



Research Article

Prevalence of cancer pain, anxiety and associated factors among patients admitted to oncology ward, Tikur Anbessa Specialized Hospital, Ethiopia, 2019

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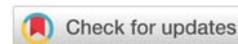
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Abstract

Recent study reveals that 2 million people suffer from pain everyday worldwide and cancer pain is one major neglected public health problem especially in Ethiopia.

Objective: this study aimed to assess the prevalence of cancer pain and anxiety and associated factors among patients admitted to oncology ward, Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia.

Methods: An institution based cross-sectional study design was conducted at Tikur Anbessa Specialized Hospital from April 01 to May 7, 2019. Data was collected from the study participants using a semi-structured questionnaire and analyzed by using SPSS software version 23. Binary logistic and multi-variable logistic regression and odds ratio applied to determine the association of variables and *P*-value <0.05 was considered for statistical significance.

Result: The finding of the present study revealed that from a total of 220 respondents involved in this study and about 80% of them had moderate to very severe pain and 62.3% due to cancer lesion. Moreover, only 48.2% used pain management. From the type of cancer; colorectal cancer was the most prevalent cancer type that accounts 49(22.3%) followed by lung cancer 29(13.2%) and about 70(31.8%) of participants were in clinical stage IV. About 54.1% of the respondents waited for more than four months before commencing medical treatment due to overflow of patients. Pain and anxiety were significantly associated.

Conclusion and Recommendations: The finding revealed that three fourth of cancer patients suffered from pain and anxiety. It would be better if Tikur Anbessa Specialized Hospital management bodies, researchers and nurses of oncology ward gives more emphasis on pain and anxiety management as priority problems to be managed accordingly.

Abbreviations

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; ICU: Intensive Care Unit; IRB: Institutional Review Board; NCR:

National Cancer Registry; NCS-R: National Co morbidity Survey Replication; NHS: National Health Service; OR: Odds Ratio; QOL: Quality Of Life; TASH: Tikur Anbessa Specialized Hospital; VAS: Visual Analogue Scale; WHO: World Health Organization.

Introduction

Background

Pain 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 [1]. 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 [2,3]. Pain can reduce strength, vitality, activity tolerance and mobility. 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 [4]. 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 [5,6].

Statement of the problem

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 [7,8]. 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 [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 [12]. The Federal Ministry of Health (FMOH), estimated that there could be more than 150,000 cancer cases in Ethiopia

each year though available data was limited. Two thousand thirteen adult cancer patients visited Tikur Anbessa 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 [14,15].

Significance 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 Quality of Life (QOL), is imperative. In Ethiopia [7], 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, the 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.

Conceptual framework

The conceptual framework is adapted from researches



done on the Prevalence of Cancer Pain, anxiety and associated factors among patients admitted to oncology ward. As shown in the conceptual framework in Figure 1 below; prevalence of cancer pain, anxiety and associated factors.

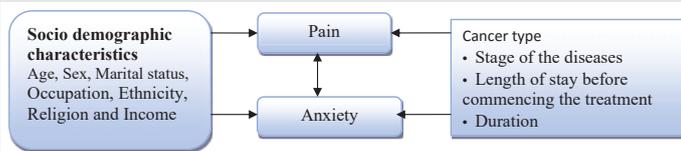


Figure 1: Conceptual framework used to show the relationship between dependent and independent variables [17, 18]

Objectives of the study

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.

Specific objectives

- To explore the prevalence of cancer pain among patients admitted to oncology ward.
- Assess the prevalence of anxiety among patients admitted to oncology ward.
- To identify factors associated with cancer pain and anxiety among patients admitted to oncology ward.

Methods

Study area, design and period

Study area: The study was conducted at Tikur Anbessa Specialized Hospital, Addis ababa, Ethiopia where the Africa Union is head quartered. 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. The oncology clinic of Tikur Anbessa Hospital is the major referral center that provides oncology care service in the country [19].

Study design and period: A cross-sectional study design was conducted from April 01 to May 7, 2019.

Sample size and Sampling technique

The sample size was determined using simple population proportion formula with the following assumptions. Sample population proportion formula was used to determine sample size. Margin of error= 5%, 95% confidence level (1.96) and Prevalence rate= 50%.

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

Since the number of source population is <10,000, the population correction formula was employed.

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

$$Nf = 208$$

$$Nf = \frac{n}{1 + n/N} = \frac{384}{1 + 384/450} = 229$$

After which Nf become 208 and considering 10% non-response rate of this, lastly the final sample size is 229 and the study subject selected by using convenient sampling technique.

Study variables

Independent variables: Socio-demographic characteristics: Age, Sex, Religion, Ethnicity, Marital status, Occupation and Income
Cancer related problems: Cancer type, Stage of the diseases, patient waiting time to get medical care, Duration and Frequency of anti-pain.

Dependent variables: Pain and anxiety.

Data collection tools and procedures

Data collection tools: Data was collected by using semi structured questionnaire. Pain intensity was assessed using four-point verbal rating and Anxiety was assessed with Hospital Anxiety Scale (HAS). If the participants had pain, they were again required to rate their pain from mild to very severe (mild, moderate, severe and very severe 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 [20]. Both have been shown to be reliable, valid and appropriate for clinical use.

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 was provided on the data collection process before the initiation of the actual data collection. Besides, one senior nurse was recruited as supervisor.

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 to 7 it is considered as Normal.



- **Borderline abnormal (borderline case):** If the clients' perception for rating of symptom distress/bothersome is 8 to 10 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) [21].

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. Based on the finding, amendments on the instrument, such as on unclear questions, ambiguous words were made accordingly. 4 data collectors (registered nurses) was recruited based on their experience in research. Training was given for data collectors and supervisors for one and half day on the objective of the study. Data collectors were instructed to check the completeness of the instrument just after its completion. The collected data was coded, cleaned and explored before analysis to check missing items and completeness of the collected data.

Data analysis procedures

The data was analyzed using SPSS version 23. It was processed by carrying out simple descriptive statistics (frequencies, means, and standard deviations) and 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 .

Ethical consideration

Ethical approval was sought and granted by the Research and Ethical Review Board at the respective department, School of Nursing and midwifery, College of Health Sciences, Addis Ababa University. Permission to conduct the study was obtained from FMOH with official letter and submitted to Tikur Anbessa Specialized Hospital oncology ward. All study participants were adequately informed about the purpose, method and anticipated benefit of the study by the data collectors. Written (informed) consent was obtained from each participant and confidentiality and anonymity of the study subjects was maintained.

Results

From a total of 229 study participants 220 were responded to the questionnaire with response rate 96%.

Socio-demographic characteristics

From a total of 220 respondents about 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 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. Only 3(1.4%) of the study participants had MSc degree holder while 59(26.8%) were illiterate. With respect to their job, 59(26.8%) of the total study participants were government employees. In regard to the participant's income, 136(61.8%) of the study participants had monthly income less than 1000ETBirr.

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%) were liver cancer, cervical cancer, osteogenic cancer, esophageal cancer, gastric uterine cancer and others (skin, eye, oropharyngeal, neck etc.), respectively. However, only 9(4.1%) of the participants had breast cancer as depicted in Table 1, 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.

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 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 for 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 commenced their treatment 6 months and above after they know as they have cancer as shown in Table 2. The average waiting time between diagnosis and beginning of treatment was 4.4 months with the standard deviation of 2.37 months.

Table 1: The proportion of cancer patients by type and stage of cancer among patients attending Tikur Anbessa Specialized Hospital oncology ward, Addis Ababa Ethiopia, 2019 (n=220).

Cancer types	Frequency	Percent
Lung cancer	29	13.2
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
Others	14	6.4
Total	220	100.0
Stage of the cancer	Frequency	Percent
Stage I	43	19.5
Stage II	48	21.8
Stage III	59	26.8
Stage IV	70	31.8
Total	220	100.0



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 severe, moderate and mild pain in the last four weeks respectively. 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 3(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

Cancer pain and associated factors

Binary logistic regression illustrated that anxiety; patient waiting time (length of stay), duration; cancer types and stage of the disease were significantly associated with cancer pain indicated in Table 3 and those who were free from anxiety had 92.5% (OR =0.075, 95% CI: 1.031- 1.183) lower odds of pain compared to these 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. 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 1.560 times (OR= 1.561, 95% CI, 1.006-2.500) 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 were 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 regression 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 1.720 folds (OR= 1.720, 95% CI, 1.294- 2.282). Colorectal

Table 2: Duration and length of stay of patients attending Tikur Anbessa Specialized Hospital oncology ward, Addis Ababa Ethiopia, 2019. (n=220).

Duration/Length	Category	Frequency	Percent	Mean	Standard deviation
Duration since they know their Diagnosis	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	0.9		
Length of stay before starting treatment	0-3 months	101	45.9	4.4 Months	2.363 Months
	4-6 months	68	30.9		
	7-10 months	51	23.2		

Table 3: Cancer pain and associated factors among patients attending Tikur Anbessa Specialized Hospital oncology ward, Addis Ababa, Ethiopia, 2019. (n=220).

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 Yes	.001*	.08(1.0, 1.18)	.001**	.07(1.02, 1.2)
Sex	Male Female	.124	.62(.34, 1.14)	.072	.31(.09, 1.11)
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				
	Other cancers				
	Liver cancer				
	Colorectal cancer	.011*	1.56(1.01,2.5)	.011**	1.3(1.002, 1.46)
	Cervical cancer	.308	2.1(.51, 8.67)	.469	.51(.08, 3.2)
	Osteogenic cancer	.509	.65(.18,2.36)	.364	.45(.08, 2.56)
	Breast cancer	.002*	1.22(1.06,1.79)	.002**	1.08(1.02, 1.39)
	Esophageal cancer	.397	1.7(.49, 5.8)	.881	.89(.19, 4.21)
	Gastric cancer	.787	.84(.23,3.01)	.233	.36(.07, 1.95)
	Uterine cancer	.778	.79(.15,4.2)	.704	.66(.08, 5.68)
	Other cancer	.981	.98(.23,4.25)	.474	.5(.07, 3.35)
Stage of Cancer	Stage I	.009*	.22(.04,1.3)	.390	.38(.04, 3.45)
	Stage II	.001*	.01 (1.002, 1.1)	.001**	.01(1.00,1.11)
	Stage III	.001*	.01(1.002, 1.1)	.007**	.03(1.002, 1.37)
	Stage IV	.009*	.06(1.01, 1.51)	.020**	.04(1.002, 1.59)

** Significant at p value less than or equal to 0.05.

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.

Magnitude of anxiety

The magnitude of anxiety as shown in Figure 2, anxious (cases) was 38.6% (95% CI: 32.7-45.5). Whereas 41.4% and 20% were free from anxiety and borderline cases, respectively.

Anxiety and associated factors

In binary logistic regression analysis; sex, length of stay, duration of cancer, cancer type and stage of the disease were important determinant factors of anxiety. As shown in Table 4, 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 shown patients who had 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.

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 affects their quality of life. Around 220 participants were involved in this study and reported as they had pain were 72.7% (95%CI: 66.8 to 78.6) and another study conducted in India that shows that 75.40% had pain and lower than result of the study conducted in Saudi Arabia were 85.5% reported as they had pain [22]. This difference indicates might due to their life style, income and socio-cultural aspect of the countries.

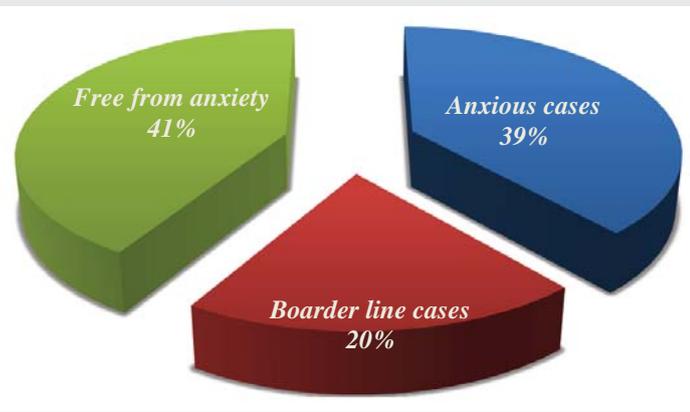


Figure 2: Prevalence of anxiety among patients attending Tikur Anbessa Specialized Hospital, oncology ward, Addis Ababa Ethiopia, 2019 (n=220).

Table 4: Anxiety and associated factors among patients attending Tikur Anbessa Specialized Hospital, oncology ward, Addis Ababa, Ethiopia, 2019. (n=220).

Variable	Categories	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 months	.001*	3.99(2.04, 7.82)	0.023**	2.8(1.15, 6.85)
	4-6 months	.004*	2.96(1.42, 6.20)	.046	2.26(1.86, 5.9)
	7-10 months				
Cancer or treatment related pain	Yes	.001*	13.36(5.46, 32.74)	.001	11.5(3.99,33.3)
	No				
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 Cancer	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	.021*	1.14(.56, 2.29)	.049**	1.11(1.46, 2.69)
	Stage IV				
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				

** Significant at p value less than or equal to 0.05.



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 168 (35%) of patients. Only 149 (31%) 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 free from pain, 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 patients 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.

Cancer distribution by its type shown; Colorectal cancer 49(22.3%) is the most prevalent cancer type followed by lung cancer 29(23.2%). 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 and statistically significance association (p value <0.05), 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%) [22].

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. Similar finding with the present studies reveals that 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 [14,24]. 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 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 4-6months 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) [24,25].

There are different conditions that could lead cancer patients 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.

Strength and limitations of the study

Strengths

Standard and valid questionnaires used in other studies was adopted and adapted towards the socio-cultural condition of the study population.

Pretest (pilot survey) conducted before the actual data collection and training was conducted for data collectors and supervisors.

Limitations

Since the sampling method was convenience, possible selection bias could have occurred in selecting participants.

Conclusion and recommendation

Conclusion

Based on the findings of the study, major conclusions are as follows

- The finding reveals that three fourth of cancer patients suffered from cancer pain.
- Anxiety was common among cancer patients
- Pain and anxiety were significantly associated.
- Length of stay between diagnosis and the beginning of treatment and duration since they know their diagnosis 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.

- FMOH, provide workshop for oncology staffs as a capacity building and Ethical considerations in related to cancer patient care. Because it requires more emphasis cancer patient care to reduce their suffering through consideration of pain and anxiety as priority problems to be managed accordingly.
- Hospital administrations; recommended to reduce patient waiting time to get healthcare services by increase the proportion of health care providers the standard of health care staff to patient ratio in order to improve the service quality.
- Hospital management bodies; there is a need for regular in-service education for oncology ward staffs as gap filling training and effective educational strategy and standard guideline for oncology unit on cancer pain management according to the recommendation of international standard.
- In addition to these, nurse administrators, hospital managers and policy maker can use the finding for allocating budget to be trained staffs in regard to cancer pain management results improving quality of patient care in the management of pain.
- Addis Ababa University; the current study mainly focused on the assessment of cancer patient's prevalence of pain and anxiety in related to associated factors by using closed ended questionnaire without observation of actual practices of health care service. Therefore, future study recommended mixed method for data collection (both interview and observational methods) for more valid findings.

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Authors' Contributions

The paper is the result of joint research, the contribution of every author is comparable to the others. All authors read and approved the final manuscript.

Data sharing statement

No additional data are available.

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Ethical approval and consent to participate

Ethical approval was obtained from the research and ethical review board of Addis Ababa University, College of health sciences, school of Nursing and midwifery, department of Oncology. Each study participants were informed about the purpose and procedure of the study and their right to refuse was respected and consent was obtained from all study participants before the interview. The respondents were also told that the information obtained from them be treated with complete confidentiality and do not cause any harm to them.

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