

**PAIN MANAGEMENT PRACTICES AND THEIR EFFECTS ON PERFORMANCE
OF ACTIVITIES OF LIVING AMONG ADULT CANCER PATIENTS AT
KENYATTA NATIONAL HOSPITAL**

**DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
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DEDICATION

I dedicate this work to my loving husband John and my children Stephen and Mary for their support throughout the project and to my parents Justus and Lucinia for bringing me up.

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ABBREVIATION AND ACRONYMS

ALs	Activities of Living
BPI	Brief Pain Inventory
CEO	Chief Executive Officer
ERC	Ethic and Research Committee
GFC	Ground Floor C
GFD	Ground Floor D
HOD	Head of Department
IASP	International Association for Study of Pain
JCAHO	Joint Commission on Accredited of Healthcare Organization
KNH	Kenyatta National Hospital
MOH	Ministry of Health
NRS	Numerical Rating Scale
NSAID	None Steroidal Anti-inflammatory Drugs
P O	Post Office
QoL	Quality of Life
SPSS	Statistical Package for Social Scientist
UON	University of Nairobi
VRS	Verbal Rating Scale
W.H.O.	World Health Organization

OPERATIONAL DEFINITION

Activities of living	Activities that a person tend to do every day without needing assistance and are essential for survival
Cancer treatment	Remedy used in management of cancer aimed at controlling cells growth, and / or cancer symptoms. It includes: radiotherapy, surgery, chemotherapy, hormonal therapy, immunotherapy, and angiogenesis inhibitors.
Cancer	A disease condition characterised by uncontrolled cell multiplication and growth which occurs at all ages and can affect any part of the body and they are able to invade other cells.
Pain management Modality:	Approach or method of pain management or treatment for example using analgesics
Pain	Pain is unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
Palliative care	Approach that aims at improving the quality of life of patients and their families facing the problems associated with life threatening illness, through the prevention and relief of suffering.
Quality of life	Multidimensional construct that includes performance and enjoyment of social roles, physical health, intellectual functioning, emotional state, and life satisfaction or well-being.

ABSTRACT

Background: Pain is the most devastating symptoms in cancer and may occur right from time of diagnosis to the end of life. It adversely affects the quality of life especially the physical component leading to disability. Pain remains a major challenge in cancer management despite the great efforts by World Health Organization (W.H.O.) which led to development of guidelines in cancer pain management, the W.H.O. analgesic ladder (W.H.O. 1996). Pain is subjective and its relief mainly depends on the pain treatment employed. There are several patient's attributes that influence the effect of pain management. These include; age, culture, gender, type of cancer, stage of the disease, among others. The cancer pain management practice is mainly the selection of the most effective pain relief modality/treatment such as analgesics e.g. opioids; palliative surgery, radiation and chemotherapy; physiotherapy; and psychotherapy. The outcome of the treatment is indicated by ability to perform activities of living. **Objective:** To assess the pain management practices and their effects on performance of activities of living among adult cancer patients at Kenyatta National Hospital (KNH), Kenya. **Methods:** This was descriptive cross-sectional study. A total of 188 adult cancer patients on cancer treatment were recruited to the study after signing an informed consent. Convenient sampling method was used to obtain the sample. The study was conducted at Kenyatta National Hospital (KNH) Cancer Treatment Centre (CTC) i.e. Oncology ward Ground Floor D (GFD), oncology clinic Ground Floor C (GFC) and radiotherapy for a duration of three months. A structured questionnaire and BPI were used to collect the data. Data was entered and analysed using SPSS version 21.0. The data was described using descriptive statistics and analysed using Regression and Pearson correlation to test relationship between independent variables and dependent variable. The pain management practices were identified and pain interference with; performance of ALs, mood, walking, normal work, sleep, relation with others and enjoyment with life was examined. The significant levels were set at $P < 0.05$ for all tests. **Results:** A significant relationship between pain relief, pain intensity and interference with performance of living was found. However, none of the social demographics variables (age, education level, marital status, income) were significantly related to pain relief. Chemotherapy and surgery had a significant relationship with the pain relief ($P = 0.054$,) though the painkillers (NSAIDs)($n = 172$) were the most used for cancer pain control. **Conclusion:** Pain management practices determine pain relief which has a reciprocal relationship with performance of ALs. Chemotherapy and surgery may be the suitable therapy which may enhance QoL of cancer patient.

CHAPTER ONE: INTRODUCTION

1.1 Back Ground of the Study.

Pain is unpleasant sensory and emotional experience associated with actual or potential tissue damage, or describe in terms of such damage (International Association for the Study of Pain (ISPA), 1994). Pain is the most terrifying symptom in cancer and affects largely quality of life.

W.H.O. defined QoL as individual's perception of their position in the context of culture and value system where they live, and in relation to their goals, expectations, standard and concerns. W.H.O. furthers identifies six components of QoL i.e. person's physical health, psychological state, level of independence, social relationships, personal beliefs/spirituality and relationships to relevant features of environment. (W.H.O. health promotion glossary (HPG) 1998)

The incidence of cancer was 12,667,470 in 2008 and is projected by W.H.O. to increase to over fifteen millions by year 2020 thus suggesting that cancer-related pain may be a major issue of health care systems, throughout the world (Ripamonti C.I. 2012). The number of cancer patients is increasing with estimated nine millions new cases per year half of which are in developing countries. (W.H.O. 1996). According to Kenya national cancer control strategy 2011-2016, Kenya's annual incidence of cancer is estimated at about 28,000 cases. This implies that about 9000 patients suffer from cancer pain.

Cancer pain can be classified as periodic, long term or sudden and based on pathophysiology can as well be classified as nociceptive, neuropathic, idiopathic or psychogenic. Cancer patients may suffer from variety of pains i.e. total pain which include physical, social-cultural, psychological and spiritual pain. This pain mostly starts right from diagnoses and persists throughout the disease process. Although pain is subjective, physical pain remains the main cause of suffering and can easily be assessed using the validated tools.

Cancer pain among cancer patients have prevalence of 64% in patients with metastasis, advanced or terminal phase disease, 59% in patients on anticancer treatment and 33% in patients after curative treatment i.e. cancer survivors, however there was no difference in pain prevalence between the patients during anticancer treatment among those in advanced or terminal phase of the disease. (Sichetti, Bandieri, Romero, Biagio, Luppi, Belfiglio, Tognoni and Ripamonti, 2010).

Pain threshold varies in each patient differs. It may be raised by empathy, distraction, sense of humour, sufficient sleep and understanding or lowered by fear, anger, loneliness, depression and fatigue. (Ripamonti C I, 2012).

In almost all cancer patients, the quality of life is largely affected by pain with physical activity affected most especially sleeping, appetite, personal relationship, emotion, and visual activity (Bhuvan K.C. et al, 2013), patients with mild cancer pain are oftenly undertreated despite the clear guidelines by W.H.O. 3 steps analgesic ladder. Cancer pain despite causing great suffering to the patient also takes along a heavy burden on the family and society at large. (Ping, Sunz, Lu, Pang, and Ding, 2012).

The main goals of cancer pain management are to achieve pain control and relief, reduce adverse effects and cost, enhance autonomy and performance of activities of daily living including psychological aspect, and improve quality of life. (American Society of Anaesthesiologists (ASA) Task Force, 1996.) Successful pain management require multidisciplinary approach failure to which result to under-treatment (APCA, 2012). In 1986 W.H.O. came up with cancer management guidelines to ensure optimal cancer pain assessment and treatment.

European Society for Medical Oncology (ESMO) clinical practice guidelines 2011 recommended that assessment and management of pain in cancer patients is of great importance in all stages of the disease. Correct and consistent assessment of pain by using validated assessment tools is the initial step for an effective and individualized treatment. Three tools have been suggested for use in assessment of pain intensity i.e. visual analog scales, verbal rating scale, and numerical rating scale. However, when cognitive functions are severely affected e.g. in old age and in presence of inadequate communication skills or end of life stage, self-reporting of pain becomes difficult. In this case observation of pain related behaviours and discomfort may be used as an alternative assessment tool for pain though not validated. (Ripamonti Bandieri, and Roila, 2011).

1.2 Statement of problem

Pain is the most terrifying symptom in cancer patients. It is defined as unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (International Association for Study of Pain (IASP), 1994). Nevertheless it is essential for survival as an important physiologic response to stimuli.

Cancer patients generally suffers from various types of pain such as acute pain, chronic pain, incidental pain, breakthrough pain, procedural pain, neuropathic, and nociceptive pain. These pains are influenced by psychological factors, spiritual factors, and social factors. Cancer pain management practices require holistically integrated multi-disciplinary approach and are the main determinant of pain relief.

Cancer pain when is inadequately controlled can affect patient's physiological, psychological, social and mental functions causing great suffering and also brings a heavy burden on the family and society. It interferes with the performance of ALs, mood, mobility and independence which occurs despite the underlying disease stability. Cancer patient in pain may become hopeless and may believe that pain indicates complication and worsening of the deadly ailment. Further it can result to poor compliance to cancer treatment, despair and feeling of worthlessness.

Study done in Beijing on quality of life (QoL) in cancer patients in 2012 concluded that cancer patients with pain have poor QoL which is improved by adequate pain control. QoL is one of the main outcomes which determine the effectiveness of cancer treatment (Ping Y et al, 2012). Study done in Mainland China showed that patient's appetite, mood, sleep, daily activity, pain intensity, general appearance and family support is significantly correlated to pain score while social support, attitude to cancer and its treatment is not.(Di Deng et al, 2011)

The number of patients with cancer is on increase with estimated nine million new cases every year, where more than half are from developing countries. (W.H.O.1996). Cancer pain occurs in about one third of the patients on anticancer treatment. Therefore pain management and cancer treatment should go concurrently with an aim of relieving the pain to patients' contentment. This ensures effective body functions and painless death. (W.H.O., 1996). In 1986 World Health Organization published guidelines for cancer pain management termed as 'W.H.O. analgesic ladder' which is an organised guide to pain assessment and analgesic choice in cancer pain treatment.

According to Kenya national cancer control strategy 2011-2016, Kenya's annual incidence of cancer is estimated at about 28,000 cases. The occurrence of cancer pain under-treatment was found to be determined by geographical area (Europe and Asia), low economic level countries and cancer care setting. Wealthier health systems withstand and encourage a better

pain management via awareness crusades and full drug covering by health insurances or national health system. (Deandrea et al, 2008). Kenya is a developing country with poor health financing system, with majority of the citizens unable to join health insurances. The public health insurance scheme available in Kenya doesn't cater for the outpatient. Other private health insurance schemes are too expensive for majority of Kenyans. This may result to uninsured and underinsured patients who may not afford to buy the pain medications hence may choose not to purchase them. Pain has been included as the 5th vital sign by JCAHO for institutions in US yet in Kenya this has not been implemented both in practice and in training. There are no specialised pain clinics and advanced pain management techniques readily available to cancer pain patients and often pain management remain a low priority.

1.3 Justification of study

According to W.H.O. the number of cancer patients is increasing throughout the world with estimated nine millions new cases per year in which more than a half is in developing countries. (W.H.O. 1996). According to Kenya national cancer control strategy 2011-2016, Kenya's annual incidence of cancer is estimated at about 28,000 cases. Among patients on active anticancer treatment, cancer pain occurs in about one third and among those with advanced disease, in more than two thirds. (W.H.O. 1996). This implies that about 9000 patients suffer from cancer pain in Kenya.

Cancer pain affects the QoL adversely and mostly the physical aspect. It is strongly associated with impaired daily functioning, deteriorating depression and anxiety, dissatisfaction with opioid therapy, poor medical outcomes, and socioeconomic burden considering that patients with cancer pain are likely to utilize more healthcare resources than those without. The main aim of the cancer treatment especially in advanced disease state is the pain relief among other management of other cancer symptoms.

KNH is the only government institution which offers a comprehensive cancer care and referral for patients from all over the country including some from the private hospitals. Considering the effects of cancer pain on QoL and economy it is felt worthwhile to explore the cancer pain management practices at KNH as the main cancer treatment centre and its effects on the patient's performance of activity of living as domain of quality of life. The study findings will provide reliable information for improving hospice and palliative care for

this special group of population. Publicized study findings will create reasons for institutions to improve the public's opinion on the quality of care received thus improve pain management tactics. Finally the study findings will be compared with those of other similar studies done.

1.4 Broad objective

To determine the pain management practices and its effects on performance activities of daily living among adult cancer patients attending cancer centre at KNH, Kenya

1.5 Specific objective

1. To identify the most common mode of pain treatment used in cancer patient.
2. To assess the effect of pain management practices on pain relief
3. To identify the most effective mode of treatment in cancer pain management.
4. To assess the effects of pain relief on performance of activities of living.
5. To identify mitigating factors that influences the pain management practices and pain relief.

1.6 Research Questions

- 1 Do cancer patient who are on cancer pain management get adequate pain relief?
- 2 How does the cancer pain affect the patient's performance of activities of living?
- 3 What are the most common pain relieving modalities used?
- 4 What are the most effective pain relieving modalities available to cancer patients?
6. Are there mitigating factors that influences the pain management practices and pain relief?

1.7 Hypothesis

Cancer pain management practice at KNH cancer treatment centre leads to cancer pain relief which enhance the performance of activities of living among the adult cancer patients attending the clinic.

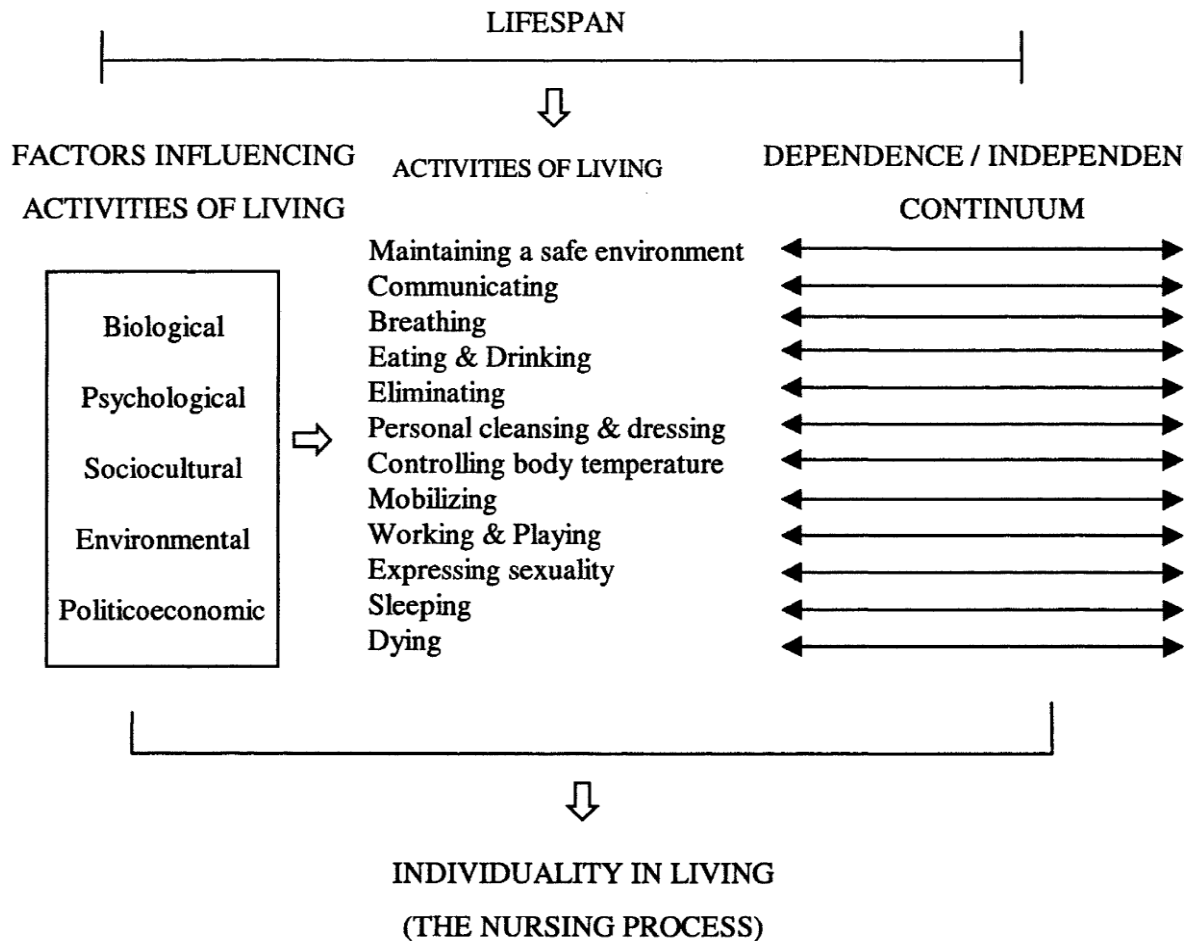
1.8 Study benefit

Since pain is the most devastating cancer symptom to majority of cancer patients, once it is well managed and controlled quality of life of the patient is enhanced. Therefore the findings of this study will be utilized to improve cancer pain management practices especially in palliative care as part of evidenced based practice. In addition the findings will be utilized to develop future policies concerned with cancer pain management practices and improvement of quality of life of cancer patients.

The findings also will help to identify the gaps for further research and innovative strategies for the management of cancer pain and enhancement of quality of life of cancer patients.

1.9 Theoretical Framework

Figure 1: Diagrammatic representation of Roper, Logan and Tierney Model of Living
(Karen et al, 2003)



Roper, Logan and Tierney (RTL) (Karen et al, 2003) developed the model of nursing based on the activity of living. The model of living has five components: activities of living (ALs), life span, dependence/independence continuum, factors influencing ALs, and individuality in living.

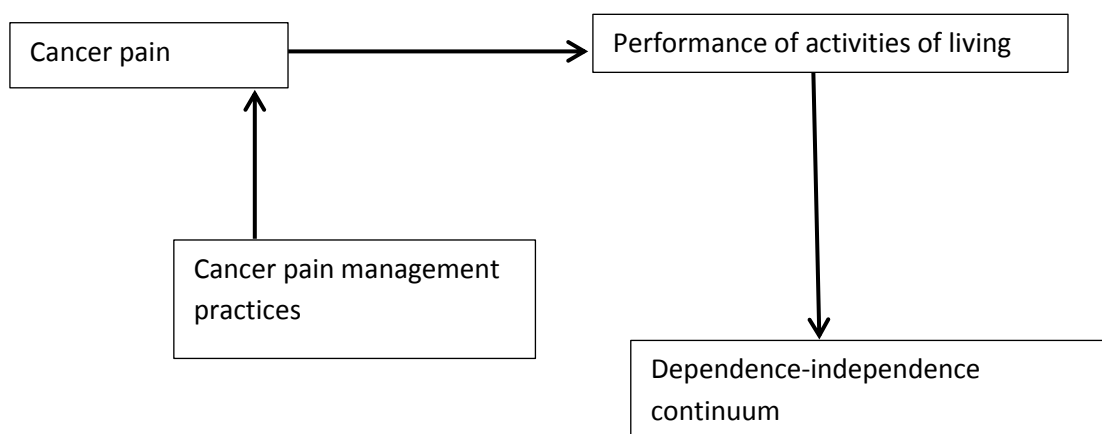
They identified twelve activities of living which they felt they ensure survival of an individual. These activities includes: maintaining safe environment, communication, breathing, eating and drinking, eliminating, personal cleansing and dressing, controlling body temperature, mobilizing, working and playing, expressing sexuality, sleeping, and dying. They also identified five factors that influence these activities of living; biological, psychological, sociocultural, environmental, and politico-economic. (Karen et al, 2003).

They further identified the roles of the nurse as to prevent potential problems, alleviate the actual problems and help the patient cope positively with issues that cannot be resolved. (Karen et al, 2003). These roles are applied in management of cancer pain. The effects of pain in performance of ALs are determined.

Pain is has a biological, psychological and sociocultural component. It influences the activities of living. When a patient is in pain the performance of these essential activities is reduced. The severity of the pain oftenly determine the level at which the patient is at on dependence – independence continuum. This implies that the patient may be experiencing pain but is able to perform the activities of living without limitations, or may require assistance which in this case may be a human being or an instrument e.g. collar, splint, or may be totally dependent i.e. requiring total nursing care.

Pain relief therefore becomes a paramount objective in care of these patients.

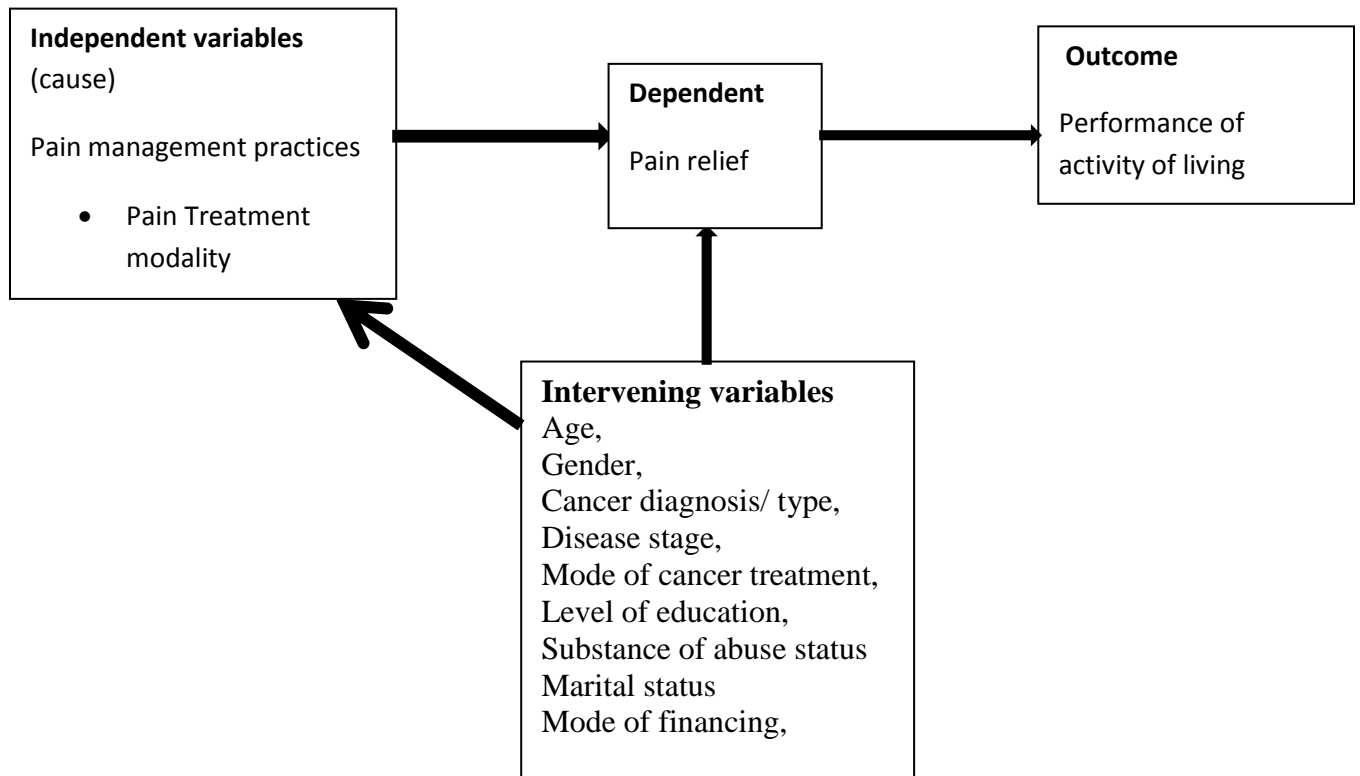
Figure 2: Operational Framework



Source: Researcher

1.10 Conceptual framework

Figure 3: Conceptual Framework



The cancer pain management practices are various modes of treatment which forms the independent variable these includes:- analgesics, palliative radiotherapy, palliative surgery, palliative chemotherapy, psychotherapy and palliative physiotherapy. For a patient to experience pain relief, the mode of treatment chosen must be highly effective. Once the pain treatment mode is effective the patient experiences adequate pain relief and is able to carry out the activities of living independently. However some patient's attributes (intervening variables), such as age, gender, culture, cancer diagnosis/ type, disease stage, mode of cancer treatment (i.e. none palliative), level of education, substance of abuse status, marital status, and mode of financing, may influence pain relief.

CHAPTER TWO: LITERATURE REVIEW

2.1 Definition of pain

According to International Association for the Study of Pain (ISPA), 1994, pain is unpleasant sensory and emotional experience associated with actual or potential tissue damage, or describe in terms of such damage. The assessment and management of pain is one of the key indicators of quality of care.

2.2 Cancer pain

2.2.1 Pathophysiology of cancer pain

Cancer associated pain can be present in time of diagnosis and increase as the disease advances. The pain may be disease related or treatment related. In addition to cancer pain other chronic pains which were there prior to cancer may still be problematic e.g. lumbago. Psychosocial factors play a major role in the pain perception and intensity. According to IASP, October 2008-2009, there are multiple causes of pain in a cancer patient. These pains may be due to, 1. Pressure to surrounding tissues as well as the viscera due to tumor expansion which may result to tissue ischaemia or necrosis, 2. Secretion of inflammatory and pain mediators by tumors, 3.infiltration of tumor to nerve plexus and damage to nervous tissue thus neuropathic pain which is pathetic to patient, 4. tumor may metastasis to the bones causing bone pain, painful muscle spasm and muscular pain usually severe. Bone pain may result to: immobilization, muscle hypercatabolism and rapid weight loss. Breakthrough pain which is transitory may occur on otherwise well controlled pain.

Treatment related pain is mainly due to adverse effects of the of treatment modalities such as chemotherapy, hormonal therapy, radiotherapy, and surgery. Some of adverse effect of such treatment include; bone pain, Mucositis, nerve damage and opioid induced hyperalgesia.

2.2.2 Effects of pain on activities of living

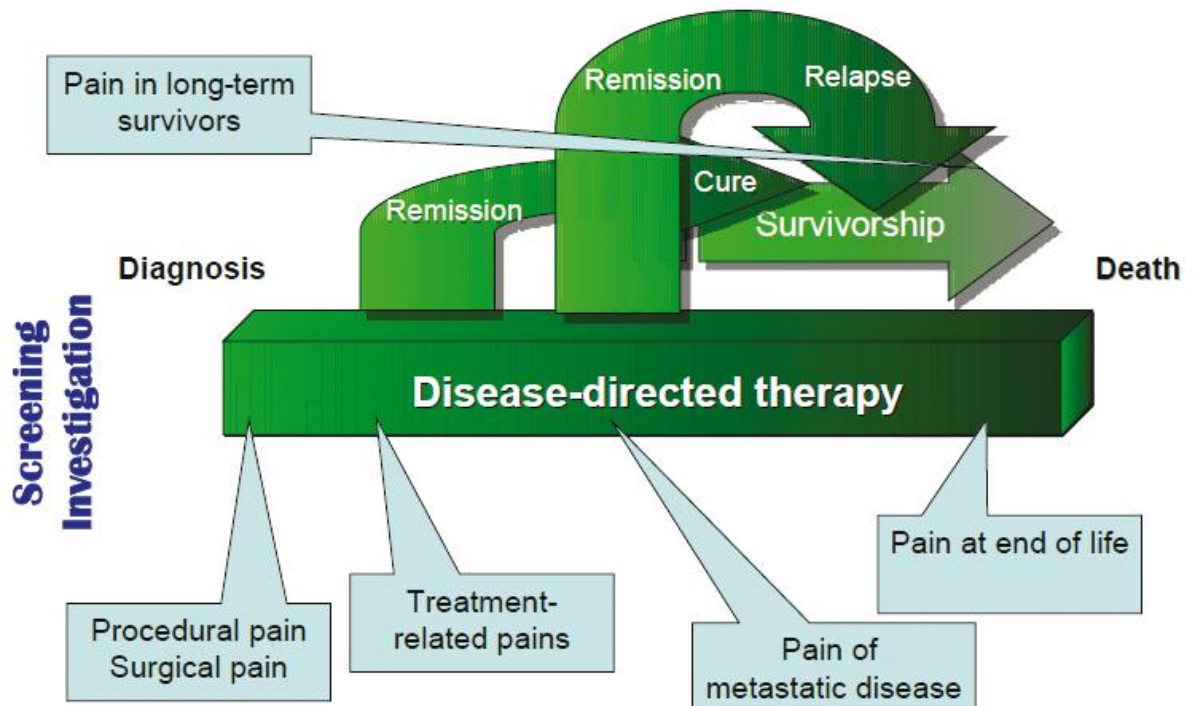
Roper, Logan and Tierney identified 14 activities of living as: Maintaining a safe environment, Communication, Breathing, Eating and drinking, Elimination, Washing and dressing, Controlling, temperature, Mobilisation, Working and playing, Expressing sexuality, Sleeping, and Death and dying. Study done in Malaysia concluded that activities of living are affected by pain in almost all cancer patients. (Bhuvan K.C. et al, 2013). The activities of living determine the quality of life. Pain occurs in both ambulatory patients as well as hospitalised patients and mainly affect function.

Study done in Beijing showed that majority (89.6%) of the cancer patients received pain medication but only less than a third (26.2% got pain relief despite the guidelines of pain control published since 1987. (Ping Y et al, 2012). This shows that cancer pain still require consideration and well-designed interventions to enhance quality of life of the patients. Most patients are satisfied with the pain management regardless of whether relieved or not. This satisfaction is influenced by the perception of pain. Studies done shows that lung cancer is the most common type of cancer and patients with this type of cancer experience pain more often than others. Ping further identified pain management satisfaction score, family personal monthly income, those current on chemotherapy, and cancer stage as predictors of pain controlled outcomes. Those with average family income were found to have better pain control while those on chemotherapy and in late stages of cancer had undertreatment. Study done in Germany showed that patients with malignancies experience less pain postoperatively compared to those without (Christoph Nestler, Richter, Hardinghaus, Pogatki-Zahn, Zenz, and Osterbrink, 2010)

2.2.3 Types of Cancer Pain

Devita, Hellman and Rosenberg, 2008 described three types of cancer pain based on the pathophysiology the first being the somatic pain involving deep or cutaneous tissues e.g. metastatic bone pain, the second is visceral pain which involves the hollow organs due to infiltration, compression, extension or stretching, it is poorly localised and is usually associated with nausea, and vomiting. The third is neuropathic pain resulting from injury to the nerve tissue. These pains may be caused by tumor itself, treatment modalities or non-cancer related factors. One patient may experience more than one type of pain.

Figure 4: Model of Cancer Disease and Pain



(British pain society, 2013)

2.2.4 Classification of Patients with Cancer Pain

There are five types of cancer pain patients identified. (Devita, Hellman and Rosenberg). This shows the discrepancies between acute and chronic pain. The classification is important in deciding on specific therapeutic approach to the management of cancer patients. The table 1 below shows the classes

Table 1 Classification of Cancer Pain Patients (Devita, Hellman and Rosenberg)

S/ No.	Description			
1.	Group 1	Patients with acute cancer-related pain which is subdivided further based on aetiology.	Group 1a	tumor associated pain
			Group 1b	cancer therapy associated pain
2.	Group 2	patients with chronic cancer related pain	Group 2a	associated with tumor progression
			Group 2b	chronic pain associated with cancer therapy e.g surgery, radiotherapy or chemotherapy
3.	Group 3	Patients with pre-existing chronic pain and cancer related pain. E.g. psychological factors which need psychological evaluation and intervention.		
4.	Group 4	Patients with history of drug addiction and with cancer related pain. This group of patients may experience under-treatment with analgesics.	Group 4a	- those actively involved in illicit drug use and drug seeking behaviour
			Group 4b	those receiving methadone in a maintenance program
			Group 4c	those who have not used drug for several years
5.	Group 5	Dying patients with pain. In these patients all the therapeutic efforts are geared toward maintenance of comfort		

2.2.5 Common cancer pain syndromes

Three main common pain syndromes occurring in cancer patients have been identified. These are; cancer related acute pain syndromes, treatment-related chronic pain syndrome, and tumor-related chronic pain syndromes (Devita, Hellman and Rosenberg)

2.3 Principles of cancer pain management

Cancer pain management is very critical in cancer management since when cancer pain is inadequately controlled, several consequences results such as: - family worries, anxiety, depression, sleep depression, impaired ambulation, increased hospitalization and cost and medication worries. However, cancer pain like any other type of pain is very subjective. Pain perception is affected mainly by pain experience which in turn is influenced by: - age, attention, culture, sex/gender, pain control, and meaning of pain.

Cancer pain management has three component; 1. Pain assessment 2.Pain measurement 3.Pain treatment

2.3.1 Pain assessment

The assessment of cancer pain is the foundation of its management at all stages of the disease. The accurate and consistent self-reporting assessment of pain is the initial and most important step for an effective and customised pain treatment. The pain assessment is done using validated pain assessment tools. The tools frequently used as standardized scales are: visual analog scales (VAS), verbal rating scales (VRS), and numerical rating scale (NRS).

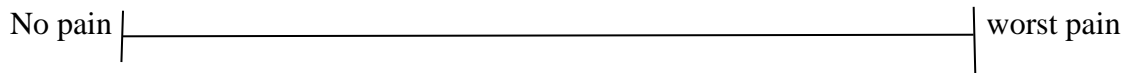
Self-pain reporting rate is affected by level of education of the patient with lower rates reported among those with lower education levels compared with those with above pre-university level. This is mainly attributed to poor communication skills among this population with the healthcare providers. (Simone, Vapiwala, Hampshire, and Melz, 2012)

Knowledge of mechanism and ability to identify the type of cancer the pain is the base of best practice in pain management. Comprehensive and significant assessment and reassessment of pain is critical and enhances pain relief. History, examination, psychosocial assessment, and proper record keeping should be routine, in addition to appropriate use of pain measurement tools. Figure 5 below illustrates the three validated pain assessment tools.

Figure 5: Validated Pain assessment/ Measurement tools.

(Ripamonti et al, 2011).

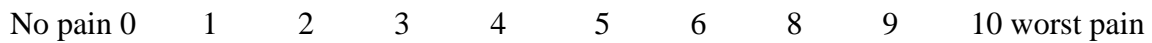
1. Visual analogue scale



e.g facial scales



2. Numerical rating scale



3. Verbal rating scale

- None 1
- Very mild 2
- Mild 3
- Moderate 4
- Severe 5
- Very severe 6

Several factors are more important to consider when developing a comprehensive strategy to pain control such as depression, presence of other comorbidities, enhancement of adequate social support particularly to those unresponsive to analgesic, and closer monitoring of pain. (Weng, Kroenke, Wu, Tu, Theobald, and Rawl, 2012)

2.3.2 Evaluation of cancer pain

Evaluation is a very critical stage of cancer pain management. It requires one to understand components of cancer pain holistically. It should be done with multidisciplinary approach.

W.H.O. in outlined 9 steps to be followed for one to achieve positive outcomes

1. Believing the patient's pain report.
2. Trigger patient for pain dialogue other than relying on spontaneous reports since the patient may choose not to report based on the pain perception.
3. Evaluating the intensity of pain, its impact on daily activities and effectiveness of the pain medications.
4. Comprehensive history taking on pain which gives information on: onset, provoking, quality, severity, relieving factors, understanding/perception, and aggravating factors. It may include secondary data for verification. Obtaining history of weakness and sensory dysfunction is very important.
5. Assessing the psychological state of the patient i.e. the level of anxiety and depression, suicidal ideations and extent of functional limitation.
6. Thorough physical examination in additional to comprehensive history taking to determine the cause of the cancer pain which lead to suitable management.
7. Carrying out essential investigations to establish the cause of pain.
8. Consider other methods of pain control apart from analgesics e.g palliative radiotherapy
9. Evaluate the outcome of the treatment using multidisciplinary approach.

2.3.3 Guidelines for a correct assessment of patient with pain.

(Ripamonti C I, et al, 2011).

1. Assess and reassess the pain
 - a) Cause, onset, type, duration, intensity, relief and temporal patterns of pain.
 - b) Trigger factors and signs and symptoms associated with the pain.
 - c) Use of analgesics and their efficacy and tolerability.
2. Assess and reassess the patient.
 - a) The clinical situation by means of a complete / specific physical examination and the specific radiological and / or biochemical investigations

- b) The presence of interference of pain with the patient's daily activities, work, social life, sleep pattern, appetite, sexual functioning, and mood.
 - c) The impact of disease and the therapy on the physical, psychological and social conditions.
 - d) The presence of a caregiver, the psychological status, the degree of awareness of disease, anxiety, depression and suicidal ideation, his/her social environment, quality of life, and spiritual concerns or needs.
 - e) The presence and intensity of signs, physical and/or emotional symptoms associated with cancer syndromes.
 - f) Functional status.
 - g) Presence of opiophobia.
3. Assess and reassess your ability to inform and communicate with the patient and the family.

Take time to spend with the patient and the family members to understand their needs.

2.3.4 Brief Pain Inventory (BPI) (Cleeland C, 1991)

This is tool which was developed with aim of evaluating cancer pain that would capture the severity and its impact on activities of living. It also measures the effects of analgesics practice and other pain treatments. It has been tested and retested extensively for reliability. It is a self-reporting questionnaire that measures the sensory i.e. severity and reactive dimension of pain i.e. interference with daily function and affect. It has four items to describe the variability of pain over time i.e. pain at its worst, least, average and current and the rating is based on NRS where the pain is described from zero to ten with zero presenting no Pin and ten worst pain imagined. In BPI is further categorized as 0 (no pain), 1 (1-3 mild pain), 2 (4-7, moderate pain), or 3 (8-10, severe pain). For reactive dimension the degree of interference was rated using percentage. Daily activities includes general activity, walking, work, mood, enjoyment of life, relation with others and sleep. To determine the pain management adequacy Cleeland constructed pain management indexes(PMI) based on the worst pain on the BPI categories, then the pain levels is subtracted from the most potent level of analgesic drug therapy as prescribed scored as 0(no analgesic drugs), 1 (non-opioid), 2 (weak opioid),or 3 (a strong opioid). The index can range from -3 (a patient with severe pain receiving no analgesic) to +3 (a patient with severe pain receiving strong opioid and

reporting pain). Negative score indicate inadequate orders for analgesic drugs and score 0 and higher are considered indicators of acceptable treatment.

2.3.5 Pain relief modalities/treatment

According to Ripamonti C I et al (2011) an effective pain relieving therapy should consider the following:

- 1) Enlighten the patients about pain and its management and involve them actively in their pain management.
- 2) Prophylactic use of analgesics, considering their pharmacokinetic and pharmacodynamics to ensure zero pain onset; prescribe analgesics for chronic pain regularly rather than PRN.
- 3) The therapy prescribed should be easy to administer and manage by both patient and the family members with oral route being of first choice if well tolerated.
- 4) An emergence/rescue analgesic dose should be prescribed for instant relief of breakthrough pain in additional to the regular analgesics which may be similar or different depending on its bioavailability, tolerability and efficacy.
- 5) The analgesic prescribed should be individualised in terms of dosage, and route of drug administration.
- 6) Contemplate substitute route of opioid administration in oral intolerance, severe cognitive impairment, or poor pain control.
- 7) Prevent and manage the possible opioid related adverse effects.

The care of patients with cancer pain requires a multidisciplinary approach to ensure holistic care. This may combine psychological support, sociocultural support, spiritual support, rehabilitation, and general pain management. This enhances performance of activities of daily living and consequently quality of life or of dying.

Physiotherapists and Occupational therapist play an essential role in the cancer pain management since they possess special skills which empower them to be patient focused and holistic. These therapist aim at enhancing patient functioning and quality of life though not on evidenced based way. (Raphael et al, 2010)

In addition to these therapies radiotherapy, chemotherapy, hormonal therapy, bisphosphonates and surgery are modalities mostly used in treat and palliate malignant.

Combination of these pharmacological and non-pharmacological pain control techniques maximises on the pain relief despite notable limitations. Celiac plexus neurolysis and

intrathecal drugs are some of the evidenced based effective ways of pain control though not part of W.H.O. analgesic ladder while complementary therapies are less effective through contribute to quality of life improvement. (Raphael et al, 2010). Safety is paramount in cancer management.

Generally, for effective and optimal cancer pain management, collaboration between the oncology medicine team, pain medicine team, and palliative medicine team is paramount.

2.3.6 Approaches to cancer pain management

According to W.H.O., 1996, there are 5 approaches to cancer pain management. These are: 1. Psychological approach which includes understanding, companionship and cognitive behavioural therapy, 2. Modification of pathological process approach which include radiotherapy, chemotherapy, hormonal therapy and surgery, 3. Drugs approach which includes analgesics, antidepressants, anticonvulsants, anxiolytics and neuroleptics. 4. Interruption of pain pathways including local anaesthesia, neurolytic agents, and neurosurgery, and 5. Modification of daily activities approach such as immobilization, rest, cervical collar or corset, plastic splints or slings, and orthopaedic surgery.

The W.H.O. has identified cancer pain as one of the global health concern and in 1986 came up with analgesic ladder designed to guide healthcare providers in the prescription of analgesic drugs. Generally it recommends a rational approach for managing pain in different situations including the cancer pain. It advocates for a stepped approach to the use of analgesics from different classes of analgesic such as; NSAIDS, weak opioids, strong opioids, and adjuvants. Adjuvants are not originally analgesics but have been found to be effective especially to neuropathic pain e.g. anticonvulsants.

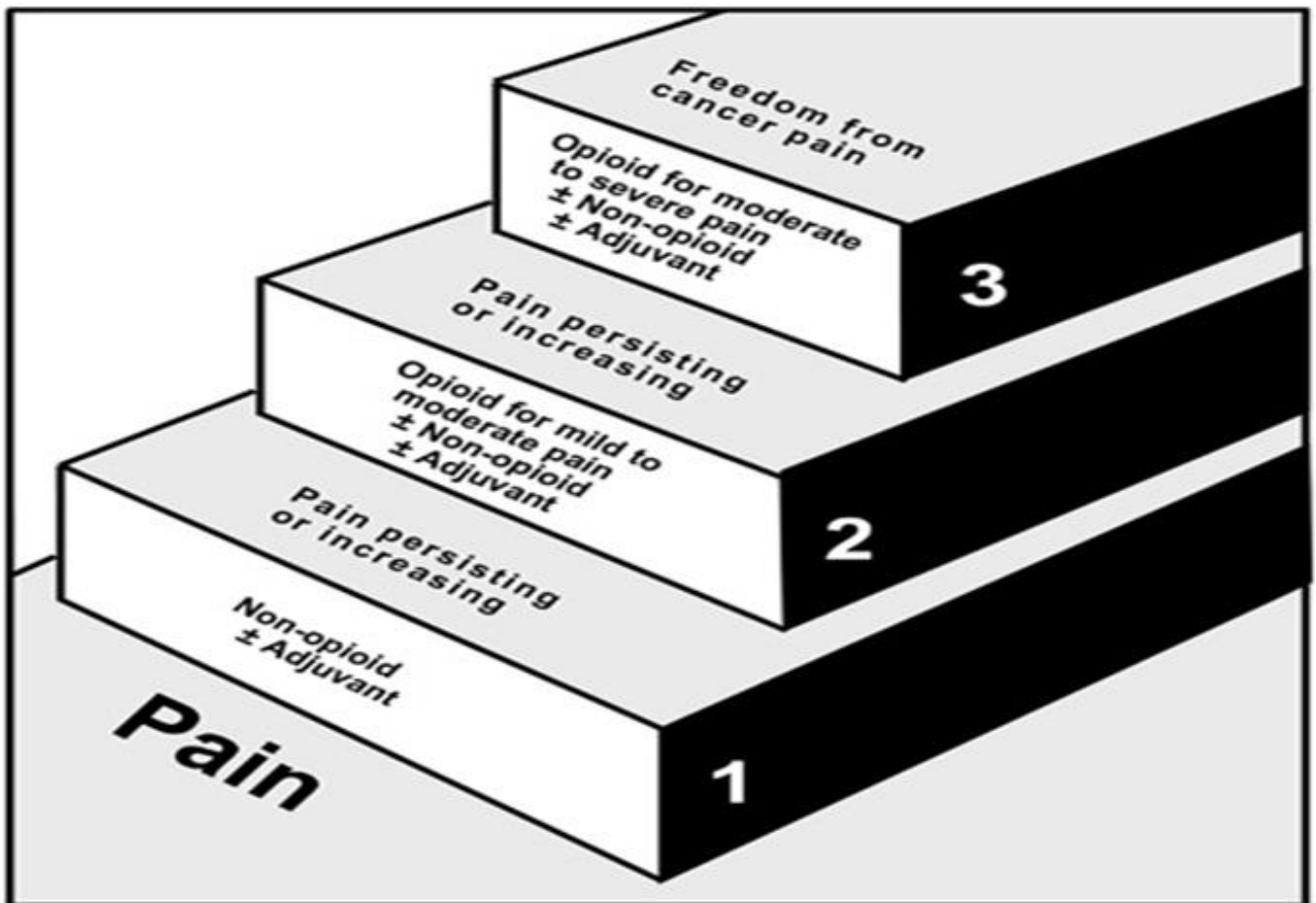
The ladder comprises of three steps and it suggests that at every step the non-opioid analgesic form the basis of pain management. This means that paracetamol and other NSAIDS should be combined with strong or weak opioid forming steps 2 and 3. This maximises on efficacy as it keeps the adverse effects low. Figure 6 below illustrates the W.H.O. analgesic ladder.

The three step ladder depends on severity of the pain i.e.

Step 1 mild pain	non-opioid, +/- adjuvants
Step 2 moderate pain	weak opioid, +/- non-opioids, +/- Adjuvants
Step 3 severe pain	strong opioid, +/- non-opioid, +/- Adjuvants

2.3.7 W.H.O. Analgesic Ladder

Figure 6: W.H.O. Analgesic Ladder
(W.H.O., 1996)



The W.H.O. strategy relies mainly on the opioids especially morphine however the role of the adjuvants is unclearly explained. It is effective from 45% to 100% of cases worldwide. Study done on relationship between patient satisfaction and pain control indicate that patient satisfaction does not depend on the pain intensity experienced rather depend on such factors as patients perception of effort to relief pain by health workers among others. (Phillip et al, 2013)

W.H.O. analgesic ladder has clear principle of regular “by the clock” i.e. taking oral medications 3-6 hourly rather than on demand. This has assisted cancer patients throughout the world, cost effectively. (Raphael et al, 2010)

W.H.O. recommends use of both pharmacological and non-pharmacological measures to treat cancer pain although analgesics are the main measures. Some pains are relieved by combining opioid and a non-opioid while other responds to combination of opioid and

corticosteroids. Neurotic pain responds poorly to analgesics and may require adjuvants such as neuroleptics. Most of the time cancer patients suffer from anxiety and depression therefore they may need suitable psychotropic in addition to analgesics for optimal pain relief.

Analgesics are relatively cost effective and reliefs pain in 70-90% of patients. (W.H.O., 1996)
For these analgesics to be this effective 5 principles must be observed: 1. by mouth i.e. oral route, 2.by the clock i.e. at fixed interval, 3. by the ladder i.e. guided WHO analgesic ladder, 4. for the individual i.e. customized/individualized, and 5. attention to details.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Study design

The study was hospital based cross sectional descriptive quantitative study aimed at exploring the cancer pain management practices and their effects on performance of activities of living. The study was conducted over one month.

3.2 Study area

The study was conducted at CTC i.e. oncology ward (GFD), radiotherapy clinic, and chemotherapy clinic (GFC) at Kenyatta National Hospital (KNH) Nairobi. KNH is the national referral hospital for oncology patient and the only government hospital offering holistic cancer treatment i.e. radiotherapy, chemotherapy and surgery.

3.3 Study Population

The study population was adult cancer patients admitted in the oncology ward (GFD), outpatients attending chemotherapy clinic (GFC) and Radiotherapy clinic.

3.4 Sample size determination

The sample size was determined using Fisher's formula (Mugenda and Mugenda, 2003)

$$nf = n / \{1 + (n/N)\}$$

$$n = Z^2pd/d^2$$

where

nf = desired sample size when population is less than 10,000.

n = desired sample size when population is more than 10,000.

N = estimate of population size. = no of patient in GFD for one month=75

Plus no. of patients attended at oncology clinic GFC= 284

=75+284=359 patients

(Health information statistic department, KNH, Dec 2013)

Z= standard normal distribution value for 95% confidence interval (1.96)

p = expected prevalence of cancer pain in patients on anticancer is not known therefore is assumed to be 50%

$$q = 1 - p$$

d = degree of freedom (0.05)

Therefore

$$n = (1.96 \times 1.96) \times 0.5(1 - 0.5) / (0.05 \times 0.05)$$

$$= 384.1$$

= approx. 384 patients

Since the population is less than 10,000 subjects (nf),

$$nf = n / 1 + (n/N)$$

$$\text{Therefore } nf = (384 / \{1 + (384/359)\})$$

$$= 384 / 1.07$$

$$= 384 / 2.07$$

$$= 186 \text{ patients}$$

3.5 Sampling technique

The maximum variation sampling which is a type of purposive sampling method was used focusing on the adult cancer patients on anticancer attended at KNH. The sample frame was obtained from KNH health information and statistic department. According to statistic of year 2013, an average of 284 Outpatients per month were reviewed at oncology clinic, GFC and average 75 inpatients per month at oncology ward, GFD. All the outpatients and inpatients who meet the criteria were interviewed until a desired sample size of 188 was achieved.

3.6 Inclusion and exclusion criteria

3.6.1 Inclusion criteria

The study participants met the following criterion:

- 1) 18 years of age and above.
- 2) Have been diagnosed with cancer by pathological examination.
- 3) Those who were on active anticancer treatment.
- 4) Consented to participate in the study.

3.6.2 Exclusion criteria

- 1) Those who were not on active anticancer treatment.

- 2) Those cancer patients who were in other wards rather than GFD and GFC
- 3) Those who did not consent.
- 4) Those who were not fully conscious.

3.7 Data collection

3.7.1 Study instrument

The data was collected for over one month. A structured questionnaire and Brief Pain Inventory (BPI) for patient and family based on numerical rating scale were used to collect data from the study participants. BPI was used to rate the severity of pain and its degree of interference with feelings and function. The questionnaires were administered and filled by the researcher assisted by two trained assistants.

3.7.2 Recruiting and training of research assistants/enumerators

Two graduate nurse interns were recruited to assist in data collection i.e. administration of the questionnaires to the study population, the selection was based on the fact that they have been trained on research methodology, importance of accuracy in data collection and entry, and ethical legal considerations in medical research.

The selected research assistants were subjected to two days of intensive training by the researcher. The main areas covered included: sampling criteria, how to obtain informed consent from the participants, interviewing skills, how to fill and complete the questionnaires, review of research ethics, how to handle the completed questionnaires and consent forms and how to carryout BPI and numerical rating scale as pain measurement tool.

3.7.3 Pretesting of research tool

The research tool was pretested at Defence Forces Memorial Hospital. It is a referral for the KDF with almost similar oncology set up as KNH. Adult oncology patients were recruited as pre-test population based on research ethical principles. The information obtained was tested for validity and reliability using Cronbach's Alpha ($P=0.000$). The filled questionnaires were stored under key and lock for in case of any clarity.

3.8 Data analysis and presentation

The data collected was cleaned, entered in MS Access and analysed using SPSS version 21.0 computer program. The data was described using descriptive statistics. Binary logistic regression was used to analyse the factors which predict the cancer pain controlled such as age, type of cancer, gender, cancer stage, cancer pain management practices and health financier. Pearson's correlation was used to determine the relationship between independent variables and dependent variables. All significant levels was referred to two sided tests. The confidence interval was set at 95% i.e. a $P \leq 0.05$ was considered significant. Data was presented using charts, graphs and tables.

The filled questionnaires and consent forms were packaged well and stored under safe custody i.e. under key as evidence that the data was actually collected, also for reference.

3.9 Ethical consideration

Authority to carryout research was sought from Kenyatta National Hospital and University of Nairobi / Ethics and Research Committee (KNH/UON -ERC) and KNH management.

The study was explained comprehensively to the participants, and this included the duration of the study, all what it entails, possible risks and benefits. During the study the research ethics principles were observed at all levels which included anonymity of subjects, confidentiality of information and results and participation was purely on voluntary basis. The participants were made to understand that choosing not to consent could not interfere with their cancer management in any way and also one was free to opt out at any level of the study without any penalties.

The participants were informed that the study was not to benefit them directly. It was to benefit the hospital and Kenya as a country since the findings were to be used to improve the palliative care practice and in policy making and evaluation. The study had minimal risk which was mainly psychological as the participants meditated on their ailment during interview. This was minimized by counselling the patient on what the study was all about, allowing them adequate time to express their concerns and referring them to the right personnel if necessary e.g. palliative care counsellor.

Only the participants who signed the consent form were included for the study.

3.10 Dissemination

The study results will be disseminated to KNH, the university of Nairobi library for reference, and submitted for publication in peer reviewed journals.

3.11 Study Limitation

The study relied on respondents' subjective pain perception and was limited to participants who are aged 18 years and above.

The study findings were limited by the cross-section study design that did not allow examination of effects of pain management practices over time.

Only those who could afford the services were available for the study thus those who could not afford were left out.

CHAPTER 4: RESULTS

The aim of this study was to determine the cancer pain practices and its effects on performance of the activities of living among the adult cancer patients/clients. This study was conducted among cancer patients on anticancer therapy; chemotherapy and radiotherapy at Kenyatta National Hospital (KNH) Cancer Treatment Centre (CTC). A total of 188 adult patients were non-randomly recruited to participate in the study. The results are as presented in the sections below:-

4.1 Social Demographic Characteristics

The social demographics which included: age, gender, marital status, religion, educational level and the source of income, of the study participants are illustrated in Table 2 and described as follows:

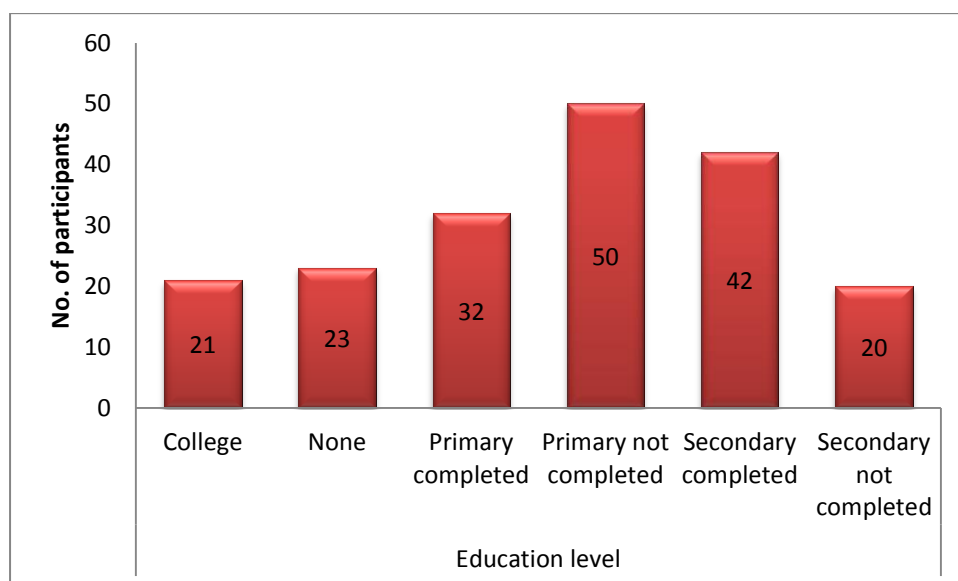
4.1.1 Gender

Out of 188 participants 60.6% (114) were female participants and 39.4% (74) were male participants as shown in the Table 2 below:

4.1.2 Level of Education

The majority 50% (115) of the participants had not completed primary education while 11.7% (22) had no formal education as shown in the Fig. 7 and Table 2 below:

Figure 7: Education Level



4.1.3 Marital status

The majority of the participants were married 71.8% (135) and 12.2% (23) were widowed.

4.1.4 Religion

A higher proportion of the participants professed Christian faith 93.1% (175) while 8% (8) were Muslims and 5% (5).

4.1.5 Source of income

On the source of income the majority of the participants were on self-employment 69.1% (130) with 11.2% (21) unemployed and students were 2.1% (4).

Table 2: Social Demographics Characteristics of the Study Participants

		n	%
Gender	Female	114	60.6%
	Male	74	39.4%
Education level	College	21	11.2%
	None	22	11.7%
	Others	1	0.5%
	Primary completed	32	17.0%
	Primary not completed	50	26.6%
	Secondary completed	42	22.3%
	Secondary not completed	20	10.6%
Marital status	Divorced	4	2.1%
	Married	135	71.8%
	Separated	13	6.9%
	Single	13	6.9%
	Widowed	23	12.2%
Religion	Christian	175	93.1%
	Muslim	8	4.3%
	Others	5	2.7%
Source of Income	Formal employment	32	17.0%
	Others	1	0.5%
	Self-employment	130	69.1%

	Student	4	2.1%
	Unemployed	21	11.2%

4.1.6 Age of participants

The mean age of the participants was 50 years (SD13.0) and median =50years.The patients age ranged from 18 years to 94 years.

4.2 Mode of Hospital Bill Payment

The majority, 69.7% (131) of the participants were paying their own hospital bill while only 17.6% (33) were insurance cover and 12.8% as tabulated in Table 3 below:

Table 3: Mode of Hospital Bill Payment

	Mode of payment	n	%
Who to pay the hospital Bill	Insurance	33	17.6%
	Others	24	12.8%
	Self	131	69.7%

4.3 History of the Disease

These include: type of primary cancer, duration since diagnosis of disease, stage of the disease, and cancer treatment or therapy

4.3.1 Types of Primary Cancer

The majority 23.9% (45) of participants suffered from head and neck carcinoma followed breast cancer 20.2% (38) as illustrated in Table 4 below. About Seventy percent (132) of these participants knew the stage of their disease with the majority 37.8% (71) being in stage II as shown in Table 4.

Table 4: Characteristics of Disease history of the participants

		n	%
Type of primary Cancer	Bone	6	3.2%
	Breast	38	20.2%
	Cervical	28	14.9%
	Colorectal	23	12.2%
	Head and neck	45	23.9%
	Lung	7	3.7%
	Other	22	11.7%
	Ovarian	5	2.7%
	Prostrate	14	7.4%
knowledge of disease Stage	No	56	29.8%
	Yes	132	70.2%
Disease Stage	Not known	56	29.8%
	I	26	13.8%
	II	71	37.8%
	III	31	16.5%
	IV	4	2.1%

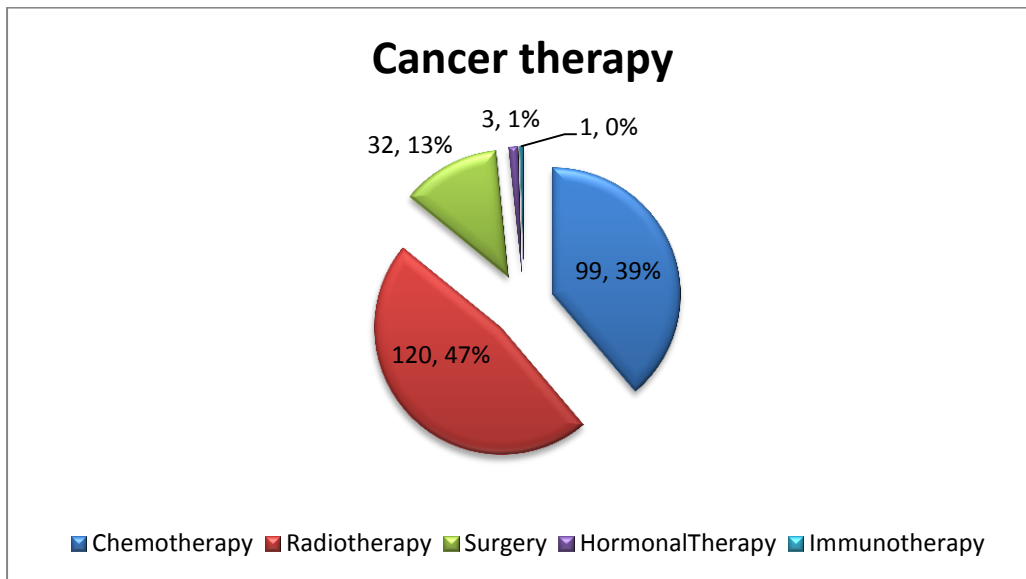
4.3.2 Duration since Diagnosis

The participants had lived with the disease for a duration ranging from 1 month to 120 months with a mean of 20 months (SD=19).

4.3.3 Cancer Treatment

The majority 47% (120) of the participants were on radiotherapy followed by chemotherapy as shown in Figure 8:

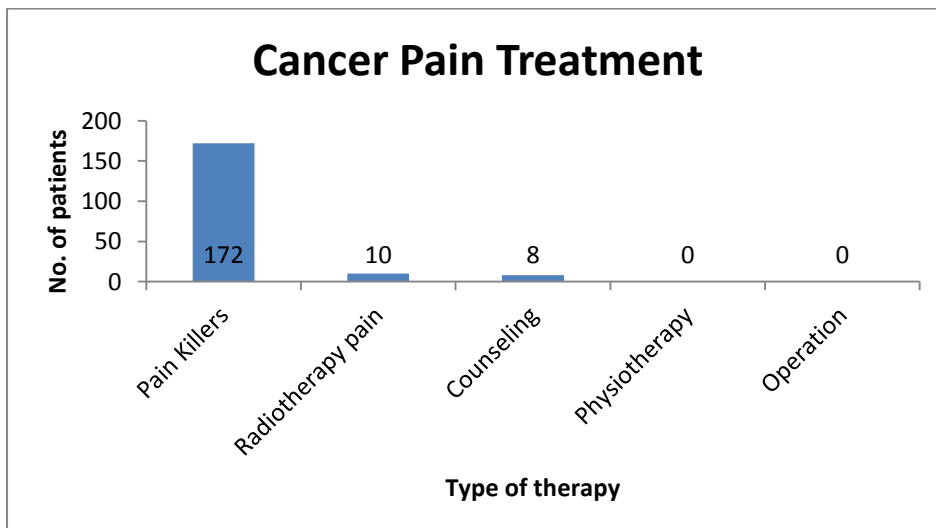
Figure 8: Participants' Cancer Treatment Modalities



4.3.4 Cancer Pain Management

All participants experienced pain episodes and they were on various pain management methods with the majority 91.5% (172) being on the pain killers which were mainly on None Steroidal Anti-inflammatory Drugs (NSAID), as shown in Figure 9.

Figure 9: Modality of Pain Management



4.3.5 Commonly Used Analgesics

Most, 92.6% (172) of the participants experienced pain and used pain killers to manage this pain. For those respondents on painkillers the majority reported using None Steroidal Anti-inflammatory Drugs (NSAID) (120) only while 6% (11) were on a combination of NSAID

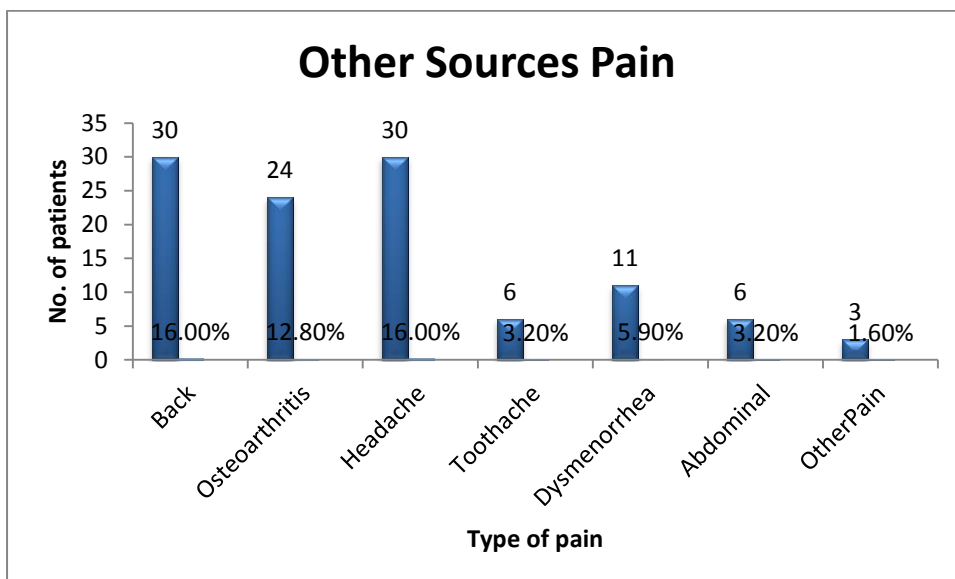
and opioid mainly dihydrocodeine (DF118) which is a weak opioid and 2.1% (4) were on morphine which is a strong opioid. Although only 10.6% (20) of participants were on the rescue/emergency painkillers, 81.9% (154) reported being satisfied with the pain treatment they were receiving.

The majority 62.8% (118) of these participants on painkillers reported taking them regularly while 31.9% (60) were taking them only while on pain. The majority 88.3% (166) of participants reported the pain promptly.

4.3.6 Types of Pain Experienced before Cancer Diagnosis

Less than half 47.9% (90) of the participants experienced pain before the cancer diagnoses was made with the majority 32.0% (60) experiencing back pains (lumbago) as shown in Fig.10.

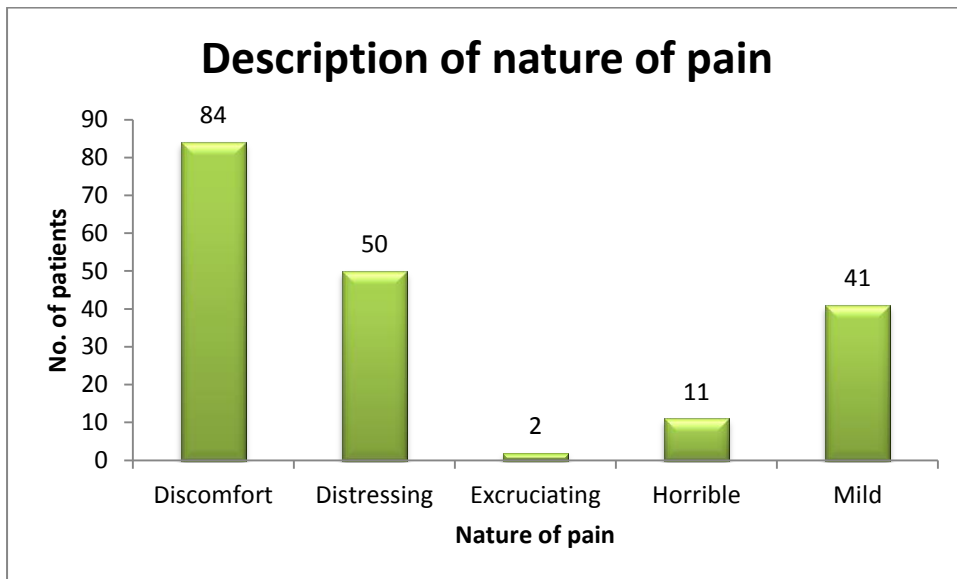
Figure 10: Pains Experienced before Cancer Diagnosis



4.3.7 Nature of Pain as Described by the Participants

The participants reported different description of nature of pain they were feeling. Most of the participants 44.7% (84) described nature of pain as discomfort as shown in Fig. 11.

Figure 11: Self-Description of Nature of Pain



4.4 Basic pain inventory

All the respondents reported having experienced pain episodes within 24 hours immediately preceding time of interview.

4.4.1 Amount of Pain Experienced Based on Numerical Rating Scale (NRS)

At the time of interview the respondents reported having experienced different rates of pain. The rating was based on NRS (0 to 10) with 0(zero) being no pain and 10(ten) being the worst pain experienced. The majority 21.8% (41) had pain at scale 3, while 8.0% (15) had no pain (scale 0). The respondents experienced least pain at different scales with the largest number 25.5% (48) reporting pain at scale 2 and 3 in equal proportion. In addition for the average pain felt within the 24hrs, the majority 21.8% (41) reported pain at scale 5 as illustrated in Fig 12 below.

The majority 90% (160) of the participants had moderate (NRS score 4-7) 65% (112) to severe pain (NRS score 8-10) 25% (48) as the worst pain reported as shown in Fig.13 below:

Figure 12: Scale of Pain Experienced in 24 hours

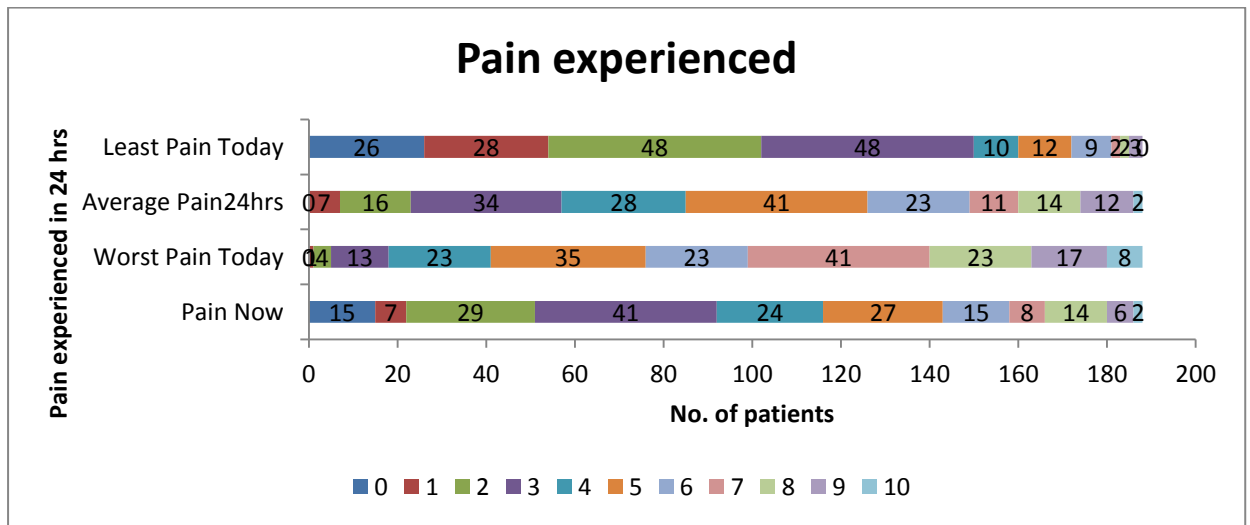
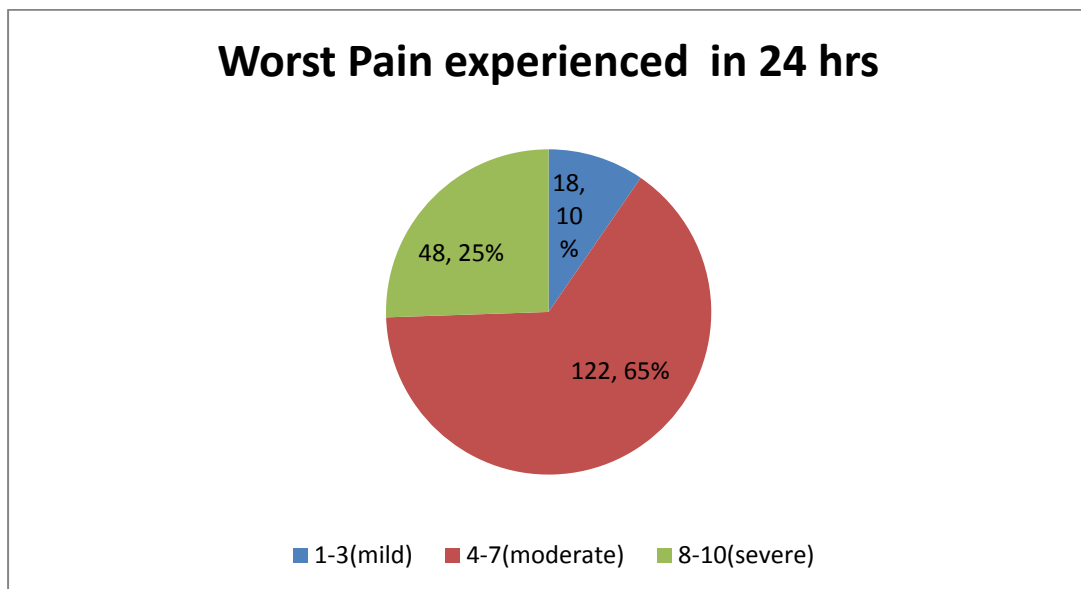


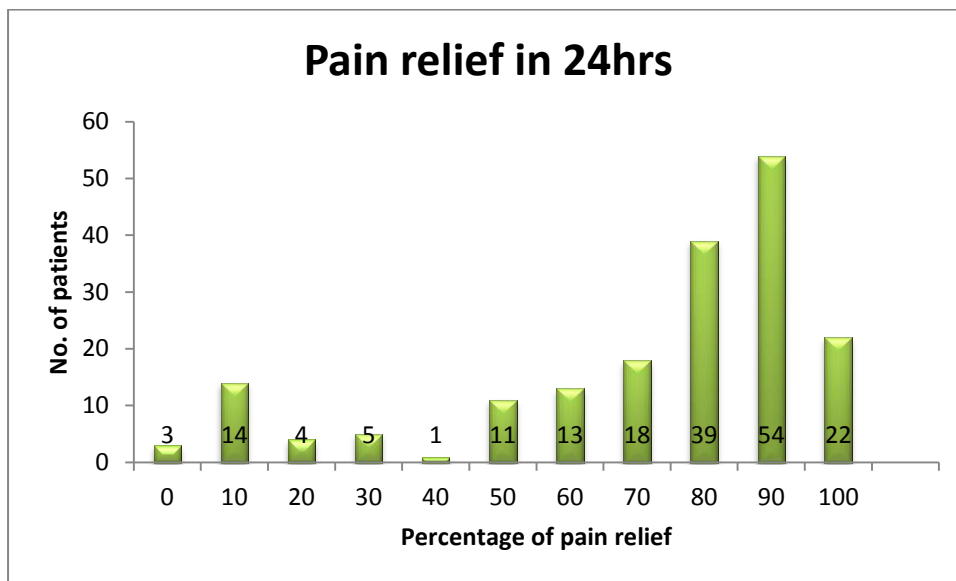
Figure 13: Description of Worst Pain Experienced within 24 Hours Immediately Preceding Interview Based on Numerical Rating Scale (0 to 10)



4.4.2 Reported Pain Relief in 24 Hours

About two percent (3) of participants had no pain relief at all despite the pain therapy (pain relief mean=71.43, SD=27.171) as shown in the Fig 14 below.

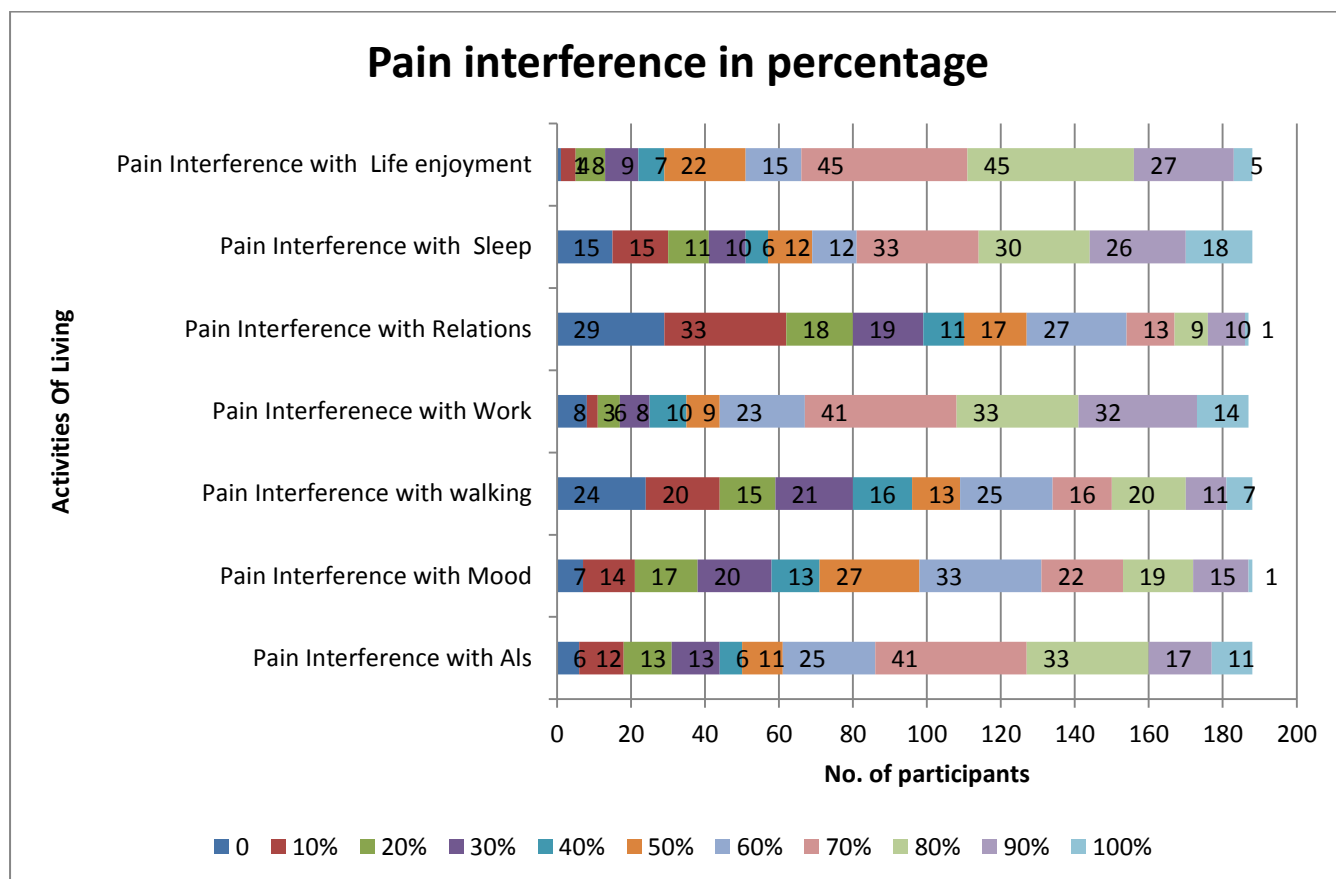
Figure 14: Participants' Pain Relief in Percentage in 24 Hours



4.4.3 Pain Interference with Activities of Living in 24 Hours

Cancer pain was reported to interfere with the performance of activities of living which was reported in 96.8% (182) of the respondent with 5.9% (11) reporting 100% interference as illustrated in Figure 15 below

Figure 15: Extent of Interference of Pain with Activities of Living



4.5 Utilization of the Drug of Abuse

4.5.1 Utilization of Drug of Abuse before and after the Diagnosis of the Disease

The majority 92.0% (173) of participants were not using the drugs of abuse although 62.2% (117) had history of using drugs of abuse. Alcohol was the most used drug of abuse before the diagnosis of the disease and during the disease followed by cigarette smoking as shown in Tables 5 and 6.

Table 5: Utilization of Drug of Abuse after Cancer Diagnosis

	n	%
Alcohol	12	6.4%
Bang	0	0.0%
Miraa	1	0.5%
Cocaine	0	0.0%
Morphine	0	0.0%
Cigarette	8	4.3%
Other Drugs	0	0.0%

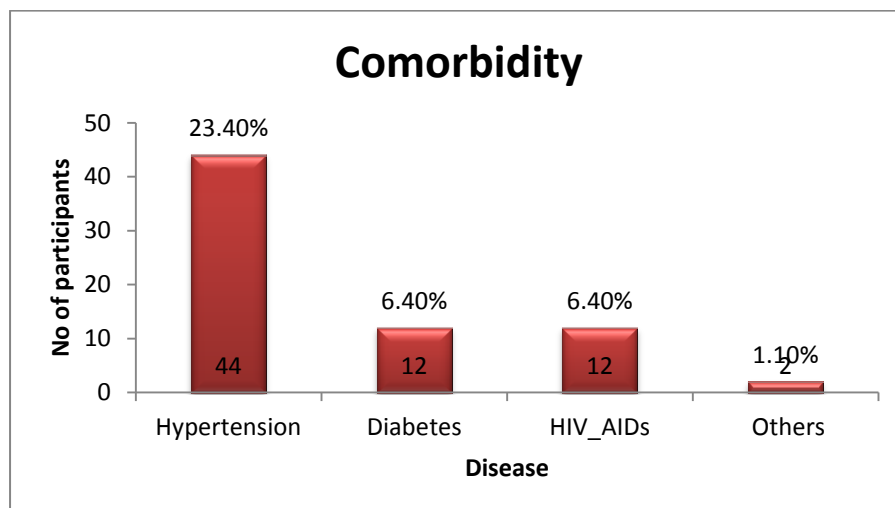
Table 6 Utilization of Drug of Abuse before Cancer Diagnosis

	n	%
Alcohol	58	30.9%
Bang	1	0.5%
Miraa	6	3.2%
Cocaine	0	0.0%
Morphine	0	0.0%
Cigarette	25	13.3%
Other Drugs	4	2.1%

4.6 Cancer and Comorbidity

The participants who reported suffering from other chronic diseases were 33.5% (63) with the majority reporting suffering from hypertension 23.4% (44) as illustrated in Fig 16

Figure 16: Participants with comorbidities



4.7 Relationship between Selected Variables and Pain Relief in 24 Hours

Various variables were tested for their correlation with pain relief which was the dependent variable using Pearson's and regression correlation.

4.7.1 Relationship between Pain Relief and Interference of Pain with Activities of Living

The degree of pain relief determined the interference with the activities of living, walking, mood, normal working, relation with other people, and enjoyment of life. There was a negative relationship between pain relief in 24 hours and the percentage of the pain interference ($P \leq 0.05$, negative r values). However relationship between pain relief and pain

interference with sleep is statistically insignificant (P value = 0.201) as illustrated in Table 7 below.

Table 7: Relationship between the Pain Relief in 24 hours and pain Interference with Activities of Living using Pearson correlation

		Relief 24hrs	Pain Interference with ALs	Pain Interference with Mood	Pain Interference with walking	Pain Interference with Work	Pain Interference with Relations	Pain Interference with Sleep	Pain Interference with Life enjoyment
Pearson Correlation (r)	Pain Relief in 24hrs	1.000	-.200	-.202	-.260	-.281	-.384	-.062	-.250
	Pain Interference with activity of Living	-.200	1.000	.624	.540	.773	.384	.466	.591
	Pain Interference with Mood	-.202	.624	1.000	.468	.553	.568	.317	.518
	Pain Interference with walking	-.260	.540	.468	1.000	.613	.492	.409	.531
	Pain Interference with normal Work	-.281	.773	.553	.613	1.000	.484	.423	.609
	Pain Interference with Relations	-.384	.384	.568	.492	.484	1.000	.141	.468
	Pain Interference with Sleep	-.062	.466	.317	.409	.423	.141	1.000	.574
	Pain Interference with enjoyment of Life	-.250	.591	.518	.531	.609	.468	.574	1.000

P values	Pain Relief in 24hrs	.	.003	.003	.000	.000	.000	.201	.000
	Pain Interference with ALs	.003*	.	.000	.000	.000	.000	.000	.000
	Pain Interference with Mood	.003*	.000	.	.000	.000	.000	.000	.000
	Pain Interference with walking	.000*	.000	.000	.	.000	.000	.000	.000
	Pain Interference with normal work	.000*	.000	.000	.000	.	.000	.000	.000
	Pain Interference with Relations	.000*	.000	.000	.000	.000	.	.029*	.000
	Pain Interference with Sleep	.201	.000	.000	.000	.000	.029*	.	.000
	Pain Interference with enjoyment of Life	.000*	.000	.000	.000	.000	.000	.000	.

* Correlation is significant at the 0.05 level (2-tailed)

Interference with relations with other people was found to predict the degree of pain relief (P= 0.001) as illustrated in Table 8.

Table 8: Factors associated with pain relief

	Coefficients		t	P value	95.0% Confidence Interval for B	
	B	Std. Error			Lower Bound	Upper Bound
(Constant)	92.135	6.563	14.039	.000	79.182	105.088
Pain Interference with ALS	.016	.124	.126	.900	-.228	.260
Pain Interference with Mood	.098	.107	.911	.364	-.114	.309
Pain Interference with walking	-.051	.085	-.602	.548	-.218	.116
Pain Interference with Work	-.140	.131	-1.074	.284	-.398	.118
Pain Interference with Relations with others	-.304	.090	-3.380	.001*	-.481	-.126
Pain Interference with Sleep	.067	.077	.879	.380	-.084	.219
Pain Interference with Life enjoyment	-.118	.132	-.899	.370	-.378	.141

a. Dependent Variable: Pain Relief in 24hrs

* Correlation is significant at the 0.05 level (2-tailed).

4.7.2 Relationship between Social demographics, Mode of Hospital Bill Payment, Type of Primary Cancer and Stage of the Disease and Pain Relief within 24 hours

Social demographics (education of level, marital status, religion, source of Income) and mode of payment of medical Bill was statistically insignificant in relation to pain relief ($P \leq 0.05$) as shown in Table p:

Six (prostrate, bone, breast, colorectal and head and neck cancer) out eight type of primary cancer (bone, breast, cervical, colorectal, head and neck, lung, prostrate and ovarian cancer) reported over 70% pain relief with colorectal in the lead. Those with Cervical cancer had least pain relief as illustrated in Table 9.

People in stage 3 reported highest pain relief Mean=79% and those in stage 4 reported the least pain relief Mean=58% as illustrated in Table 9:

Table 9: Relationship between Selected Variables and Pain Relief in 24 Hrs Using Pearson’s Correlations

		Pain Relief in 24hrs				P value
		N	Mean	Median	Standard Deviation	
Education level	Primary and below	103	69	80	30	0.103
	Above primary	81	75	80	23	
Marital status	Not married	51	74	80	22	0.442
	Married	133	71	80	29	
Religion	Christian	171	72	80	27	0.742
	Non-Christian	13	69	80	31	
Source of Income	Employed	158	70	80	28	0.105
	Unemployed	26	80	85	19	
Payment of medical Bill	Self	127	69	80	29	0.163
	Insurance	33	75	80	23	
	Other	24	80	80	16	
Type of Cancer	Bone	6	72	75	15	0.840
	Breast	38	71	80	26	
	Cervical	25	66	80	31	
	Colorectal	23	78	90	23	
	Head and neck	45	74	90	28	
	Lung	7	67	80	36	
	Other	22	66	80	33	
	Ovarian	5	76	90	19	
	Prostrate	13	72	80	19	
Stage of Disease	I	26	73	85	28	0.364
	II	69	73	80	25	
	III	31	79	80	23	
	IV	4	58	70	33	

a. Dependent Variable: Pain Relief in 24hrs

* Correlation is significant at the 0.05 level (2-tailed).

4.7.3 Relationship between Pain Relief in 24 Hours and Reported Satisfaction with cancer pain treatment.

There was significant relationship between the reported satisfaction and pain relief ($p < 0.0001$) as illustrated below in table 10.

Table 10: Pearson’s correlations between Satisfaction and Degree of Pain Relief

		Pain Relief in 24hrs				P value
		N	Mean	Median	Standard Deviation	
Relief Satisfaction	Dissatisfied	33	47	50	29	<0.0001*
	Satisfied	151	77	80	23	

a. Dependent Variable: Pain Relief in 24hrs

* Correlation is significant at the 0.05 level (2-tailed)

4.7.4 Relationship Between Pain Relief in 24 Hours and use of Emergency Pain Killer

There was no statistically significant relationship between pain relief in 24 hours and use of emergency painkiller ($p= 0.5$). However average pain relief on those on emergency pain killer had Mean=77 while those not on any emergency analgesic had mean=71.

4.7.5 Relationship between Pain Relief in 24 Hours and Use of Specific Pain Killers

On the mode of pain management the differences in pain relief did not appear statistically significant different ($P=0.182$), however some drugs appear to do better than others e.g. chemotherapy (Mean=85%) and radiotherapy (Mean=90%) as tabulated below table 11:

Table 11: Relationship between Pain Relief and Specific Pain Killers Using Pearson Correlations

		Pain Relief in 24hrs			P value
		Mean	Median	Standard Deviation	
Pain Killers Use	Chemotherapy	85	85	7	0.182
	DF118	79	80	19	
	Don't know	63	70	34	
	Gabapentin	70	70	.	
	Morphine	68	85	39	
	Morphine and NSAID	30	30	.	
	NSAID	72	80	26	
	NSAID and Chemotherapy	90	90	.	
	NSAID and DF118	80	80	18	
	NSAID and Tramadol	10	10	.	
	Radiotherapy	90	90	.	
	Tramadol	10	10	.	

4.7.6 Relationship between Pain Relief and Comorbidity Using Pearson Correlations

There was a trend for those who had pain before the disease e.g. those with back pain reported less pain relief ($p=0.063$) than those who had Osteoarthritis, Headache, Toothache, Dysmenorrhea, and Abdominal pain, followed by those with dysmenorrhea ($p=0.200$).as illustrated in table 12:

Table 12: Relationship between Other Source of Pain and Pain Control in 24 Hours Using Pearson Correlation

		Pain Relief in 24hrs				P value
		n	Mean	Median	Standard Deviation	
Back	0	156	73	80	26	0.063
	1	28	63	70	32	
Osteoarthritis	0	161	71	80	28	0.609
	1	23	74	80	24	
Headache	0	154	71	80	28	0.374
	1	30	76	80	24	
Toothache	0	178	72	80	27	0.447
	1	6	63	70	31	
Dysmenorrhea	0	173	71	80	28	0.200
	1	11	82	90	13	
Abdominal	0	178	72	80	27	0.447
	1	6	63	85	38	

a. Dependent Variable: Pain Relief in 24hrs

* Correlation is significant at the 0.05 level (2-tailed).

4.7.7 Relationship between Pain Relief and Utilization of Drug of Abuse Using Pearson Correlation

Although it appears that people who take alcohol, Miraa, and cigarette report better pain relief this is not statistically significant as illustrated in Table 13 below:

Table 13: Relationship between pain relief and Present Use of Drug of Abuse Using Pearson Correlations

		Pain Relief in 24hrs				P value
		n	Mean	Median	Standard Deviation	
Alcohol	0	172	71	80	28	0.122
	1	12	83	80	9	
Miraa	0	183	72	80	27	0.498
	1	1	90	90	.	
Cigarette	0	176	72	80	27	0.822
	1	8	74	80	24	

a. Dependent Variable: Pain Relief in 24hrs

* Correlation is significant at the 0.05 level (2-tailed).

4.7.8 Relationship between Pain Relief and Past Use of Drug of Abuse Using Pearson Correlations

Patients with history of bang use before the disease reported extremely low pain relief (10 v.s. 72, $p=0.022$). Although a similar trend was observed for the other drugs the results were not statistically significant as illustrated Table 14.

Table 14: Relationship between Pain Relief and Past Drug of Abuse Use Using Pearson Correlation

		Pain Relief in 24hrs				P value
		N	Mean	Median	Standard Deviation	
Alcohol	0	127	72	80	27	0.940
	1	57	71	80	27	
Bang	0	183	72	80	27	0.022*
	1	1	10	10	.	
Miraa	0	178	72	80	27	0.763
	1	6	68	85	33	
Cigarette	0	159	71	80	27	0.387
	1	25	76	80	26	

a. Dependent Variable: Pain Relief in 24hrs

* Correlation is significant at the 0.05 level (2-tailed).

4.7.9 Relationship between Pain Relief and Age of the Participants and Duration of the Disease Using Pearson Correlation

There is no relationship between relief and either age or duration with disease. However, older people are more likely to have the disease for a longer period as expected ($R=0.160$, $p=0.029$) as illustrated below in Table 15.

Table 15: Relationship between the Selected Variables and Pain Relief in 24 Hours Pearson Correlation

Correlations				
		Age	Pain Relief in 24 hrs	Duration With Disease
Age	Pearson Correlation(r)	1	-.042	0.160*
	P value		.567	0.029*
	N	188	184	186
Pain Relief in 24 hours	Pearson Correlation (r)	-.042	1	0.069
	P value	.567		0.358
	N	184	184	182
Duration with Disease	Pearson Correlation (r)	.160*	.069	1
	P value	.029*	.358	
	N	186	182	186

* Correlation is significant at the 0.05 level (2-tailed).

a. Dependent Variable: Pain Relief in 24hrs

4.8 Relationship between Selected Variables and Worst Pain Reported

Relationship between the Worst pain reported in 24 hours and selected variables was correlated using Pearson and regression correlation.

4.8.1 Relationship between Worst Pain Reported and Satisfaction Reported Using Regression Correlation

Those who reported satisfaction had lower average worst pain than those who were dissatisfied (6.97 vs5.97) and was statistically significant ($p=0.008$, $F=7.197$)

Table 16: Relationship between Satisfaction and Worst Pain Score Reported Using Regression Correlation

	n	Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum	F	P value
				Lower Bound	Upper Bound				
Dissatisfied	34	6.97	1.930	6.30	7.64	3	10	7.197	0.008*
Satisfied	154	5.97	1.967	5.66	6.29	1	10		
Total	188	6.15	1.993	5.87	6.44	1	10		

* Correlation is significant at the 0.05 level (2-tailed).

4.8.2 Relationship Between Nature of Pain and Worst Pain Reported in 24 hours

There was statistically significant relationship between the reported description of the nature of pain with the worst pain ($p=0.0000$, $F=98.102$) and the mean scale of worst pain increased with the severity of the nature of pain i.e. from mild to excruciating as illustrated in Table 17.

There was a moderate relationship between the Worst pain reported and the described nature of pain as shown in Table 18.

Table 17: Relationship between nature of pain and worst pain reported in 24 hours using regression correlation

Nature of pain	n	Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum	F	P value
				Lower Bound	Upper Bound				
Mild	41	4.34	1.741	3.79	4.89	1	9	98.102	0.0000*
Discomfort	84	6.13	1.656	5.77	6.49	3	10		
Distressing	50	6.96	1.551	6.52	7.40	4	10		
Horrible	11	8.82	.874	8.23	9.41	7	10		
Excruciating	2	9.50	.707	3.15	15.85	9	10		

* Correlation is significant at the 0.05 level (2-tailed).

Table 18: Relationship between Reported Worst Pain and the Described Nature of Pain Using Pearson correlations

		Worst Pain Today	PainRightNow2
Worst Pain Today	Pearson Correlation (r)	1	.588
	Sig. (2-tailed)		.000*
	N	188	188
Pain right now	Pearson correlation (r)	.588	1
	Sig. (2 tailed)	.000	
	N	188	188

**** Correlation is significant at the 0.01 level (2-tailed).**

CHAPTER 5: DISCUSSION, CONCLUSION, AND RECOMMENDATION.

6.1 Discussion

The study objective was to describe the pain management practices, and their effect on performance of activity of living in adult cancer patients attending cancer centre at KNH. All the patients reported having experienced pain at varying degree and the majority had severe pain which impaired normal function despite the pain treatment. In this study the majority 90% (170) had moderate to severe pain based on Numerical Rating Scale. The study showed that the majority 92.6% (174) of these patients were on pain treatment. Overall, the results showed that the cancer patient at KNH experience cancer pain which interferes with the performance of ALs, this cancer pain is relieved to varying degrees and majority reported being satisfied with the pain treatment.

The study showed that the most common mode of cancer pain treatment used by the patient was the NSAID mainly the diclofenac and paracetamol with only a few on opioid. Although specific pain killer was not statistically significant in determining pain relief, radiotherapy seemed to be the most effective with average pain relief of 90% similar to combination of chemotherapy with NSAID (Mean=90% pain relief). In contrast to other studies and W.H.O. recommendations, the patients on morphine though used by few patients had only 68% average pain relief (WHO, 1999). This could be due to the dose used which was not determined in this study and consistence considering the majority of the patients were outpatients residing far from the hospital. In addition the analgesic should as much as possible follow the five principle i.e 'by the mouth' 'by the clock' 'by the ladder' 'for the individual' and 'attention to details' which were not determined in this study (W.H.O 1996). The Most clinical setting especially in developed countries prefer opioids sustained release tablets for cancer pain, however such drugs are very expensive adding to the financial burden. In addition, only a small number 1% of the patients was on adjuvants drugs for pain. Pain killers only gave an average of 72% (S.D = 26) pain relief.

The type of cancer therapy determine the degree of pain relief according to this study with those on chemotherapy and surgery giving statistically significant pain relief ($p=0.054$) which was in line with the study done at Beijing by Ping Y et al, 2012). Immunotherapy was associated with the least pain relief; hormonal therapy and radiotherapy were statistically insignificant in relation to pain relief.

Different primary cancers had different average pain relief although this was statistically insignificant ($p=0.840$). The patients with cervical cancer and lung cancer had the lowest level of pain relief i.e. less than 70%. Patients with lung cancer experience cancer pain frequently than those with other types of cancer (Ping Y et al, 2012) and therefore they require more attention.

This study demonstrated that the patients who were on stage three of the disease had the highest pain relief compared with stages I, II, and IV. However those who had stage four diseases had the lowest pain relief which could be associated with the metastasis. This was similar to study done by Ping Y et al, 2012 in Beijing which showed a significant relationship between pain relief and cancer stage. The participants those with stage one disease had average pain relief of 73% this could be attributed to the effectiveness of cancer therapy on the localised tumour.

The correlations of the type of cancer therapy and pain relief demonstrated that those patients on chemotherapy and surgery got pain relief ($p=0.0054$, $p=0.054$). Ping Y et al, (2012) study demonstrated that chemotherapy is one of the predictor of pain controlled. It is clear from this study that chemotherapy and surgery leads to pain relief thus improves the performance of ALs and generally QoL of cancer patients.

The patients who were satisfied with the pain treatment reported lower pain score on Worst pain experienced in 24 hours while those who reported dissatisfied reported high score (6.97 v.s. 5.97, $P=0.008$, $F=7.197$). Panteli V et al, (2014), pointed that low pain relief resulted into low levels of satisfaction of pain management. However, according to Ping Y at el, (2012) patients in pain are satisfied with their pain management regardless of the actual pain relief. This could be attributed to adequate perceived pain management practices than by pain relief itself. There was positive correlation between Worst pain reported and the described nature of pain. The study found that higher the Worst pain score the severe the nature of pain was described. ($F=7.197$, $P<0.0001$, $r =.588$). The majority described it as discomfort.

This study like previous studies (Ping Y at el, 2012, Di Deng et al, 2011; Mathews, Tajeda, Johnson, Berbaum, and Manfredi, 2013), demonstrated that the interference with normal function is reciprocal to pain relief i.e. the higher the degree of pain relief the less the interference with ALs. There was a reciprocal relationship between cancer pain and QoL, i.e.

they may aggravate each other resulting into vicious cycle between them. From this study it was clear cancer pain interferes with; the performance of ALs, mood, walking, carrying out normal work, relations and enjoyment in life significantly. However interference with sleep was not significant which could be due to the perception of illness and pain management practices i.e. the feeling of satisfaction reduces emotional stress leading to relaxation of mind. Interference with relation was found to be a predictor of pain relief ($p=0.001$, $t=-3.380$).

Mitigating factors (drug of abuse use, marital status, hospital financier, age, gender, type of primary cancer, education level, duration of illness) were tested for their influence relationship between the pain management practices and pain relief. Drugs of abuse use was statistically significant among those who had history of taking *Cannabis Sativa* (Bhang) prior to disease ($p= 0.002$) with average of 10% pain relief. This could be attributed to tolerance since cannabinoids are known to relief cancer symptoms such as pain and nausea. Researchers recommend for more research on therapeutic use of cannabis (Susannah K et al, 2014, Bar- Sela G et al, 2014). Those who were former cigarette smokers had highest pain relief average of 76% $p=0.387$. Study done by Ditre, Gonzalez, Simmons, Faul, Brandson, and Jacobsen, (2012) suggested that continued smoking regardless of cancer diagnosis was associated with rise in pain and amplified interference from pain and further added that pain may be a potent motivator of pain. Tobacco smoke is associated with increase in pain since it (nicotine) reduces blood and oxygen flow to peripheral tissues or through direct influence on the neurological processing of sensory information.

In this study gender, marital status and level of education were not statistically significant in determination of the degree of pain relief one got which is in line with study done by Deandrea et al (2012). This is contrary to findings done by Morgan et al (2011), which demonstrated that partner's relationship (marital status) reduced negative effects of pain. However a study done by Heydarnejad, Hassanpour, and Solati, (2011) suggested that none of the demographic variables (age, education, marital status, income) were significantly related to QoL of cancer patients on chemotherapy. As a result pain management in younger or older patient was not different in this study. Similarly, Ping Y et al (2012) did not find gender as a predictor of pain relief in cancer patients.

While other studies did show relationship between pain and financial status (health financier) (Wang et al, 2012, Masika, Wettergren, Kohi, and Essen, 2012, Ping Y et al, 2012) this study

did not. This could have been attributed to limitation of study designed i.e. cross-sectional used in this study as opposed to longitudinal study design that used by the other studies. (Masika et al, 2012)

It was observed that most of the patients who returned to the clinic before the appointment date complained mainly of cancer pain. It was also observed that most of the patients who had chronic illness other than cancer especially hypertension had stopped taking the antihypertensive as they concentrated on cancer therapy.

6.2 Conclusion

The findings of this cross-sectional study on pain management practices and its effect on performance of ALs suggest that pain relief is a key determinant of one's function i.e. performance of ALs and independency. Also the cancer pain management practice determines the level of pain relief. The most common used mode of pain management is painkillers with the chemotherapy being the most effective mode. Only a few mitigating factors were identified to influence the pain management practices and pain relief e.g. history of bhang use. However in this study, other factors such as age, gender, education level and income were not identified as predictors of pain relief. Interference with relation to others was identified as a predictor of pain relief.

6.3 Recommendations

From the findings of this study the following recommendations were made:

1. Cancer pain still needs more attention and more structured interventions to improve QoL in cancer patients
2. All the cancer patients should be assessed thoroughly for pain at all contacts with health care provider and appropriate action taken promptly.
3. Palliative care should be incorporated in CTC for better pain management other than being a kind of stand-alone department.

5.3.1 Further research

There is need for further research on other domains of QoL in relation to cancer pain and also on barriers to adequate pain treatment.

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Appendix 1: CONSENT FORM

Researcher's statement

Dear participant,

My name is **Priscilla Nderitu** masters of Science in nursing student from the University of Nairobi. I am inviting you to participate in a study i intend to carry out on **“pain management practices and their effects on activities of living among adult cancer patient at Kenyatta National Hospital, Nairobi Kenya”** as part of my course requirement. The study seeks to determine the pain relieving approaches used in treating cancer patients and assessing how these affect their routine life activities.

Your participation in this study is on voluntary basis i.e. it is your choice to participate and you may opt out from the study at any stage which will not lead to any form of penalty. However, your participation in this study will help us obtain important information on the effective pain management practices. You will be required to sign consent before the beginning of the study.

To obtain the required information, you will be interviewed for about 30 minutes by me, the researcher, assisted by two research assistants.

This information will be kept confidential and anonymous. Identification will be by numbers only i.e no names or any other personal particulars will be written on the questionnaire.

Please note, your opinion will be respected and considered. All the participants will be treated equally.

You will benefit from this study by being referred to the relevant personnel for assistance if need be. In additional, the study findings will be used to develop strategies on how to improve assessment and management of the cancer pain by policy makers and improve quality of cancer care.

The study may have minimal risk to you, mainly psychological as you meditate on the ailment. No invasive procedure such as pricking or collection of blood will be done.

I will be available to answer any question that may arise in the course of the study and/ or afterwards i.e. you are free to ask any question or express any concern at any time.

In case of any question or concerns you may contact the me on cell. Phone. No. 0721-265603 or KNH / UON ERC at KNH, telephone number 020- 726300-9, address P.O. box 20723, Nairobi

You participation is highly appreciated.

Thank you.

Priscilla Nderitu (Researcher)

Participant’s statement

I have fully read / was read to me the consent explanation and understood its content. I have been given an opportunity to discuss all my concerns with the researcher. I do therefore agree voluntarily to participate in the study on *“pain management practices and its effects on performance of activities of living among adult cancer patient at Kenyatta National Hospital”*.

I also understand that all the information I give will be for the purpose of this study only.

Participant’s Signature ----- date -----

Serial number -----

Witness’s Signature ----- date -----

(Researcher /research assistant)

MAELEZO YA RIDHAA

Kwa mshiriki mpenzi,

Jina langu ni Priscilla Nderitu mwanafunzi katika chuo kikuu cha Nairobi ambapo ninanua kuhitimu na shahada ya juu ya uuguzi. Ninafanya utafiti kuhusu njia zinazotumiwa kukinga maumivu itokanayo na ugonjwa wa saratani na vile zinashangia uwezo wa kufanya shughuli za kila siku baina ya wanao ugua saratani katika hospitali kuu ya Kenyatta. Umealikwa kwa heshima kushiriki katika zoezi hili la utafiti.

Kushiriki katika zoezi hili ni kwa hiari yako mwenyewe na hakuna adhabu yeyote atakayotolewa kwa kutoshiriki. Walakini, kushiriki kwako ni kwa umhimu sana maana itatupatia habari ambazo zitazaidia kuimarisha huduma ya afya kwa wagonjwa wa saratani. Iitupate habari muhimu kutoka kwako utahitajika ujibu mswali utakayoulizwa na mtafiti akizaidiwa na watafiti wawili.

Ili ushiriki katika utafiti huu unahitajika uwekesahihi kwa hiari yako kwa nafasi uliyoachwa hapo chini

Ni vizuri kuelewa ya kwamba: jina lako ama nambari ya kitambulisho chako hazitaandikwa kwenye ile fomu ya majibu lakini utapewa nambari ya kushiriki, habari utakapotoa zitashughulikiwa kwa njia ya siri inavyoruhusiwa kisheria, maoni ya kila mshiriki ni ya maana sana kwetu, washiriki wote watashughulikiwa kwa njia sawa yaani bila ubaguzi, mshiriki una uhuru wa kujiondoa kwa utafiti huu wakati wowote bila adhabu yeyote; na utafitihuu utakuwa na madhara kidogo sana ya kimawazo juu ya ugonjwa.

Unaweza uliza swali ama jambo lolote kuhusu utafiti huu kwa mtafiti nambari ya simu ya rununu 0721-265603 ama wanachama wa kamati ya madili ya utafiti ya hospitali kuu ya Kenyatta na chuo kikuu cha Nairobi. Nambari ya simu 020-2726300 – 44102.

Asante

Priscilla (mtafiti)

Ridhaa ya kushiriki utafiti

Mimi nimesoma/ nimesomewa na kuelezewa vizuri kuhusu utafiti unaofanywa na ninakubali kwa hiari yangu kushiriki. Pia ninaelewa ya kwamba habari nitakazozitoa ni za matumizi ya utafiti huu pekee.

Sahihi ya mshiriki -----tarehe -----nambari ya fomu-----

Sahihi ya shahidi (mtafiti) ----- tarehe -----

Appendix 2: QUESTIONNAIRE

STUDY TITLE: To determine pain management practices and its effects on activities of daily living among adult cancer patient at Kenyatta National Hospital, Nairobi Kenya.

Introduction

I am Priscilla Nderitu masters of Science in nursing student from the University of Nairobi. I am inviting you to participate in a study whose purpose is to determine pain management practices and their effects on activities of (daily) living among adult cancer patient at Kenyatta National Hospital, Nairobi Kenya. Information that you provide in this study will be treated with ultimate confidentiality. The findings will be used in policy formulation in handling cancer pain on cancer patients also on day to day management of cancer pain.

Thank you for accepting to participate in this study.

Please fill free to contact me on 0721265603

Date -----	Site code.-----	Department/site -----
Client code. -----	Home county-----	Residence ----- Physical address-----

SECTION 1.0: Socio-demographic Data

1.1 How old are you? -----

1.2 What is your education level?

- 1. None
- 2. Primary not completed
- 3. Primary completed
- 4. Secondary not completed
- 5. Secondary completed
- 6. Others specify -----

1.3 What is your marital status?

- 1. Single
- 2. Married
- 3. Divorced
- 4. Separated
- 5. Windowed
- 6. Others specify -----

1.4 What is your religion?

- 1. Christian
- 2. Muslim
- 3. Others

(please specify) -----

1.5 What income generating activity do you engage with?

- 1. Formal employment
- 2. Self-employment
- 3. Unemployed
- 4. Student
- 5. Others

(please specify) -----

1.6 Who is paying for you hospital/ medical bills?

- 1. Self
- 2. Employer
- 3. Insurance
- 4. Others

(please specify)

SECTION 2.0 DISEASE HISTORY (interview and review of records)

2.1 What type of cancer are you suffering from?

- 1. lung cancer
- 2. head and neck cancer
- 3. breast cancer
- 4. cervical cancer
- 5. colorectal cancer
- 6. bone cancer
- 7. Others

specify.....

2.2 For how long have you been suffering from this disease? -----

2.3 Do you know what stage is your disease?

- 1. Yes No

2.3.1 If yes which stage is it?

- 1. I
- 2. II
- 3. III
- 4. IV

2.4 What anticancer therapy are you on?

- 1. Chemotherapy
- 2. Radiotherapy
- 3. Surgery
- 4. 1&2
- 5. 1,2&3
- 6. Hormonal therapy
- 7. Immunotherapy

2.5 Do you experience pain episodes?

- 1. Yes
- 2. No

2.5.1 How is this pain relieved?

By use of:

- 1. Pain killers medicine
- 2. Physiotherapy
- 3. Operation
- 4. Radiotherapy
- 5. Counseling

2.5.2 Are you taking any pain killers?

- 1. Yes
- 2. No

If yes, specify -----

2.5.3 How often do you take these painkillers?

- 1. Regularly
- 2. When in pain

2.5.4 Are you on any rescue/emergency analgesics?

- 1. Yes
- 2. No

2.5.5 How promptly do you report pain?

- 1. Immediately I experience pain
- 2. When am not able to carry out routine activities

2.5.6 How would you describe your pain relief satisfaction?

- 1. Satisfied
- 2. Dissatisfied

2.5.7 Choose the word below which best describes how your pain feels right now?

- 1. Mild
- 2. Discomfort
- 3. Distressing
- 4. Horrible

5. Excruciating

2.6 Do you take drugs of abuse?

1. Yes

2. No

2.6.1 If Yes, which one?

1. Alcohol

2. Bang

3. Mirraa

4. Cocaine

5. Morphine

6. Others (please specify)

2.7 Have you ever taken any drug of abuse in the past?

Yes

2. No

2.7.1 If Yes, which one?

1. Alcohol

2. Bang

3. Mirraa

4. Cocaine

5. Morphine

6. Others (please specify)

2.8 Were you experiencing pain before this disease?

1. Yes

2. No.

2.8.1 If Yes which area

1. Back (lumbago)

2. Osteoarthritis (joints)

3. Headache

4. Toothache

5. Dysmenorrhea

6. Others specify

2.9 Do you suffer from any chronic illness other than cancer?

Yes

No

2.9.1 If yes which one?

Hypertension

Diabetes

HIV/AIDS/

Others specify

SECTION 3: BRIEF PAIN INVENTORY FOR PATIENT AND FAMILY

4.1 Have experience any pain in the past 24 hours?

Yes No

Kindly rate the pain intensity you are experiencing in a numerical scale ranging from zero (0), indicating no pain to ten (10), circle the worst pain imaginable.

4.2 Please circle the number for your pain right now

0 1 2 3 4 5 6 7 8 9 10
No pain moderate pain pain as bad as you
can imagine

4.3 On this scale circle the worst pain you have had today?

0 1 2 3 4 5 6 7 8 9 10
No pain moderate pain pain as bad as you
can imagine

4.4 On this scale circle the average level of pain you have ever had in the past 24 hours?

0 1 2 3 4 5 6 7 8 9 10
No pain moderate pain pain as bad as you
can imagine

4.5 circle the number for you least pain today

0 1 2 3 4 5 6 7 8 9 10
No pain moderate pain pain as bad as you
can imagine

4.6 What medication of treatment are you receiving for your pain?

4.7 How much relief did the medication give you in the past 24 hrs.?

0% 10 20 30 40 50 60 70 80 90 100%
No pain complete
Relief

4.8 Circle the number for how much pain has interfered or bothered you:

a. interfered with general activity of living
0% 10 20 30 40 50 60 70 80 90 100%
No pain completely
interferes

		b. interfered with mood									
0%	10	20	30	40	50	60	70	80	90	100%	completely Interferes
No pain											
		c. interfered with walking ability									
0%	10	20	30	40	50	60	70	80	90	100%	complete Interferes
No pain											
		d. Interfered with normal work(includes both work outside the home and housework)									
0%	10	20	30	40	50	60	70	80	90	100%	complete Interferes
No pain											
		e. Interfered with relations with other people									
0%	10	20	30	40	50	60	70	80	90	100%	complete Interferes
No pain											
		f. interfered with sleep									
0%	10	20	30	40	50	60	70	80	90	100%	complete Interferes
No pain											
		g. interfered with enjoyment of life									
0%	10	20	30	40	50	60	70	80	90	100%	complete Interferes
No pain											

Appendix 3: KNH/UON-ERC LETTER



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

Ref: KNH-ERC/A/105

Link: www.uonbi.ac.ke/activities/KNHUoN

Priscilla W. Nderitu
School of Nursing Sciences
College of Health Sciences
University of Nairobi

KNH/UON-ERC
Email: uonknh_erc@uonbi.ac.ke
Website: www.uonbi.ac.ke



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

10th April 2014

Dear Priscilla

RESEARCH PROPOSAL: PAIN MANAGEMENT PRACTICES AND THEIR EFFECTS ON PERFORMANCE OF ACTIVITIES OF LIVING AMONG ADULT CANCER PATIENT AT KENYATTA NATIONAL HOSPITAL (P24/01/2014)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and approved your above proposal. The approval periods are 10th April 2014 to 9th April 2015.

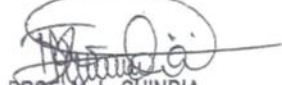
This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
- Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
- Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website www.uonbi.ac.ke/activities/KNHUoN.

Protect to Discover

Yours sincerely



PROF. M. L. CHINDIA
SECRETARY, KNH/UON-ERC

- c.c. The Chairperson, KNH/UoN-ERC
 The Deputy Director CS, KNH
 The Principal, College of Health Sciences, UoN
 The Director, School of Nursing Sciences, UoN
 The Assistant Director, Health Information, KNH
 Supervisors: Prof. Anna K. Karani, Dr. Waithira Mirie

Appendix 4: KNH CERTIFICATE OF RESEARCH REGISTRATION

KNH/R&P/FORM/01



KENYATTA NATIONAL HOSPITAL

Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.
Tel: 2726300-9 Fax: 2725272
Research & Programs: Ext. 44705
Email: k.research@knh.or.ke

Study Registration Certificate

1. Name of the PI PRISCILLA WAMBUI NDERITU
2. Email address: Priscillakath@gmail.com Tel No. 0721-265608
3. Contact person (if different from PI) JOHN GITHAIGA
4. Email address: _____ Tel No. 0721-600478
5. Study Title
PAIN MANAGEMENT PRACTICES AND THEIR EFFECTS ON PERFORMANCE OF ACTIVITIES OF LIVING AMONG ADULT CANCER PATIENT AT KNH
6. Department where the study will be conducted CANCER TREATMENT CENTER
7. Endorsed by Head of Department where study conducted
Name: Dr. Priscilla Angeli Signature: [Signature] Date: 28/4/2014
8. KNH UoN Ethics Research Committee approval number P24/01/2014
(Please attach copy of ERC approval)
9. I PRISCILLA NDERITU commit to submit a report of my study findings to the Department where the study will be conducted and to the Department of Research and Programs.
Signature: [Signature] Date: 22/04/2014
10. Study Registration number (Dept/Number/Year) MED ^{CTC} / ⁰⁵ 014 / 2014
(To be completed by Research and Programs Department)

11. Research and Program Stamp _____



All studies conducted at Kenyatta National Hospital must be registered with the Department of Research and Programs and investigators must commit to share results with the hospital.