው የመጣ ህመም አልዎት?	0. የለም 1. አዎ	
2.5	አዎ ከሆነ, እባክዎ የህመሙ ምንጭ ምንድን ነው?	1. በካንሰሩ ቁስል ምክንያት 2. በቀዶ ህክምና የአሰራር 3. የመዳኒት የጎንዮ ጉዳት 4. ሌሎች;ይጥቀሱ _____	
2.6	በባለፉት 4 ሳምንታት ውስጥ, የህመምዎን ደረጃ እንዴት ይገልፁታል?	1. በጣም ከባድ ሕመም 2. ከባድ ሕመም 3. መካከለኛ 4. ቀላል	
2.7	የእርስዎን ህመም ለማስታገስ በሕክምና የታዘዘ ሆነ ያልታዘዘ መድኅኒት ወስደው ያውቃሉ?	0. አዎ 1. አይደለም	

2.8	አዎ ከሆነ፤ ለምን ያህል ጊዜ መድሃኒት ወሰዱ?	2. በሳምንት ከአንድ ግዜ ያነሰ 3. በሳምንት አንዴ 4. በሳምንት ሁለቴ 5. በሳምንት 3 እና ከዛ በላይ	
2.9	ህመሙ በመደበኛ ሥራህ ላይ ምን ያህል ጣልቃ ይገባል?	2. በፍጹም አይደለም 3. ትንሽ ትንሽ 4. የተወሰነ 5. በጣም ብዙ	

3. የሆስፒታል ጭንቀትን መመዘኛ

3.1. የዉጥረት ስሜት ይሰማኛል።

3, በጣም ብዙ ጊዜ

2, ብዙ ጊዜ

1, አልፎ አልፎ

0, በጭራሽ

3.2. ሆዴ ውስጥ 'ቢራቢሮዎች' ያሉ ያህል እስኪመስለኝ ድረስ ፍርሃት ፍርሃት ይሰማኛል።

0 በጭራሽ

1 አልፎ አልፎ

2 ብዙ ጊዜ

3 በጣም ብዙ ጊዜ

3.3. አስፈሪ ነገር ይገጥመኛል ብዬ ፍርሃት እየተሰማኝ ነው።

3 በጣም በእርግጠኝነት እና በጣም ክፉኛ

2 አዎ, ነገር ግን በጣም ያልከፋ

1 ትንሽ, ነገር ግን ብዙም አያስጨንቀኝም

0 በጭራሽ

3.4. በጉዞ ላይ እንዳለው አስኪሰማኝ ድረስ እረፍት ነስቶኛል።

3 እጅግ በጣም ብዙ

2 በጣም ብዙ

1 በትንሽ

0 በጭራሽ

3.5. አሳሳቢ ሐሳቦች ወደ አእምሮዬ እየመጡ ነው።

- 3 በጣም ብዙ ጊዜ
- 2 ብዙ ጊዜ
- 1 ከጊዜ ወደ ጊዜ, ነገር ግን በጣም ያልተደጋገመ
- 0 አልፎ አልፎ ብቻ

3.6. ድንገተኛ የሆነ ሐይለኛ ጭንቀት እየተሰማኝ ነው።

- 3 እጅግ በጣም ብዙ ጊዜ
- 2 በጣም ብዙ ጊዜ
- 1 አልፎ አልፎ
- 0 በጭራሽ

3.7. ዘና ብዩ መቀመጥ እችላለሁ።

- 0 በርግጠኝነት
- 1 ብዙ ጊዜ
- 2 አልፎ አልፎ
- 3 በጭራሽ