Scientific Research Publishing

Open Journal of Medical Psychology, 2023, 12, 173-191
https://www.scirp.org/journal/ojmp
ISSN Online: 2165-9389
ISSN Print: 2165-9370

Identify Psychological Distress among Cancer Patients: A Study at Kilimanjaro Christian Medical Center (KCMC) in Moshi Municipality, Kilimanjaro Tanzania

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How to cite this paper: Mbowe, G.L., Ambakisye, S. and Lubawa, D. (2023) Identify Psychological Distress among Cancer Patients: A Study at Kilimanjaro Christian Medical Center (KCMC) in Moshi Municipality, Kilimanjaro Tanzania. *Open Journal of Medical Psychology*, **12**, 173-191.
https://doi.org/10.4236/ojmp.2023.124011

Received: March 17, 2023
Accepted: October 6, 2023
Published: October 9, 2023

Abstract

Introduction: The major objective of this study was to identify the Psychological Distress among Cancer Patients at KCMC in Moshi Municipality, Kilimanjaro Tanzania. The specific objectives were to identify the psychological distress among cancer patients at KCMC, and to explore relationship between demographic characteristics of cancer patients and psychological distress. **Methodology:** The study used a sample of 175 respondents. The study was cross-sectional design, a quantitative approach. The data gathered for the study were analyzed using quantitative data analyzing software SPSS version 20 and were visually presented using descriptive statistics such as frequency distribution of tables, and figures. **Result:** The findings of the study showed that majority of the respondents (cancer patients) 105 (60.0%) were experiencing psychological distress among the cancer patients. The cancer patients who are divorced and widow them experience anxiety (p-value 0.01) significant. Those who were low in education were significantly affected with (p-value 0.03) anxiety and (p-value 0.01) depression. The variable in economic; the less satisfaction were significantly (p-value 0.01) were experience adjustment disorder. **Conclusion and Recommendation:** The study recommends that it is important to involve psychologists in the treatment team among the cancer patients to address psychological distresses they experience. Also Oncology Department should develop interest of doing research on psychological distress management because study showed 60% cancer patients suffer with psychological distress.

Keywords

Cancer, Psychological Distress

1. Introduction

Cancer is a major public health problem worldwide and the burden caused by cancer continues to increase as days go on [1]. The World Health Organization approximates the occurrence of cancer to increase exponentially by the year 2030, with the annual number of new cases rising from 14.1 million in 2012 to 21.6 million in 2030 and deaths due to cancer rising from 8.8 million worldwide in 2015 to more than 12 million in 2030 [2].

The Sharma R. *et al.*, (2020) in their study about "Mapping cancer in Africa: A Comprehension and comparable characterization of 34 cancer Types using estimates from GLOBOCAN 2020" comment that in Africa it is estimated 1.1 million new cases which is about 95% uncertainty interval (UIs) 1.0 to 1.5 million and 711,429 death occurred due to neoplasm in 2020 [3]. Furthermore in 2040, the burden of all neoplasm combined in forecasted to increase to 2.1 millions new cases and 1.4 million death in Africa [3]. There are various reasons why those cancer are commonly in Sub-Sahara Africa increase it include rate of obesity, high rate of HIV infection and genetics [4]. The most of prevalent cancers are breast, bladder and liver cancer in Northern Africa, the prostate, Lung and colorectal cancer in Southern Africa and esophageal and cervical cancer in Easter Africa have increased [5]. The United Nation's population, estimated that the population of Africa between 2010 and 2030 is expected to increase by 50% overall (from 1.03 billion to 1.52 billion) and by 90% for those aged 60 years (from 55 million to 105 million), and at this age cancer mostly occurs [6]. In 2008 Africa estimated to have 715,000 new cancer cases and 542,000 cancer deaths and in Sub-Saharan Africa, there were about 421,000 deaths of cancer patients [7].

According to WHO report in 2014, Tanzania had 7304 cases of Cervix Uteri, 2732 cases of breast cancer, 1880 cases of Kaposi's sarcoma, 805 cases of esophagus and 777 cases of colorectal which make 13,498 cases [2]. In addition, Tanzania conducted a study concerning the assessment of breast cancer focusing on early detection, diagnosis and treatment in Tanzania which predicted to increase up to 82% of new breast cancer by 2030. Breast cancer in Tanzania represents 14.4% of new cancers among women and the age-standardized breast cancer increase in Tanzania is 19.4/100,000 women and the age-standardized breast cancer mortality rate is 9.7/100,000 and it affects more to people with high economic income than low economic income [8].

The Psychological Distress due to Cancer

The diagnosis of cancer generates fear and confusion in the lives of patients and their families. In many cases, a cancer diagnosis creates a greater sense of anxiety than other illnesses that possess a poorer prognosis. Cancer disturbs all aspects of daily life including family, work, finances, and friendships. It creates anxiety, fear, anger, sadness and depression as patients struggle to define and resolve the series of decisions that confront them [9]. The psychological distress to cancer patients is defined as a multifactorial unpleasant emotional experience

psychologically such as cognitive, behavioral, emotional, and social, as well as spiritual. It interferes with the ability to cope effectively with cancer, its physical symptoms and its treatment [10].

People who face a life-threatening illness like cancer are likely to experience psychological distress, the negative emotions that hinder everyday activities to an individual [11]. The change of sense of the self and one's circumstances is common with psychological distress, and patients experience depression and anxiety as a consequence of the illness [12]. According to Srikanthan *et al.*, (2019) [13], the cancer patient's reports distress symptoms such as feeling tense and unable to relax, feeling nervous and shaky and experiences repetitive and frightening thoughts. The cancer patients experience subclinical anxiety symptoms also present with subclinical depression symptoms including experiencing suicidal ideation [13]. Other psychological symptoms are fear or worries, worry about family and the female patients reported more symptoms of anxiety and symptoms of depression compared to male. The emotional distress has been found as a central indicator of a patient's health, well-being and has connected it as the sixth vital sign. Anxiety and depression were the most common psychological problems in cancer patients. Cancer act as a negative stressors threatened lives and it applies serious impact on patients' physical and mental health. Research showed that upon diagnosis cancer patients suffered from serious mental health problems such as anxiety and depression [14] [15]. Psychological problems that are usually seen among cancer patients primarily are depressive disorder, adjustment disorder, posttraumatic stress disorder and other anxiety disorders, delirium and other cognitive disorders. The suicidal thoughts due to depression can be a result of lack of family and social support [16]. Anxiety associated with cancer amplifies feelings of pain, interfered with sleep habits, caused nausea and vomiting, and negatively effects on patient's quality of life [17]. Unless it is treated, serious anxiety affects the length of patients' life. Anxiety symptoms is common at the initial stage of cancer diagnosis, during treatment decisions, as well as with concerns about return of the disease or disease progression but rate of fully developed anxiety disorders is not significantly higher from the one in general population. The patients with advanced cancer have less fear of death but greater from uncontrollable pain, state of loneliness and dependence on others. The experienced of life threatening disease, as cancer, lead to development of posttraumatic stress disorder. Some of the risk factors for Posttraumatic stress disorder existence after cancer included the past experience of stress life events, history of psychological disorders, and high level of distress previous to cancer diagnosis, coping through avoidance, poor social support and worse physical functioning [18].

2. Literature Review

The psychological distress is often unrecognized and untreated by clinicians to patients with cancer [19]. Patients can have provided verbal and non-verbal in-

formation about their emotional state, however, many patients may not reveal emotional issues because they believed it was not a doctor's role to help with their emotional concerns, therefore patients may have normalized their feelings. Anxiety and depression mimicked physical symptoms of cancer or treatments and thus emotional distress may not be detected [20]. The study done in Nigeria about association between psychological distresses an unmet information needs among female cancer patients in two selected teaching hospitals in south-west found that generally the psychological distress to patients with cancer were (76%) seventy six percent [21]. This research was slightly same with the study done in Rwanda which indicated that psychological distress, focused into depression and anxiety were (depression) 67.7% and (anxiety) 52.1% among the cancer patients [22]. The study done by Holland & Aliici (2010), comment that between 35% and 40% of patients with cancer experience distress at some stage during their illness; but according to Zabora *et al.* (2001) and Gruneir *et al.* (2005) who did a research at Baltimore comment that the psychological illness, such as depression, anxiety, and adjustment disorders, were common in cancer patients, which range between 35% and 50% of patients experienced these psychological problems [9] [23] [24].

In June 2011 the *International Journal Psycho-Oncology* dedicated a monographic issue to psychological distress, a construct defined as a multifactorial unpleasant emotional experienced of a psychological (cognitive, behavioral, emotional), social, and/or spiritual nature that may be interfered with the ability to cope effectively with cancer, its physical symptoms and its treatment [10]. Patients suffered from unpleasant emotional affects effectiveness of recovered to cancer patients. Usually those who faced a life-threatening illness, like cancer, were likely to experience psychological distress, the negative emotions that hinder everyday activities [11]. It was possible to change the sense of the self and one's circumstances due to psychological distress, and usually patients commonly experienced depression and anxiety as a consequence of their illness [12]. The emotional distress found as a core indicator of a patient's health, well-being and connected it as the sixth vital sign. Anxiety and depression are the most common psychological problems in cancer patients [14]. The study done in Canada showed that the common psychological distress were depression and anxiety to cancer patients but the impact of psychological distress were increasingly associated with poor adherence to therapy, quality of life and cancer prognosis [13]. The diagnosis of cancer to most patients generates fear and confusion in the lives of patients and their families. In many cases, a cancer diagnosis created a greater sense of anxiety than other illnesses that possesses a poorer prognosis. Cancer disrupt all aspects of daily life include family, work, finances, and friendships. Most of the patients originate critical support from significant others in order to develop a buffer against multiple sources of stress and to facilitate problem-solving strategies in relation to the demands of their illness. Cancer create anxiety, fear, anger, sadness and depression as patients struggle to define and resolved the series of decisions that confront those symptoms [9]. Can-

cer acted as negative stressors threatened lives applying serious impact on patients' physical and mental health. Research showed that upon diagnosis cancer patients suffered from serious mental health problems such as anxiety and depression [15]. Psychological problems that usually was seen among oncology patients primarily depressive disorder, adjustment disorder, posttraumatic stress disorder and others anxiety disorders, delirium and other cognitive disorders. But also cancer patients suffered with other problems included suicidal thoughts, which results of lack of family and social support; personality disorders which causes problems in state of extreme stress [16]. Anxiety associated with cancer amplifies the feelings of pain, interfered with sleep habits, and may also cause nausea and negatively effects on patients' quality of life [17]. Unless it was treated serious anxiety can affect the length of patients' life. Anxiety symptoms were common at the initial stage of cancer diagnosis, during treatment decisions, as well as with concerns about return of the disease or disease progression but rate of fully developed anxiety disorders was not significantly higher from the one in general population. Contrary to all assumptions patients with advanced cancer had less fear of death but greater from uncontrollable pain, state of loneliness and dependence on others. The experienced of life threatening disease, as cancer, led to development of Posttraumatic disorder. Some of the risk factors for Posttraumatic disorder occurrence after cancer included past experienced of stress life events, history of psychological disorders, and high level of distress previous to cancer diagnosis, coping through avoidance, poor social support and worse physical functioning [18].

According to Srikanthan *et al.*, (2019) who conducted a research in Canada, comment about psychosocial distress score and needs among newly diagnosed sarcoma patients comment that the top three patients reported distress symptoms were feeling tense and unable to relax, feeling nervous and shaky; and experiences repetitive and scary thoughts. The patients had subclinical anxiety symptoms and subclinical depression symptoms as well as experienced suicidal ideation [13] [25].

According to Akter *et al.*, (2015) conducted a study in Bangladesh to compare anxiety and depression status among the cancer patients attended at National Institute of Cancer Research Hospital, Oncology department in Dhaka Medical College Hospital and Uttara Adhunik Medical College Hospital and found that in the individual approach, 48.8% were moderate anxiety, 39.0% were severe anxiety, 11.4 were mild anxiety and 0.8 were normal. The depression was a bit different; 45.5% were moderate depression, 37.4% were severe depression and 16.3% were mild depression; but when approached in groups the result differed; 62.1% were mildly depressed, 20.7 were normal, 16.4 were moderate depressed and 0.9% were severely depressed [14].

The study done by Nuhu *et al.*, (2009) in Ibadan Nigeria about psychological and physical effect of pain on cancer patients revealed that the prevalence of pain was 73.8% which was significantly associated with depression, anxiety, accompanied with suicidal ideal poor sleep, impaired concentration, lack of op-

portunity for leisure dissatisfaction with health, poor overall quality of life and poor ability to get around [26].

3. Methodology

3.1. Research Approach

The study aimed to identify psychological distress of cancer patients. The study used quantitative research approaches by ministered the questionnaires to cancer patients for statistical data.

3.2. Research Design

Research design for this study was a cross sectional analytical hospital based study design. According to Bryman, (2008) cross-sectional design has placed it definitely in the context of quantitative research [27]. The study took place at a single point and it involved looking data from a population at once at a specific point. In the current study the researcher looked data at a single and specific point, that was at KCMC to cancer patients as a targeted population

3.3. Description of Study Area

The study was conducted at KCMC, a zonal hospital in Moshi Municipality, Kilimanjaro Region situated at the North Eastern of Tanzania at the lower slope of Mount Kilimanjaro. In 2012 it was estimated to have a population of 184,292 people. Moshi Municipality covers about 59 square kilometers and it attained the status of a town in 1956 and in 1988 became a municipality. Moshi is one of the tourism centers in northern Tanzania. People in Moshi, apart from practicing tourism, they cultivate coffee, banana, beans and maize [28]. KCMC was selected among the zonal hospitals which conduct clinics of cancer patients referred to from all regions of northern zone including Arusha, Tanga, and Manyara.

3.4. Target Population of the Study

The target population was cancer patients attending at Cancer Care Centre at Kilimanjaro Christian Medical Center (KCMC). This included patients who were attending clinic for consultations and treatment at the center.

3.5. Sample Size

The sample size of this study was approximate of 216 respondents, the 40% of the 540 of respondents (cancer patients). During the study the 175 respondents were involved which were 41% of 427 respondents who attended.

3.6. Sampling Techniques

Systematic sampling technique was employed to obtain 175 respondents. Attendance was portrayed on a paper list on each day of data collection. One of the staff on the desk was trained and instructed about the list provided; hence, she/he had all responsibilities of directing the patients to the respective desk for

provision of questionnaires and consent.

3.7. Sampling Procedure

The 427 patients attended Cancer Care Centre at KCMC hospital. The adult were 403 and children were 24 who were excluded. The systematic random sampling was used thus every second person was selected to represent the participants in the study, therefore the 201 were not involved and 202 were involved. Out of 202 patients, five were very sick and 22 were new referral for consultation who were not yet diagnosed. The 175 respondents participated in the study.

Sources of Data

The sources of data in this study were primary and secondary.

Primary Data

The primary data are those data which were collected or obtained from respondents of this study through questionnaires.

Secondary Data

These are the facts that are recorded before a study is done. They come from various sources of the documents for the aim of supporting primary data which were used in the study especially in the discussion and recommendation. In this study, records from the oncology department at KCMC were used.

3.8. Methods of Data Collection

Questionnaire

The information was collected through questionnaires from cancer patients. The standard tools were used; the anxiety, depression, used "Hospital Anxiety and Depression Scale (HADS)" and adjustment disorder used "Screening Scale for adjustment disorder (ADNM-6)". In this study the questionnaires originated from HADS and ADNM-6 were used to identify psychological distress to cancer patients in terms of anxiety, depression and adjustment disorder.

3.9. Validity and Reliability of Data Collection Instrument

The validity shows the accuracy and truth of the data in research, while reliability means that if the research is repeated by the respondents with the same methods they will acquire the same results or data [29]. For the purpose of achieving validity in the current study, it was designed in such a way that they capture relevant information for the research objectives. The tools (HADS and ADNM-6) were used for data collection which were used in Italy, Australia (HADS) and German (ADNM-6) countries.

Therefore, forward and backward translations were done to enable them to be used in Tanzania context. That means translation was from English to Swahili, and then Swahili to English. The original English version was compared with the backward translation to ensure the meaning of the items is retained. In this study therefore questionnaires were pre-tested through pilot study to ensure whether the questions were answerable and well understood. The pre-tested question-

naires helped to identify questions with ambiguity or double meaning and contradictions. Furthermore, the questionnaires were cross-checked by supervisor and colleagues. Minor corrections were made in case of need to ensure understanding to study participants.

3.10. Data Presentation and Analysis

Data analysis is the process of examining what has been collected in the study by making deduction and inferences according to the objectives of study. It is a brief statement on the analysis and interpretation of data [30] [31]. This study, the raw data were collected, organized, coding and put it into appropriate form. Entry, clearing and analysis of quantitative data were done through Statistical Package for Social Science (SPSS) version 20. Univariate and bivariate were used in the analysis of psychological distress management to cancer patients. The tables, figures, and percentages were used.

4. Results

4.1. Sample Size and Characteristics of the Sample

Research respondents consisted of 175 respondents (the cancer patients). The 175 respondents were provided with questionnaires based on the title of research.

4.2. Demographic Characteristics of the Respondents

Study demographic data were necessary for the purpose of comparing different responses and respondents' characteristics in relation with psychological distress to cancer patients. The demographic data showed their age, sex, marital status, education level, occupation, satisfy with income, means of transport and social cooperation to cancer patients. See **Table 1**.

4.3. The Socio-Demographic Characteristics of the Study Participants

The 175 respondents recruited in the study, 90 (51.4%) female and 85 (48.6%) male. The mean age was 59 years with median; interquartile range (IQR) of 47 to 71 years. The majority of respondents 107 (61.1%) were married, single were 22 (12.6%); divorced and or separated were 15 (8.6%) and widow/widower were 31 (17.7%).

Regarding educational 108 (61.7%) had primary education/below, 35 (20.0%) had secondary education and those who had college/university education were 32 (18.3%). More than half 99 (56.6%) were farmers, those with informal employments were 28 (16.0%) formal employments 22 (12.6%) and others were 26 (14.9%). Three quarters of the respondents 135 (77.1%) were not satisfied with their income while 40 (22.9%) were satisfied with their income. These variables were essential for quantify the statically significant different of the study.

Regarding means of transport, 109 (62.3%) use minibus for transport, 32 (18.3%)

Table 1. Socio-demographic characteristics of the study participants (N = 175).

Variables	N	%
Age, years [Median; IQR]	[59; 47 - 71]	
Below 40	20	11.4
40 - 59	68	38.9
≥60	87	49.7
Sex		
Male	85	48.6
Female	90	51.4
Marital status		
Married	107	61.1
Single	22	12.6
Divorced/ Separated	15	8.6
Widow/widower	31	17.7
Education level		
Primary/below	108	61.7
Secondary education	35	20.0
College/University	32	18.3
Occupation		
Formal employed	22	12.6
Informal employed	28	16.0
Farmers	99	56.6
Others	26	14.9
Satisfy with Income		
Less satisfied	135	77.1
Satisfied	40	22.9
Means of transport to facility		
Minibus	109	62.3
Motorcycle	14	8.0
Tricycle	20	11.4
Private car	32	18.3
Social cooperation		
Poor	24	13.7
Good	118	67.4
Very good	33	18.9

Source: Field Research, 2020.

use private car, 20 (11.4%) use tricycle and 14 (8.0%) use motorcycle. While 118 (67.4%) of the respondents stated to have good social co-operation, and received social support from friends/family, only 33 (18.9%) received good and 24 (13.7%) had poor social cooperation (see the Table 2).

4.4. The Identification of Psychological Distress among Cancer Patients

This objective was analyzed quantitatively. The cancer patients who participated in the study were provided with questionnaires to fill. Questionnaires for cancer patients had thirty-one [31] questions which had three sections which were demographic information eight [8] questions, psychological distress part had twenty [20] questions (anxiety questions 9 to 15, for depression questions 16 to 22 and adjustment disorder, questions 23 to 28) and psychological distress management three [3] questions. The party of questionnaires included "Hospital Anxiety and Depression Scale" (HADS) and Screening Scale for Adjustment Disorder (ADNM-6) as a scales to identify psychological distress among the cancer patients.

According to the findings, 105 respondents (cancer patients) (60.0%) experienced psychological distress, that means, anxiety, depression, and adjustment disorders. Some of the cancer patient may have one psychological distress; others more than one psychological distress. The 70 (40%) respondents did not experience any of psychological distress. Majority of the respondents who did not experience psychological distress had good social and financial support as well as knowledge about the disease. See Table 2 for illustration

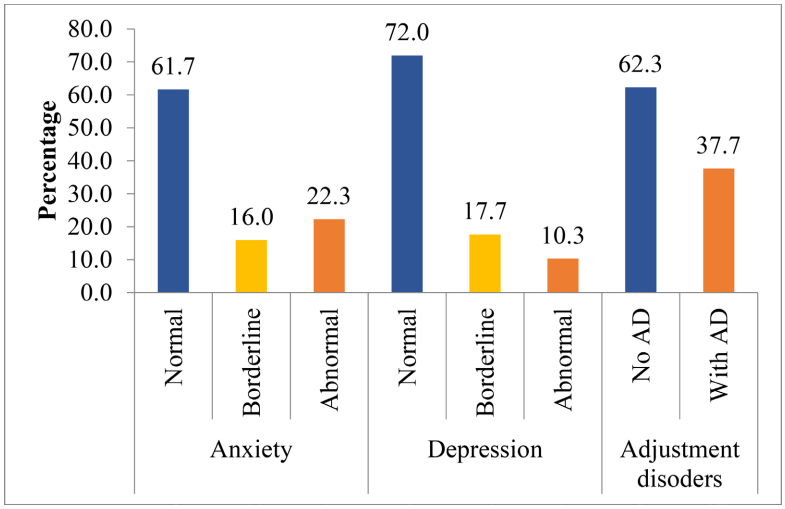
The psychological distress focused on anxiety, depression and adjustment disorders. This study used HADS to identify the anxiety and depression and ADNM-6 to identify adjustment disorder among cancer patients. Anxiety and depression identified in three aspects, normal, borderline and abnormal, where by borderline and abnormal levels showed that, they experienced psychological distress. The adjustment disorders identified two aspects; no adjustment disorder, and with adjustment disorder (Figure 1 illustrates the findings).

The findings of this study indicated the psychological distress among cancer patients, as follows: anxiety showed that 61.7% of the cancer patients were normal, that means had no anxiety. 16.0% experienced anxiety at the level of borderline and 22.3% experienced anxiety at the level of abnormality. Therefore, 38.3% patients who were in the borderline and in the level of abnormal were

Table 2. Psychological distress level to cancer patients.

		Frequency	Percent
Valid	No	70	40.0
	Yes	105	60.0
	Total	**175**	**100.0**

Source: Researcher, 2020.



Source: Researcher, 2020.

Figure 1. Psychological distress among cancer patients.

cancer patients with anxiety. Regarding the depression, the cancer patients who did not experience depression were 72%, and those who experienced depression were 28.0%, (the sum of 17.7% of borderline level and 10.3% abnormal level). The patients who did not experience adjustment disorders were 62.3% and those who experienced adjustment disorder were 37.7% (see the **Figure 1** above). However, those respondents who did not experience psychological distress they frequently attended clinics for treatment and health education

4.5. The Exploration of the Relationship between Demographic Characteristics of Cancer Patients and Psychological Distress

The demographic data used were age, sex, marital status, education level, occupation, income satisfaction, means of transport and social cooperation to explore the relationship of those demographic characteristic of cancer patients and psychological distress. This was the second objective of the study, which analyzed quantitatively using SPSS version 20 (**Table 3** shows this).

The findings according to the table above, were divided into three sub-groups: below 40 years (20 respondents), between 40 to 59 years (68 respondents) and from 60 years and above, 87 respondents. Respondents aged from 40 to 59 seemed to experience more psychological distress whereby anxiety were 42.6%, depression were 33.8% and adjustment disorder were 39.7% compared with other sub-group of age. The respondents aged below 40 years experienced less psychological distress, (anxiety were 30.0%, depression were 15.0% and adjustment disorder were 25.0%). The cancer patients aged from 60 and above were 87 but they experienced psychological distress like middle group (aged 40 to 59 years). The findings were: anxiety 36.8%, depression 26.4% and adjustment disorder 39.1% (see the **Table 3**).

Socio-demographic attributes that there were significantly associated with psychological distress were; less educated respondents had high proportion of

Table 3. The relationship between demographic characteristics of cancer patients and psychological distress (N = 175).

Variables	N	Psychological Distress							
		All PD		Anxiety		Depression		AD	
		n (%)	P-value	n (%)	P-value	n (%)	P-value	n (%)	P-value
Age group									
Below 40	20	9 (45.0)	Ref	6 (30.0)	Ref	3 (15.0)	Ref	5 (25.0)	Ref
40 - 59	68	44 (64.7)	0.11	29 (42.6)	0.31	23 (33.8)	0.11	27 (39.7)	0.23
≥60	87	52 (59.8)	0.23	32 (36.8)	0.57	23 (26.4)	0.28	34 (39.1)	0.24
Sex									
Male	85	47 (55.3)	Ref	29 (34.1)	Ref	23 (27.1)	Ref	31 (36.5)	Ref
Female	90	58 (64.4)	0.22	38 (42.2)	0.27	26 (28.9)	0.79	35 (38.9)	0.74
Marital status									
Married	107	64 (59.8)	Ref	34 (31.8)	Ref	29 (72.9)	Ref	43 (40.2)	Ref
Single	22	9 (40.9)	0.10	5 (22.7)	0.40	3 (86.4)	0.18	6 (27.3)	0.26
Divorced	15	11 (73.3)	0.32	10 (66.7)	0.01	9 (40.0)	0.01	7 (46.7)	0.63
Widow/widower	31	21 (67.7)	0.43	18 (58.1)	0.01	8 (74.2)	0.89	10 (32.3)	0.43
Education level									
Primary/below	108	76 (70.4)	0.03	50 (46.3)	0.03	38 (35.2)	0.01	46 (42.6)	0.41
Secondary	35	13 (37.1)	0.30	9 (25.7)	0.95	7 (20.0)	0.41	9 (25.7)	0.44
College/University	32	16 (50.0)	Ref	8 (25.0)	Ref	4 (12.5)	Ref	11 (34.4)	Ref
Occupation									
Formal employed	22	12 (54.5)	Ref	8 (36.4)	Ref	6 (27.3)	Ref	7 (31.8)	Ref
Self-employed	28	15 (53.6)	0.95	8 (28.6)	0.56	5 (17.9)	0.43	11 (39.3)	0.59
Farmers	99	63 (63.6)	0.43	45 (45.5)	0.44	32 (32.3)	0.65	38 (38.4)	0.57
Others	26	15 (57.7)	0.83	6 (23.1)	0.32	6 (23.1)	0.74	10 (38.5)	0.64
Income satisfactory									
Less satisfied	135	86 (63.7)	0.07	54 (40.0)	0.39	39 (28.9)	0.63	57 (42.2)	0.02
Satisfied	40	19 (47.5)	Ref	13 (32.5)	Ref	10 (25.0)	Ref	9 (22.5)	Ref

Source: (field research 2020).

psychological distress 76 (70.4%) as compared to higher education respondents 16 (50%) with statistically significant different of (P = 0.03). This was also observed to have significant associated with higher proportions of anxiety and depression score. Those with primary education or below had higher proportion 50 (46.3%) and 38 (35.2%) of anxiety (P = 0.03) and depression (P = 0.01) respectively as compared to those reached college/above. Patients with primary education or below had 46 (42.6%) of adjustment disorders compared to 11 (34.4%) of those with college or above level of education but this was not statis-

tically significant. Respondents with secondary education were not affected like those who were in primary education. They experienced psychological distress more than those who got college and university education. They score as follows: Anxiety 9 (25.7%), depression 7 (20.0%) and adjustment disorder 9 (25.7%) (see Table 3 above).

Psychological distress was more prevalent to respondents who were less satisfied with their level of income 86 (63.7%) as compared to other groups 19 (47.3%), and this were statistically significant (P = 0.007). The less satisfied respondents showed the level of anxiety 54 (40.0%), depression 39 (28.9%) and adjustment 57 (42.2%). This significant difference was also observed in specific psychological distress; adjustment disorders 57 (42.2%) was significantly more prevalent among less satisfied groups compared to 22.5% for satisfied group (P = 0.02). Generally, the less satisfied 135 were more than those who were satisfied with income. According to the findings, in the satisfied group; anxiety was 13 (32.5%), depression was 10 (25.0%) and adjustment disorder were 9 (22.5%) (see Table 3 above for illustration).

Other social demographic variables were not significantly associated with the general psychological distress such as age, sex and occupation; however, marital status indicated significantly association with anxiety score; those who were currently divorced had high 10 (66.7%) proportion of anxiety compared to married patients 34 (31.8%). The married respondents were more 107, followed by widow/widower 31. Single were 22 and divorce were 15. The psychological distress to widow/widower were; anxiety 18 (58.1%), depression 8 (74.2%) and adjustment disorder were 10 (32.3%). The sub-group of divorced, anxiety was 10 (66.7%), depression was 9 (40.0%) and was statistical significant different (P = 0.01). The adjustment disorder was 7 (46.7%). The indication of psychological distress to single respondents: anxiety 5 (22.7%), depression 3 (86.4%) and adjustment disorder were 6 (27.3%). For married respondents: anxiety were 34 (31.8%), depression were 29 (72.9%) and adjustment disorder were 43 (40.2%). (See the Table 3 above).

Regarding sex, female respondents were 90 and male were 85. The psychological distress to male: anxiety 29 (34.1%), depression 23 (27.1%), and adjustment disorder was 31 (36.5%). For females was a bit different: anxiety 38 (42.2%) depression 26 (28.9%) and adjustment disorder were 35 (38.9%).

Concerning occupation, to cancer patients (respondents); there were four sup-groups which were, formal employment, self-employment, farmers and others. Majorities were famers (99) followed by self-employed [28]. Formal employed were 22 and others were 26. The psychological distress was as follows; formal employed, the anxiety was 8 (36.4%), depression was 6 (27.3%), and adjustment disorder were 7 (31.8%). Self-employed; the anxiety was 8 (28.6%), depression was 5 (17.9%) and adjustment disorder were 11 (39.3%). The psychological distress for the farmers; anxiety was 45 (45.5%), depression was 32 (32.3%) and adjustment disorder were 38 (38.4%). See Table 3.

5. Discussion

5.1. Identify Psychological Distress among Cancer Patients

The current study found high prevalence of psychological distress to cancer patients, about 60%. It was noted that 38.2% experienced anxiety, 28.0% experienced depression and 37% experienced adjustment disorders. The psychological distress identified were anxiety, depression and adjustment disorders. This finding corresponds to the findings of the study done in Nigeria by Ojewole, Madu and Nwozichi, (2018) which found high prevalence of psychological distress about 76% of cancer patients [21]. Therefore, the findings of the study done in Nigeria, show high presence of psychological distress (76%) compared to findings in Tanzania (60%). It also, corresponds to the findings of the study done by Uwayezu, Gishoma, Sego *et al.*, (2019) in Rwanda who found that depression was 67.7% and anxiety was 52.1% among the patients suffering from cancer [22]. Although Rwanda and Tanzania found in East Africa, the findings of the study done in Rwanda showed that cancer patients in their country were more depressed (67.7%) than cancer patients in Tanzania (28.0%); even anxiety in Rwanda were more affected (52.1%) than the findings of this study done at KCMC, Moshi, Tanzania (38.3%). Therefore, we may be in the same African Region, but people experience psychological distress differently, but generally most of cancer patients suffer with psychological distress.

Holland and Aliici (2010) found that generally psychological distresses to cancer patients ranged from 35% to 40% [23]. These were possible because cancer acted as the negative stressors threatened lives applying serious impact on patients' physical and mental health such as anxiety and depression [15]. Cancer has a tendency to create anxiety, fear, anger, sadness, and depression as patients struggle to define and resolve the series of decision that confront those symptoms [9]. Therefore, this is obvious, once an individual is diagnosed as a cancer patient, suffered from unpleasant emotional psychologically [10]. Anxiety, is the most prevalent to depression and adjustment disorders: The findings from this study show that anxiety was (38.3%) higher than depression (28.0%). This was inconsistent with the findings of the study in Bangladesh by Akter *et al.*, (2015) who indicated slightly different in anxiety and depression where by anxiety 39.0% was and depression was 37.4% to cancer patients [14]. These two psychological distresses can vary from one to another in the different areas and to different people in the different geographical areas.

Another findings of the study by Singh and Banipal, (2017) in USA found significant difference in psychological ditress to cancer patients; scores in depression (90%), anxiety (56%) and stress as a party of adjustment disorder (28%); depression was quite high to patients with cancer in USA by Singh & Banipal (2017) [32] compared to the findings of this study which showed depression (28.0%) anxiety (38.3%) and adjustment disorder (37.7%). The USA and Tanzania are found in different continents, but it seems that, cancer patients in USA experiencing highest psychological distress especially depression and anxiety,

than cancer patients in Tanzania probably due to social interaction which may reduce distress to client with cancer. But according to Gundelack and Henry, (2016) [12] it was possible for the cancer patients to change the sense of self and one's circumstances due to psychological distress, and usually patients commonly experienced depression and anxiety as consequences of the illness.

5.2. Relationship between Demographic Characteristic of Cancer Patients and Psychological Distress

The findings of this study showed that the low education status, less income satisfaction and divorced in married status, were significantly associated with psychological distress. Among patients with cancer, the findings of this study showed that those with low education were 46.3% experienced anxiety and 35.2% experienced depression and those with less satisfied income. The findings from this study indicated that cancer patients with primary education/below and low monthly income had significant high prevalent of psychological distress as compared to those who reached college or university education and with high monthly income.

These findings of this study are consistent with the findings of the study done in China by Hong, Zhang, Song *et al.*, (2015) [33] which commented that patients with higher monthly income and higher educational level had significantly low psychological distress than the lower monthly income earners and low educational status. This is also supported by the findings by Mason, Juyal Das *et al.*, (2019) [34] in Northern India who found that psychological distress was significant higher with patients with low social-economic status particularly unemployed. That means cancer patients with high monthly income usually do not experience high psychological distress.

Regarding adjustment disorders, the findings of this study showed that adjustment disorders was significantly higher among less satisfied group of cancer patients as compared to the satisfied group of cancer patients. This is corresponding to the findings of the study done in Ibadan in Nigeria which found that, the dissatisfaction with health was the one of the significant associated with psychological distress include depression and anxiety among the cancer patients [26]. Although the findings were in the different places, but the satisfaction of the income may lessen the psychological distress among the cancer patients.

Marriage status was also found to be significantly associated with anxiety score which was more prevalent to patients who were currently divorced and thus lacking partners support. The findings from this study correspond to the findings of the study in USA which found association between partner support and psychological distress among cancer patients. In their findings (USA), it was observed that partner support decreases effect of psychological distress [35]. Therefore, cancer patients who received social support especially from the partners were less experiencing psychological distress, compared to those cancer patients with no social support.

Regarding age, the findings of this study showed that people aged above 60

years were more affected by cancer compared to young age. People aged above 60 years were 59.8% affected by cancer compared to the people below 40 years (45.0%). This corresponds to the findings of the study done in Lyon in France, whereby the United Nation's population estimates that the population of Africa between 2010 and 2030 is expected to increase by 50% overall and by 90% of population will be aged 60 years and this is the age at which cancer mostly frequently occurs [6]. These is because this age is one of the risk factors for 50% [25] of patients got cancer and for the cancer patients, most of them were about 65 years [37].

Not only that, but also, the findings of the study done by Mason, *et al.*, (2019) in Northern India indicated that there was prevalence of psychological distress significance to older age patients [34]. That means the older patients including the cancer patients were more affected with psychological distress. This finding were contrary to the findings of the study done in Norway by Aass, Fossa, Dahl and Moe (1997) that commented that, the greater levels of psychological distress including anxiety were among the middle-aged cancer patients and lower levels of the anxiety patients under 30 years and over 70 years old [36]. This findings of the study slightly differ with the findings of this study; whereby cancer patients above 60 years old, in this study experienced anxiety and depression more than the younger cancer patients, that means below 40 years. Therefore, according to the findings of this study and study from Norway, younger were less affected compared with middle age people.

The findings of this study showed that according to sex, as a variable of the cancer patients in relation to psychological distress, female was more affected compared to male; the anxiety to female were (42.2%) and male were (34.1%); the depression, female were (28.9%) and male were (27.1%). This corresponded with the findings of the study done by Hoffe and Balducci, (2012) where the female patients were reported to have more symptoms of anxiety (50.5% vs 28.6%) and the symptoms of depression (25.8% vs 17%) [25]. Therefore, seemed that the female patients were more affected compared to male patients.

6. Conclusion

Psychological distress among cancer patients was high among cancer patients at KCMC. Both anxiety and depression were found high among the respondents. Marital status divorce, low income and low education status were significantly associated with psychological distress, though psychological distress was found high at the site.

7. Recommendation

First, the hospital administration has to allocate psychologists to Oncology Department to address psychological problems to cancer patients.

Second, Oncology Department should develop interest of doing research on psychological distress management because study showed 60% cancer patients

suffer with psychological distress.

Third, hospital management should sensitize the protocol on the use different psychological therapies according to the psychological problem found to cancer patients.

Fourth, psychological issue to patients is an essential part to be explored and addressed among the patients.

Lastly, further studies should be conducted in our hospital setting in order to discover more the needs of our patients and improve our services to them.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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