FACTORS INFLUENCING PROVISION OF CANCER TREATMENT IN PUBLIC HEALTH FACILITIES IN KENYA: THE CASE OF KENYATTA NATIONAL TEACHING AND REFERRAL HOSPITAL IN NAIROBI

BY

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DECLARATION

This research project report is my original work and has not been presented for any award in any other university.

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This research project report has been submitted for examination with my approval as university supervisor.

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DEDICATION

This project is dedicated to my spouse Edward, children Koby and Moses, parents and siblings for their love support and sacrifice to see that I succeed. May God bless you and keep you.

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LIST OF ACRONYMS AND ABBREVIATIONS

NCF National Cancer Forum

AMCSL American Cancer Society and Livestrong

WHO World Health Organization

NGO Non- Governmental Organizations,

CBOs Community-Based Organizations

NHIF The National Hospital Insurance Fund

NCDs Non Communicable Diseases

US United States

KEMRI Kenya Medical Research Institute

KNH Kenyatta National Hospital

NHIF National Hospital Insurance Fund

UNDP United Nations Development Programme

ICT Information and Communications Technology

KNTRH Kenyatta National Teaching and Referral Hospital

SPSS Non Communicable Diseases

ABSTRACT

The aim of this study was to look at the factors influencing Provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. To achieve this the study was guided by the three objectives that include; To investigate how competence of health facility personnel has influenced provision of Cancer treatment in the public health facilities in Nairobi, Kenya; To establish how availability of facilities has influenced its provision in the public health facilities in Nairobi, Kenya and; To investigate how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya. The study adopted a descriptive survey design. The target population of this study consisted of 600 employees of Kenyatta National Teaching and Referral Hospital. Simple random sampling technique was used to select 180 employees from Kenyatta National Teaching and Referral Hospital to participate in the actual study. The data collected was coded and keyed into the computer for analysis using the (SPSS) Statistical Package for Social Science. Appropriate descriptive statistics including percentages, mean and frequency counts were employed. The data was presented using tables. Piloting of questionnaire was done among ten employees of Kenyatta National Teaching and Referral Hospital before the actual data collection. These ten employees did not participate in the actual study. The researcher adopted Cronbach's alpha test to test for reliability. The main instrument for data collection was a semi structured questionnaires containing both open and closed ended questions. The study found that competence of personnel was a key factor influencing provision of cancer treatment with a coefficient of 0.787 which was significant and 95% confidence level. Another key influencing factor to provision of cancer treatment was adequacy of facilities which showed a strong relationship with a coefficient of 0.786 indicating a positive relationship in influencing provision of cancer treatment. The last variable which was looking at doctor to patient ratio, in terms of availability of trained oncologists, showed a positive relationship with Pearson's r value of 0.913. The study concluded that determining factors that influence provision of cancer treatment is important in controlling the disease. Key recommendations are: The government should target to subsidize cancer treatment through policy change, increased financing for healthcare and health insurance, and prioritize early detection/ screening to ensure cancer cases are detected early for better treatment outcomes. Palliative care for advanced cases should also be an area of priority for the government. The government should invest in and incentivize training of oncology professionals and devolve oncology care to prevent movement of persons from counties to KNH to seek treatment.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Cancer refers to many different diseases in which there is uncontrolled division, growth and spread of abnormal cells, which then invade nearby tissues. It can affect almost any part of the body. There are several types of cancer. Carcinoma that originate in skin, Sarcomas that originate in connective tissues, fat , muscle, cartilage, blood vessels or other supportive or connective tissues, Leukemia that originates in blood-forming tissues like the bone marrow, Multiple myelomas and lymphomas that originate in cells of the immune system,(National Cancer Forum, 2006).

Cancer is the third leading cause of death worldwide (WHO 2002). The main burden of cancer will continue to especially in developing countries, (Matthers and Loncar 2006). Ongoing research has demonstrated that cancer has the most devastating economic and social impact of any disease in the world. The total costs of cancer have been estimated to be as high as $895 billion (US) worldwide, even though there are data limitations giving exact figures to support this (American Cancer Society and Livestrong, 2008).

In a Kenyan study, an estimated 82,000 new cases of cancer are diagnosed annually, with 18,000 cancer deaths being reported annually. More deaths from cancer are being seen today as compared to Tuberculosis, HIV and Malaria 20 years ago, (Karanja and Wanyoro 2012). Cancer disease accounts for one in eight deaths annually (Mathers & Loncar, 2006).

The National Cancer Control Strategy was initiated by the Ministry of Public Health in 2012, and was designed to reduce the incidence and mortality of cancer and improve the quality of life of cancer patients in Kenya. This strategy comprised an integrated set of activities covering all issues touching on cancer prevention and management. This is the only cancer control strategy to be developed in Kenya, consolidating aspects of cancer prevention, screening, diagnosis, treatment and care for cancer patients as well as the investment needed to deliver these services (Neondo, 2012). However, this strategy has no clear policy on matters touching on management of terminal pain management, supportive and palliative care for cancer patients (KEMRI, 2006). The success of this strategy would therefore depend on its ability to implement the impediments to palliative care in Kenya which include legal

restrictions on the use and availability of opioid analgesics for pain management, financial and human resources.

1.1.1 Health Sector in Kenya

In Kenya the health care system is structured in a hierarchy manner so that complicated cases are referred to higher levels, these facilities include: national referral hospitals, County hospitals (formerly the Provincial general hospitals), Healthcare units include: District and Sub-district hospitals, health centers, and dispensaries. There are over 4,700 health facilities countrywide, with the public sector system accounting for about 51 percent of these facilities. Health services are integrated as one goes down the hierarchy of health structure from the national level to the provincial and district levels (RoK, 2011). The two national referral hospitals are Kenyatta National Hospital (KNH) in Nairobi and Moi Referral and Teaching Hospital (MTRH) in Eldoret. These are centres of Excellence which have highly trained personnel and provide high level and complex healthcare technologies. There are 47 Counties in Kenya, and each has a county hospital which act as referral hospitals to their district hospitals. The County level acts as an intermediary between the national central level and the districts. These regional centres provide specialized care including intensive care and life support and specialist consultations. They oversee the implementation of health policy at the district level, maintain quality standards, and coordinate and control all district health activities (RoK, 2001).

District hospitals co-ordinate and the referral centres for the smaller units in the district. They concentrate on the delivery of health care services and generate their own expenditure plans and budget requirements based on guidelines given from County headquarters. The Sub-district hospitals are similar to health centres but differ in that they provide surgery services for caesarian sections and other procedures. Health centers are medium sized units with focus on preventive care, like vaccinations, and curative services, mostly catering for populations' of approximately 80,000 at local level. Dispensaries are the lowest point of contact with the public system, and are designed to be first line of contact with patients. Dispensaries provide wider coverage for outpatient services, which is a primary goal of the health policy. The government health service is supplemented by faith-based and private hospitals and clinics, which together provide between 30 to 40 percent of the hospital beds in Kenya (RoK, 2010).

Kenyatta National Teaching and Referral Hospital

Kenyatta National Hospital is the oldest hospital in Kenya having been founded in 1901 with a bed capacity of 40 as the Native Civil hospital and then King George VI in 1952, after which it was renamed Kenyatta National Hospital after the first president of Kenya, following independence from the British. It is currently the largest National referral, teaching and research hospital. KNH has 50 wards, 22out-patient clinics, 8 normal and 16 specialized theaters and Accident & Emergency Department. Total bed capacity is 1800, out of which 209 beds are for the Private Wing. Up to 1987, Kenyatta National Hospital operated as a department of the Ministry of Health. Following the Kenyatta National Hospital Board Order of 1987 contained in the legal Notice Number 109 (Kenya Gazette Supplement No. 23 of 10th April 1987) Kenyatta National Hospital was established as a state corporation under the State Corporation Act with a Board of Management and it at the top of the referral system in Kenya today. According to the legal Notice the function of the hospital were stated as follows: to provide facilities for education and training in nursing and other health and associated professions, to receive patients on referral from other health institutions within or abroad for specialized health care, to participate, as a national referral hospital in national health planning, and to provide facilities for medical education for the University of Nairobi and for research either directly, or through other cooperating health institutions

It covers an area of 45.7 hectares and within the KNH complex are: the Kenya Medical Training College, College of Health Sciences (University of Nairobi, Kenya Medical Research Institute, Drug analysis and Research unit and National Laboratory Service (Ministry of Health). (www.knh.ke.org).

1.2 Statement of the Problem

According to statistics in Kenya, cancer causes 7% of total national mortality every year, with an annual incidence of about 28,000 cases and mortality rate of 22,000 and ranks third as a cause of death after infectious diseases and cardiovascular diseases. Majority of those affected are below the age of 70 years. The risk of getting cancer before the age of 75 years is 14% while the risk of dying of cancer is estimated at 12%. The situation has been worsened by poor health indicators in Kenya and the gap between the demand for and supply of health services continues to widen. Expansion of Health sector has been slow thus not able affecting availability, accessibility and affordability of quality of health services (Kenya Medical Research Institute, 2011).

Several scholars and researchers have reviewed Cancer treatment Adhu (2013) studied the challenges of cancer treatment at Jaramogi Oginga Odinga Teaching and Referral Hospital. The major challenges revealed in the study highlighted inadequate resources which made it difficult for the organization to execute cancer treatment effectively. Okech (2013) examined challenges of cancer treatment by private hospitals in Nairobi County. The study found that lack of funding for the plans and that the ever changing Government policies were a key hindrance to effective cancer treatment.

Wanjuki (2011) studied the prevalence and management of cancer pain in outpatients at Kenyatta National Hospital. The study found that a high percentage of cancer patients were not able to access proper pain management. Sego, (2010) did a study that aimed to establish the perceptions of women with ovarian cancer towards health care service utilization. Results showed that patient and health provider variables were not significant in influencing perception towards health care service utilization. Majority of the chemotherapy drugs are not available in the hospital forcing the women to buy from elsewhere. This had a significant negative impact on women's perception towards healthcare service utilization. Long waiting hours and ques, booking time was also taking too long and this caused a negative perception towards healthcare service utilization. The findings showed that 91 % of women with ovarian cancer have a positive perception towards healthcare service utilization.

From the review of research undertaken, it is evident that there are few studies that have looked at the factors influencing provision of Cancer treatment to the public health facilities in Kenya, hence a research gap. This study therefore sought to fill this gap by investigating the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi.

1.3 Purpose of the Study

The purpose of this study was to investigate the factors influencing Provision to Cancer treatment in the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi.

1.4 Objectives of the Study

The objectives of this study were as follows:

i. To assess how competence of health facility personnel influence provision of Cancer treatment in the public health facilities in Nairobi, Kenya.
ii. To establish how availability of facilities influence provision of cancer treatment in the public health facilities in Nairobi, Kenya.
iii. To establish how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya**.**

1.5 Research Questions

The study sought answers to the following research questions:

i. How does competence of health facility personnel influence provision of Cancer treatment in the public health facilities in Nairobi, Kenya?
ii. How does availability of facilities influence provision of cancer treatment in the public health facilities in Nairobi, Kenya?
iii. Does having trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya?

1.6 Significance of the Research

This study whose aim is to investigate the factors influencing Provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi, will benefit the patients, medical personnel, policy makers, the drug manufacturers, the government and other stake holders.

This study finding may be used to the health facilities at the lowest level, to access the cancer treatment so as to ease the backlog at the main referral hospitals. The stakeholders may be able to decide on the areas of their investment in helping the implementation of provision of anticancer drugs to the patients in Kenya.

1.7 Limitation of the Study

It was a challenge interviewing patients due to confidentiality and ethical requirements; hence, the study scope was restricted to Healthcare providers. Also, many other studies have been done with focus of patients' socio-economic status and cultural issues that affect access

to healthcare. Therefore, the study sought to look and Health issues constricting the provision of Healthcare delivery with focus on Healthcare providers. The researcher was also not able to get all the respondents in the sample population on a one-on-one basis.

1.8 Delimitations of the Study

The study was limited in scope capturing KNH as a case study. This was basically due to the fact that KNH is the only public hospital with radiotherapy machines among the referral hospitals in Kenya. Also the hospital is vested with the kind of personnel targeted to facilitate information required to achieve the study objectives. Other delimiting factors include: the research questions, the choice of objectives, variables of interest, and the population which limits the respondents to the personnel dealing with cancer cases at the KNH.

1.9 Assumptions of the Study

The various functional departments at Kenyatta National Teaching and Referral Hospital would avail all the required data needed, and that the respondents would answer all the questions reliably. The researcher assumed that the population selected would give a fair representation of the population under study, and that there were factors influencing provision of Cancer treatment to the public health facilities in Kenya.

1.10 Definition of Significant Terms Used in the Study

Cancer: A broad group of diseases that involve abnormal and unregulated cell growth with the potential to divide, invade and spread to other parts of the body.

Provision of cancer Treatment: Refers to supply of different cancer treatment options like radiotherapy, chemotherapy, surgery and palliative treatment.

Administration of Drugs: This is the means by which a medical drug is transferred to the body.

Oncologists: A medical doctor whose specialties is in cancer treatment

Public Health Facilities: A public health facility is any location where medical care is provided to the public.

Affordability: The ability of an individual to meet the costs of medical care and to receive care and services from the health facility. Factors that can influence this ability include financial ability, geographic location, transportation availability amongst others.

Competence: This is the measurement of knowledge, abilities, behaviours, skills, and other characteristics that an individual requires to perform work or occupational roles successfully.

Availability of facilities: this describes the characteristic of a facility that is accessible, usable upon demand and ability to perform its designated function in health care system.

Trained medical personnel: The refers to a medically trained individuals who have undergone professional training in their respective fields and are accredited to provide medical care, or persons authorized under law or regulation to administer medical examination and treatment.

1.11 Organization of the Study

Chapter one discusses the background, further brings out Problem Statement of the study. The chapter introduces the overall objective of the study where the study will seeks to investigate the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. The chapter also provides information about the significance of the Study and limitations of the study. Finally, the chapter outlines the definition of terms used in the study.

Chapter two reviews literature on the research study with the first section exploring the theoretical Foundation on provision of Cancer Treatment. The following section provides the conceptual framework on the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. The chapter also looks at the empirical review of various authors, who have done research on provision of Cancer treatment to the public health facilities placing more emphasis on objectives of this study.

Chapter three identifies the procedures and techniques that were used to complete the study. It discusses the research design to be adopted by the study, data collection, and data analysis.

Chapter four presents' data collected from the field, its analysis, the interpretation of the findings. It was established that there was a positive relationship of affordability as an influencing factor of access to cancer treatment. As well as adequacy of facilities which showed a strong relationship with access to cancer treatment showing and finally the doctor to patient ratio showed a positive relationship with access to Cancer treatment. Chapter five outlines the findings, discussions, conclusion and recommendations of this study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter gives a review of the related literature and studies done on the subject presented by various researchers and authors. It evaluates literature with respect to the overall objective of the study that is to determine factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. The chapter specifically covers the theoretical foundation, the Conceptual framework and Summary of literature review

2.2 Concept of Cancer Treatment

Access to adequate healthcare coverage can make a difference in the fight against cancer. Lately, healthcare providers caring for cancer patients, patients living with cancer and the pharmaceutical industry have expressed concerns about the increasing challenges in gaining affordable, timely and equitable patient access to new oncology products under current regulatory and reimbursement arrangements (Prostate Cancer Foundation of Australia 2013). The development , licensing and marketing of newer generation medicines has increased costs of the drugs and pressurized health systems, revealing gaps in the private and public structures on which many patients and their families heavily rely on for support. Access to cancer drugs implies that all patients are able to get the medications prescribed by their oncologist in a timely manner and without financial hardship. The structures that make this possible include the cancer care system, publicly funded drug programs and private insurance (WHO, 2009).

According to Timothy and Jeanette (2007) survey report Oncology treatment facilities are limited in Kenya, with only three radiation machines for 30 million people. Kenyatta National Hospital studies, shows that not all those who start their cancer treatment complete due to the postponement of their appointments following long queues and also limitation of cash following the processes and length of Cancer treatment. The study shows that the situation is even worst when the machines breakdown and may take longer time to repair as a result of limited technical knowhow.

In spite of the policy and research studies done on ensuring equitable access, research continues to identify inequities in access to cancer drugs. A study by KEMRI (2012), found that of the 2,292 Cancer-related deaths recorded in Nairobi during a two-year period, the

highest number of cases were attributable to oral tumors, the study further found out that due to great strides mad in clinical research for better oncology drugs, management of cancer is improving in the developed world, making most of the cancers considered lethal some years ago, curable now. Unfortunately, in Kenya, these some of these advances are yet to be realized due to inadequate resources or prohibitive cost of chemotherapy drugs; and the advanced stage of the majority of Cancers at the time of Presentation (KEMRI, 2012).

2.3 Factors Influencing Provision of Cancer Treatment

This section discusses the factors influencing provision of cancer treatment, the major subtopics discussed include: Competence of health facility personnel influence provision of Cancer treatment in the public health facilities; availability of facilities influence provision of cancer treatment in the public health facilities and how trained medical personnel influence of cancer treatment provision in the public health facilities**.**

2.3.1 Competence of Health Facility Personnel and Provision of Cancer treatment

In order to ensure hospital growth, it is important to have highly skilled staff like medical personnel, administrators and ancillary staff in order to have effective quality enhancement and high-quality outcomes (Argote, 2000). To improve efficiency in service delivery, consideration must be given to successful recruitment and retention of staff of qualified staff. The staffs need to be empowered and treated as full partners in the hospital tasks and given opportunities for further training and advancement (Brown and Duguid, 2003). Recruitment and retention of top-level medical personnel should be emphasized and prioritized to encourage these professionals to form working teams, including support staff like case managers, social workers, and other ancillary workers, to promote quality (Brown and Duguid, 2003).

Human resource strategies like selective hiring and retention of medical personnel need to be implemented in order to enable effective service delivery in hospitals(Cohen and Levinthal, 2001); Enforcing standard operating hospital procedures , monitoring effective service delivery indicators, implementing continuous training of all hospital personnel and motivating them will ensure the hospital continues to meet certain performance and practice standards, and retains its credentials (Crewson, 2004). Public hospitals must build capacity to entice and employ enough highly qualified medical staff in order to improve of efficient service delivery (Argote and Ingram, 2000). The key to effective service delivery is to rapidly

adapt to constantly changing circumstances and those who adapt faster are the greatest winners in today's business world. The shortcomings in service delivery in most hospitals arise due to lack of building capacity in service delivery. Service delivery requires specific skill levels and experience which must be continuously learned (Cohen and Levinthal, 2001).

Healthcare delivery systems involve medical personnel, allied health personnel, ancillary staff, institutions and resources that deliver health care services. The most critical personnel in health care system are the medial personnel, especially physicians who influence the nature, quantities, and quality of healthcare goods and services delivered and consumed. According to the UNDP (2001), a physician comprises graduates of a faculty or school of medicine in any field (including medical, teaching, research and administration). Physicians' routine practice of making appointments, diagnosing illness, counselling, providing health information, prescribing and administering treatment, charging for services and materials, and referral of patients to their colleagues greatly affects utilisation, efficiency, and quality of healthcare services.

According to the UNDP (2001), Government health institutions are faced with staffing challenges that include: inadequate highly skilled personnel like physicians and specialized doctors, overstaffing of lower cadre and ancillary staff, poor remuneration of staff, corruption, concentration of key personnel in urban areas, and the mushrooming of private clinics resulting in many experienced staff leaving the public service for the private sector. Another factor is low morale and frustration in getting promotions in the civil service which results in medical personnel to seek better opportunities elsewhere. The situation is of concern as most government facilities in rural areas face an acute shortage of doctors and middle-level personnel.

In Kenya, cancer managers feel they have inadequate training in management of cancer while others were not comfortable with cancer screening procedures (Kivuti, Bitok, Ganesh, Roudsari and Geoff 2013). This is concurrent with Chirenje *et al* (2001) who found that medical personnel lacked the necessary skills in provision of cervical cancer care. This ranges from technology related challenges to hardware in provision, little access to research outcomes or evidence based practice. Cancer managers in Kenya further struggle from low knowledge levels on some types of cancers may also not be up to date while investment in ICT in most public facilities in Kenya is still basic (Kivuti *et al* 2013). Due to Non-

availability or unsteady drug supplies in government health facilities many patients end up buying drugs from private pharmacy outlets at higher fees which most cannot afford.

2.3.2 Availability of Facilities and Provision of Cancer Treatment

Hospitals need to avail facilities whereby health professionals can access relevant and timely information in any area of their specialization (Oliveira-Cruz, Hanson and Mills, 2001, so that treatment decisions can be made based on latest information founded in sound scientific medical research on specific conditions, procedures and medications (Nerenz and Neil, 2001). The quality and timing of information should be tailored to the needs of decision makers and should be current, including futuristic projections of the outcomes (Allen, 2001). To achieve demonstrable quality improvements, hospitals are emphasizing on getting the right information to the right people at the right time (Rust and Tuck, 2006). In order to achieve this, most hospitals have embraced ICT and digitized their systems by adopting applications that reduce lag times in getting lab and imaging results and deliver result to the doctors, capture data on history and health status of patients (Tam, 2005)

In service organizations, financial management has been a challenge to other functions that contribute to service delivery (Adams and Colebourne, 1999). In order to improve on this, a more participative and positive approach is required, it contributes to improved costing systems, motivation of personnel, strategic planning, quality control, and increased return on investments for shareholders and trust in the management (Arhin-Tenkorang, 2000). In good financial management it is prudent to distinguish the ‘good costs’ that improve efficiency within the organization, and its capabilities in meeting quality service delivery from the ‘bad costs’ that increase inefficiency and bureaucracy hence becoming obstacles to service delivery (Sun and Shibo, 2005). Financial accountability requires use of monitoring and evaluation systems, auditing and accounting mechanisms to ensure that allocated funds are used for the intended purposes (Oliveira-Cruz, Hanson, and Mills. 2001).

In most developing countries currently, governments lack the financial and technical capacity to effectively manage and oversee prudent use of funds it allocates. Accountability on the allocation, disbursement and use of financial resources is a big challenge to most (Smee, 2002). Organisational insufficiencies, lack of effective auditing and supervision, and lax fiscal controls over public funds leads to fraud, mismanagement, corrupt practices and political interference which are likely to occur at every stage of the process as a result of poorly managed expenditure systems, (Peters, Elmendorf, Kandola and Chellaraj, 2000).

The biggest challenge in financial management of private hospitals is fraud and falsification of financial statements, to exaggerate revenue and understate expenses and losses, in order to meet expectations of shareholders, investors and analysts (Maureen, 2005). Public hospitals require funding to redesign, equip, rehabilitate and adequately staff their facilities in order to offer better and more efficient services to Kenyans (RoK, 2001). In Kenya, most of the health facilities in rural areas are underfunded, under staffed and ill equipped due to constraints in funding thus are incapacitated to offer efficient services to patients and require funding to alleviate the deplorable condition they operate under (Maureen, 2005).

Low funding for Community Health Workers programme in the country has adversely affected the delivery of health services especially at the grass-roots. In Kenya, most of the health facilities in rural areas are underfunded, under staffed and ill equipped due to constraints in funding thus are incapacitated to offer efficient services to patients

Kenya is faced by inadequate and obsolete equipment to mitigate cancer. The Cobalt 60 machines used by KNH are completely out dated, and have limited capability to properly treat complex cases. Due to this lack of equipment, many cancer cases are being diagnosed very late such that no meaningful therapy can be done but only palliative care can be administered until patient dies. In Nairobi, there is only one Centre with newer technology, called Linear Acceleration; this is the Cancer Care Unit at the MP Shah Hospital. While this technology is more accurate and handles a higher load than Cobalt 60, it is much more expensive and has very high maintenance demands (Kenya Medical Research Institute ,2011). However, the government is making great strides in investing in newer technology and partnering with other more developed countries in bringing in newer technologies that can diagnose cancer in early stages and treat the same effectively at cheaper costs.

In KNH, the only place where the poor can access advanced and comprehensive cancer therapy at affordable rates is the Kenyatta National Hospital Cancer Treatment Centre.Due to the huge demand for services, to get a doctor's appointment, patients experience delays up to five weeks and this has serious repercussions in management of the disease. Four to Six Radiotherapy Machines are needed to cater for Cancer cases. Other challenges experienced include: Kenyatta National Hospital has only one Paedriatic oncology unit (with only 28 beds) that caters for only 25% of paedriatic Cancer Cases-the rest are accommodated in other wards and lack of Cancer Drugs , or if they are available they are not affordable to majority

of the patients. The team has tried to tackle this issue by equipping satellite cancer centres with some minimum equipment to provide primary and preventive care.

2.3.3 Trained Medical Personnel in Provision of Cancer Treatment

The main challenge in many countries facing health care is the shortage of medical personnel especially doctors. Some of the reasons for this especially in developing countries, especially in public service, is the constraints in number of training facilities for doctors, low morale for trained doctors due to poor pay, few promotion opportunities and long working hours leading to migration to greener pastures for better pay and less demanding working hours and few incentives given by government to train doctors. Many doctors are choosing less demanding specialties and restricting their practices to particular types of cases or services (Stoddart & Barer, 1999).

Growing population and limited number of specialists severely constrains delivery of quality medical care to people especially in the rural areas. Training of medical personnel requires a huge amount of resources and specialization hence, the limited number of educational facilities that can train them. This also constrains the numbers that undergo training the how quickly they get into the workforce. There is also the problem of imbalance in staffing. Non-professional staff cadre is usually over-staffed whereas professional staff is under-staffed. A number of studies show that the quality of care is detrimentally impacted by workforce shortages (AHRQ, 2004; Aiken et al., 2010; Blegen et al., 2011; Needleman et al., 2011). Workforce shortages lead to longer waiting times for patients, delayed diagnosis, management and treatment, less effective supportive services and worsening health differences. Governments should invest in building capacity and competence of the workforce to meet the growing need for high-quality health care.

High-quality cancer care is provided by a diverse team of professionals who include physicians, nurses, pharmacists and allied professionals. Kenya faces the challenge of having few physicians in the rural areas and even fewer cancer specialists who are concentrated in urban health facilities in Nairobi. This makes it difficult for a great majority of the population to access cancer treatment services resulting in travelling long distances to receive health care services and long waiting times. Moreover, many patients seek care in lower level health facilities where diagnosis of cancer is hampered by lack of facilities and qualified staff, (KEMRI, 2006).

According to Kenya cancer statistics and National strategies report, Kenya lacks enough trained personnel to handle Cancer cases. Workforce for cancer treatment in public facilities include 4 radiation oncologists, 4 pediatric oncologists, 6 medical oncologists, 5 radiation therapy technologists, 3 oncology nurses and 2 medical physicists. According to the Minister for health, more Pathologists and Oncologists are needed in County, District and Sub-district Hospitals to facilitate early detection and treatment of cancer cases.

Kenya currently has more than ten approved public and private medical schools , the main ones being Moi University, University of Nairobi, Kenyatta university, Uzima University, Egerton University, Kenya Methodist University , Maseno University Medical School, Jomo Kenyatta University of Agriculture and Technology and Mount Kenya University . In spite of the number of qualified workforce produced in these training institutions, Kenya still has a dismal shortage of doctors with a workforce of 8000 doctors, of which only 2300 are in the public hospitals to cater for majority of the population of approximately 45 million. Kenya is therefore performing poorly in meeting the standard world health organization (WHO) recommendation of a doctor to patient ratio of 1:1000. Major challenges faced in staffing of public health facilities include poor remuneration, long working hours constraints in promotion opportunities, low morale among doctors, hence many leaving public service to join the private sector. The government of Kenya, in the wake of a recent doctors' strike, has acknowledged that up to three quarters of doctors will have left the government payroll three years after joining the public health sector (WHO, 2010).

A study by Timothy and Jeanette (2007) found that in Kenya, patients travel long distances to access specialized treatment. Chemotherapy and radiotherapy is only accessible in the urban centres, severally restricting access to those requiring this service. Challenges faced by most Kenyans in accessing health care include ignorance, lack of information on cancer. Lack of diagnostic and treatment facilities, high cost of treatment and high poverty index. There are also scarce medical supplies, which is occasioned by poor administration and distribution procedures and general inefficiency in the central procurement system (Timothy and Jeanette 2007).

The challenges in medical supplies in public health facilities is are occasioned by bad procurement decisions, corruption, poor institutional set-ups, decline in donor funding, and to changes in macroeconomic situations. There is also a lot of conflict of interest with many health personnel employed in the public sector operating their own private clinics and

hospitals, or are employed in the private sector, resulting in workforce shortages when patient go to seek medical treatment with some being referred to the private clinics by the same practitioners. For example, consultant doctors in government hospitals work 8 hours per week instead of 24 hours (Kimuyu et al, 2000). When private practice is combined with public employment, the latter suffers because of consultant's lateness or absence at public facilities resulting in delays in performing required functions.

2.3.4 Provision of Cancer Medication

Cancer drugs include chemotherapy, biological therapies, hormone therapies and use of bisphosphonates. Recently, patients living with cancer, medical professionals and the medicines industry have expressed concerns about the mounting challenges in getting suitable, affordable and impartial patient access to new oncology products under current regulatory and reimbursement arrangements (Prostate Cancer Foundation of Australia 2013). The discovery of newer cancer therapies have resulted in higher costs of products, which have escalated rapidly in recent years, and which in turn affect affordability and access to cancer care which cancer patients and their families depend for their lives and their health. Many cancer patients accrue thousands of shillings in drug expenses annually, with most having inadequate insurance coverage, meaning most cannot afford proper cancer treatment. Similarly, there have been shortages of older but critical oncology therapies leaving many people vulnerable. Access means that all patients should be able to obtain the medications recommended by their oncologist, at affordable costs and in a timely manner. The structures that make this possible include the cancer care system, national health insurance plans and private insurance (WHO, 2009).

According to Timothy and Jeanette (2007) survey report Oncology treatment resources are limited in Kenya, with only four radiation machines for 45 million people in Kenyatta hospital. Studies done have shown that many patients who start their treatment at Kenyatta hospital do not finish, due to the following challenges : travelling long distances, constraint of cash following the processes and length of Cancer treatment and postponement of their appointments following long queues , breakdown of machines, shortage of medical personnel.

Despite the policy and research attention on ensuring equitable access equal access for equal need to health care, research continues to identify inequities in access to cancer medication. Out of pocket costs for medication and other therapies have risen in past few years, including

higher insurance costs which lead to financial hardships as cancer treatments deplete available resources and can lead to debt. Patients are now more vulnerable financially, because the illness and the treatment impedes their ability to work, and leads to loss of employment further impacting on their financial woes. It is critical to consider patient access to required cancer drugs and other therapies, if the government wants to improve in delivery of quality cancer care to its population.

2.4 Theoretical Framework on Cancer Treatment

A theoretical framework is the structure that supports concepts like a theory of a research study and provides guidance on why the research problem is under study, determining what things to measure and statistical relationships to work with. According to Zima, (2007) a theory is a set of principles developed to explain a group of facts especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural occurrences. The Theory of Health Behavior which is discussed below closely depicts the focus of this study.

2.4.1 Theory of Health Behavior

The theoretical framework of a research project relates to the philosophical basis on which the research takes place, it establishes structure that guides the research and supports investigation and justification of the study to address a research problem. It is a presentation of a theory that explains a particular problem and includes the variables one intends to measure and the relationships they seek to understand. The theoretical framework, therefore, "has an implication for every decision made in the research process" (Mertens, 1998). Theoretical framework helps one consider the limitations associated with one's theories and reduce bias that may influence interpretation. The starting point is reviewing literature review , identifying the gaps and formulating of the research problem. Description of the variables is important in order to understand the relationship between variables and this helps to identify theory and explain research problem. Health care is a dynamic industry that involves changes in Medicare, insurance, medical practice, clinical trials and regulations. Contingency management theory articulates that to keep up with changing requirements and trends, management should remain flexible and capable of reorganizing structurally and procedurally. Resource theory compliments contingency theory by postulating that for organizations to survive, they need to manage based on available resources around them and maximize on the same. Both theories share the view that rather than allow outside forces to

affect the organization negatively, the organizations can anticipate and adopt management approaches rooted in change (Fazio & Roskos –Ewoldsen, 1994).

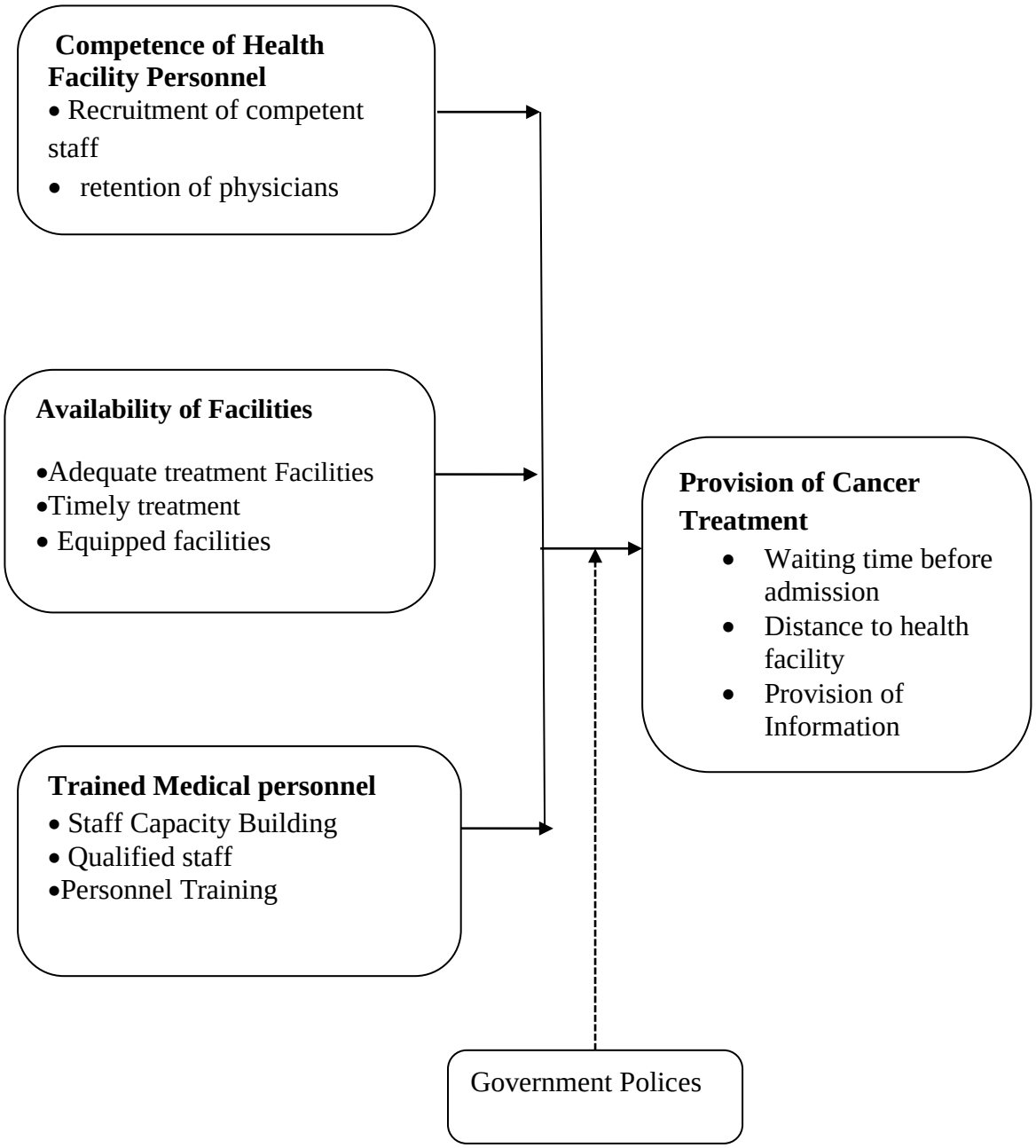
Many organizations have improved their delivery of services by successfully changing their attitudes toward patient care and adopted a patient-centered approach to management. Instead of developing systems that are cost-efficient, hospitals and health care providers have opted to adapt technologies that enable delivery of the best patient care possible. Best financial results can be achieved through medical and quality service excellence. Top managers now encourage collaboration between departments and interdisciplinary approaches to medicine and formation of multidisciplinary teams to optimize on quality of care given.

Health promotion programs can help to improve health, by focusing on prevention, reducing cost of medical treatment, reduce disease risks, reduce premature deaths, manage chronic illnesses, and improve the well-being, health status and quality of life of individuals, families, communities, organizations and nations. Successful health promotion programs are based on a clear understanding of the targeted health behaviors and their impact. They are developed and managed using strategic planning models, and are continually improved through meaningful evaluation. The purpose of health promotion is to positively influence the health behavior of individuals and societies as well as the living and working conditions that influence their health.

2.5 Conceptual Framework

A conceptual framework is a representation of the concepts in a study sometimes done diagrammatically to provide a clear picture of the variables to be explored in the study (Polit & Beck, 2012). Additionally, a conceptual framework in research studies is a useful guide on what should be included in the tool of data collection and may guide the study's discussion (Rees, 2007).

Independent Variables ***Dependent Variable***



Moderating Variable

Figure 1: Conceptual Framework

2.6 Knowledge Gap

Several scholars and researchers have reviewed Cancer treatment Adhu (2013) studied the challenges of cancer treatment at Jaramogi Oginga Odinga Teaching and Referral Hospital. The major challenges revealed in the study highlighted inadequate resources which made it difficult for the organization to execute cancer treatment effectively. Okech (2013) examined challenges of cancer treatment by private hospitals in Nairobi County. The study found that lack of funding for the plans and that the ever changing Government policies were a key hindrance to effective cancer treatment.

Wanjuki (2011) studied the prevalence and management of cancer pain in ambulatory patients at Kenyatta National Hospital. The study found that a high proportion of cancer patients getting inadequate pain management. Sego, (2010) did a study that aimed to establish the perceptions of women with ovarian cancer towards health care service utilization. Analyses showed that individual and provider variables were not significant in influencing perception towards health care service utilization. Most or the chemotherapy drugs are not available in the hospital forcing the women to buy from elsewhere. This significantly affected the women's perception negatively. Waiting and booking time was too long it also caused a negative perception towards healthcare service utilization. The findings showed that 91 % of women with ovarian cancer have a positive perception towards healthcare service utilization.

From the assessment of research commenced, it is evident that there are few studies that have looked at the factors influencing provision of Cancer treatment to the public health facilities in Kenya, hence a research gap. This study therefore has tried to address this gap by investigating the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi.

2.7 Summary of Literature Review

This chapter reviews literature on the research study with the first section exploring the theoretical Foundation on provision of Cancer Treatment. The following section provides the conceptual framework on the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. The chapter also explores the empirical review of various authors, who have done research on provision of Cancer treatment to the public health facilities placing more emphasis on objectives of this study which are: To assess how competence of health facility

personnel has influenced provision of Cancer treatment in the public health facilities; To establish how availability of facilities has influenced its provision in the public health facilities and; To establish how trained medical personnel has influenced its provision in the public health facilities.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This section identifies the procedures and methods that will be used to complete the study. This chapter includes the research design and methodology to be used to test the variables, the population , samples size, technique and sampling frame, type of data to be collected , data collection instrument and procedure, piloting procedure, validity and reliability of the instrument, and discussion of the data presentation and analysis.

3.2 Research Design

A descriptive survey design was used in this study. Mugenda and Mugenda (2003) describes design as a systematic, empirical inquiring into which the researcher collects information without changing or manipulating the environment. This type of study gives information about naturally occurring behavior, attitudes, health status or other characteristics of a particular group on people. Descriptive survey studies involve interation between researcher and participant, and may involve collection of information by conducting surveys or interviews. In this research, descriptive survey design is more appropriate because the study seeks to build a profile about the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi.

3.3 Target Population

Target population in statistics is the particular group of people that a researcher is interested in studying. The results of the research are usually generalized to the given population. According to Bryman and Bell, (2003) a population is a well-defined group of people, collection of services, elements, events, group of things or households that are being investigated. The target population of the study was Kenyatta National Teaching and Referral Hospital**.**

According to KNTRH Human resource records, there are 600 employees by December 2013. The target population of this study consisted of 600 employees of Kenyatta National Teaching and Referral Hospital.

3.4 Sample Size and Sampling Procedures

Sampling method is process used to select the sample from the population. Kombo and Tromp (2006) define a sample as a representative part of a statistical population whose properties are studied to gain information about the whole population. Sample of target staff was drawn from the population of 600 employees at Kenyatta National Teaching and Referral Hospital where 30% of the target population was selected giving a total of 180 employees. Cooper and Schindler (2003) contend that a well-chosen sample of about 10% to 30% of a population will always give a good reliability. The 180 employees were selected using Stratified sampling technique to participate in the actual study. From the 180 employees, simple random sampling was used, as it offers every member of the population an equal chance of being included in the sample. The population data and sample size is as summarized in table 3.1.

TABLE 3.1: Target Population and Sample Size

Department	**Population**	**Sample size (30%)**
Doctors	50	15
Nurses	180	54
Specialists	40	12
Support staff	330	99
Total	**600**	**180**

Source: Human Resource Records (2014)

3.5 Research Instruments

A questionnaire was used as the primary data collection instrument. The questionnaire is a fast way of obtaining data as compared to others instruments (Mugenda & Mugenda, 1999). The questionnaire was divided into sections representing the various variables adopted for study, and was structured to address all the research questions. For each section there were questions which collected the views, opinions, perceptions and attitudes from the respondent. The questionnaire was self-administered through drop and pick method to the officers of the selected departments. Closed-ended questions was used where respondents was restricted to direct answers without further explanation while the Open-ended questions sought for their views on factors that would assist in enhancing satisfactory service delivery. The researcher

used assistants to assist with dropping off, follow up and collection of the questionnaires to be completed by the designated respondents. Telephone calls were also used to follow up on progress of response from respondents.

3.5.1 Pilot test

Piloting of the questionnaire was done to identify questions that were not clear in order to refine the questions before it can be administered to the selected sample and also highlight problems with the questionnaire that may lead to biased answers. Before the actual data collection, piloting of questionnaire was done among ten employees of Kenyatta National Teaching and Referral Hospital who will not participate in the actual study.

3.5.2 Validity of the Research Instrument

Validity is the extent to which an instrument measures what it is meant to measure and performs as it is designed to perform. It is not possible for an instrument to be 100% valid, so validity is generally measured in degrees. According to Somekh and Cathy (2005) It is a measure of the degree in which the test used is truly measuring what it was intended to measure. Validation involves collection and analysis of data to assess the accuracy of the instrument. A good measure of validity is use of pilot testing. The researcher intends to select a pilot group of 10 individuals from the target population to test the validity of the research instruments.

External validity can be defined as the degree to which the results of a study can be generalized from a sample to a population. An instrument that is externally valid helps obtain population generalizability, or the degree to which a sample represents the population. Content validity is concerned with a test's ability to include or represent all of the content of a particular construct or the appropriateness of the content of an instrument. In this study, it is a measure of the degree to which data collected using a particular instrument represents a specific domain or content of a particular concept or the measures that accurately assess what the researcher wants to know. Opinions of experts in the field of study were used to establish the validity of the research instrument and facilitate the necessary revision and modification of the research instrument used.

3.5.3 Reliability of the Research Instrument

Reliability eases issues on applicability, administration and interpretation of an instrument by research subjects and the researcher .Reliability is the consistency of a set of measurement items (Cronbach, 1951). A measure is considered reliable if a person's score on the same test given twice is similar or the instrument consistently measure what it is intended to measure. It is important to remember that reliability cannot be calculated, it is estimated. There are four general estimators of reliability, but two were used in this study: Internal consistency reliability, which measures two tests constructed the similarly. The researcher used the most common internal consistency measure known as Cronbach's alpha (α). It indicates the extent to which a set of test items can be treated as measuring a single latent variable (Cronbach, 1951).

In order to test the reliability of the instruments, internal consistency techniques was applied using Cronbach's Alpha. The alpha value varies between 0 and 1 with reliability increasing with the increase in value. Cronbanch Alpha was therefore used to test reliability of the instrument and the cutoff point of 0.7 was considered as seen in table 3.2.

TABLE 3.2: Factor Loadings

Factors	Cronbach's Alpha
Competence of Personnel	.743
Adequacy of Facilities	.792
Availability of trained personnel	.843

The second estimator used was the test-retest technique where the same test was given to a group of respondents in similar characteristics as the actual sample, this measures consistency of a measure over time. The tests were repeated after one week interval and scores obtained was correlated to get the coefficient of reliability.

3.6 Data Analysis and Presentation

This section looks at the techniques used to analyze data collected and test the variables. Questionnaires were sorted and completed questionnaires arranged for data analysis to be done, including editing, coding, entering and cleaning the data, before commencing processing of the responses,

In order to analyze collected data the descriptive, inferential and test statistics analysis tools are required Mugenda, (2008). The completed questionnaires will be checked for completeness to ensure consistency before processing the responses. The data was coded to enable the responses to be grouped into various categories.

Data collected was purely quantitative and was analyzed by descriptive analysis including SPSS (V. 21.0) and MS Excel to describe the data and is to investigate the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. Descriptive statistics which included mean, standard deviation, frequencies and percentages as well as correlation analysis was used to analyse the entire three research objectives. Open ended questions and responses were grouped into broad categories and the frequencies calculated.

Interval scale was used to analyze the variables under the following objectives: a) To assess how competence of health facility personnel, influences provision of Cancer treatment in the public health facilities in Nairobi, Kenya. b) To establish how availability of facilities influence provision of cancer treatment in the public health facilities in Nairobi, Kenya.
Nominal/Ordinal scale was used to analyze the variables under the remaining objective: c) To establish how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya.

3.7 Ethical Considerations

Taking into consideration the sensitivity of some information to be collected, the researcher is morally obligated to treat the information in confidentiality. The findings in the surveys must be kept anonymous to avoid reluctance of respondents divulging full information.. The researcher also sought permission from Kenyatta National Teaching and Referral Hospital to collect data by using an introduction letter from the university.

3.8 Operationalization of the Variables

This section describes how the various variables of the study interlink and the factors to be measured under each variable. Correlation of the variables was done using the Pearson's correlation coefficient.

TABLE 3.3 Operationalization of the Variables

Research objective	Type of variable	Scale of Measurement	Data collection Methods	Level of Scale	Approach of Analysis	Level of Analysis
To assess how competence of health facility personnel influence provision of Cancer treatment in the public health facilities in Nairobi, Kenya.	Independent variable	•Human resource strategies •Selective hiring •Effective administration	Questionnaires	Interval	Quantitative	Descriptive and Correlation

To establish how availability of facilities influence provision of cancer treatment in the public health facilities in Nairobi, Kenya.	Independent variable	•Adequate equipment and facilities •Available information of treatment options •Timely treatment	Questionnaires	Interval	Quantitative	Descriptive and Correlation
To establish how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya.	Independent variable	• Capacity Building • Inadequate qualified and trained staff	Questionnaires	Nominal/ Ordinal	Quantitative	Descriptive and Correlation
Provision of Cancer Treatment	Dependent variable	• Waiting time before treatment • Distance to health facility • Provision of Information	Questionnaires	Nominal/ Ordinal	Quantitative	Descriptive and Correlation

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter entails a detailed analysis of the data collected from KNH staff dealing with cancer. It begins by analyzing data as per the research questions which guided the study. Different types of analytical tests were used in the data analysis process. The study was guided by four objectives which were; to establish how affordability of cancer treatment influence provision of Cancer treatment in public health facilities in Nairobi, Kenya, to assess how competence of health facility personnel influence provision of Cancer treatment in the public health facilities in Nairobi, Kenya, to establish how availability of facilities influence provision of cancer treatment in the public health facilities in Nairobi, Kenya and to establish how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya. The study targeted a sample of 180 respondents but achieved a response of 160 completed questionnaires. A total of 160 responded indicating 89 percent response rate. Drop and pick method was used while personal face to face visits boosted the data collection efforts. Personalized letters and follow-up telephone calls to the respondents also improved the response rate.

4.2 Demographic Characteristics

The objective of the study was to establish the various demographic characteristics of the respondents. These included; gender, age, level of education and experience. These factors according to Argote, (2000) are vital if one want to get effective high quality improvement in hospital settings.

4.2.1 Gender of Respondents

Table 4.1 presents findings relating to the gender of the respondents. This was considered to be important information relating to the background of the respondents.

TABLE 4.1: Gender of the Respondents

	Distribution	
Gender	**Frequency**	**Percentage**
Male	102	64
Female	58	36
Total	**160**	**100**

The results of the study clearly show that a higher percentage of the respondents were males (64 percent), while 36 percent were female. These results indicate that there is negligible gender consideration in the organization.

4.2.2 Age of the Respondents

Table 4.2 presents findings with regards to the age of the respondents. Age is considered to be a key variable with regards to the background information because it enables the researcher to understand how age influences change acceptance by different employees at KNH.

TABLE 4.2: Age of the Respondents

	Distribution	
Age	**Frequency**	**Percentage**
18-24 years	22	14
25-30 years	42	26
31-34 years	50	32
34-40	23	14
41-44	23	14
Total	**160**	**100**

As observed in the table 4.2, bulk of the respondents (32 percent) were between the ages of 31-34 years, closely followed by those with the age ranging between 25-30 years (26 percent) and finally the age brackets of 34-40 and 41-44 at 14 percent.

4.2.3 Level of Education

Table 4.3 presents findings with regards to the level of education of the respondents.

TABLE 4.3: Level of Education

Level of Education	**Frequency**	**Percent**
College	93	58%
Secondary	4	2%
Post Graduate	28	18%
Bachelors' degree	35	22%
Total	**160**	**100%**

40% of respondents had a bachelors or post graduate, while majority of the respondents had attained college level education (58.3%). Only a few (2.2%) had secondary level education.

4.2.4 Length of Service at KNH

Table 4.4 presents outcomes on the length of service the respondents have worked in KNH

TABLE 4.4: Length of Service in KNH

Length of Service	Frequency	Percent
1-5 years	56	35%
6-10 years	52	33%
11-15 years	40	25%
16-20 years	12.8	8%
Total	**160**	**100%**

Table 4.4 shows the results of the respondents according to the number of years worked in KNH. 35 percent had worked for between 1-5 years, 33 percent for 6-10 years, and 25 percent for 11-15 years while 8 percent had worked for between 16-20 years.

4.3 Competence of Health Facility Personnel

Informed by findings by Angote (2000) in order to produce high-quality outcomes and effective quality improvement, a hospital requires a highly skilled multidisciplinary staff comprised of physicians, nurses, administrators, allied professionals and ancillary staff .The study sought to determine the influence of competence of health facility personnel on provision to cancer treatment. The study assessed the extent to which competence of health facility personnel has influenced provision of Cancer treatment in the public health facilities in Nairobi.

Table 4.5 presents findings with regards to the competence of Health facility personnel in the health sector in Kenya.

TABLE 4.5: Competence of Health Facility Personnel

Statement	Frequency	Percent
Very Great Extent	100	62%
Great Extent	32	20%
Moderate Extent	16	10%
Little Extent	12	8%
No Extent	0	0%
Total	**160**	**100%**

As seen in the study findings, majority of the staff (82%) were certain that competence of health personnel influenced access to cancer treatment as shown by 62% and 20% reporting the influence to a very great extend and great extent respectively. Few (10%) reported moderate influence while others (8%) reported little influence.

4.3.1 Highly Skilled Medical Personnel are Critical to Producing High-Quality Outcomes and Effective Treatment

Table 4.6 presents findings with regards to how highly skilled medical personnel are critical to producing high-quality outcomes and effective treatment.

TABLE 4.6: Highly Skilled Medical Personnel are Critical to Producing High-Quality Outcomes and Effective Treatment

Statement	Frequency	Percent
Strongly Agree	67	42%
Agree	45	28%
Uncertain	13	8%
Disagree	19	12%
Strongly Disagree	16	10%
Total	**160**	**100%**

The results of the respondents view indicate that 42 percent of the respondents strongly agree that highly skilled medical personnel are critical to producing high-quality outcomes and effective treatment, 12 percent of the respondents disagree, 10 percent of the respondents

strongly disagree, 28 percent of the respondents agree, while 8 percent of the respondents are uncertain.

4.3.2 Recruitment and Retention of Highly Trained Medical Staff.

Table 4.7 presents findings with regards to how the hospitals need to prioritize recruitment and retention of highly trained medical staff.

TABLE 4.7: Recruitment and Retention of Highly Trained Medical Staff.

Statement	Frequency	Percent
Strongly Agree	90	56%
Agree	48	30%
Uncertain	6	4%
Disagree	10	6%
Strongly Disagree	6	4%
Total	**160**	**100%**

As shown, 56 percent of the respondents strongly agree, 30 percent agree, 4 percent strongly disagree and 6 percent disagree, while 4 percent are uncertain that the hospitals need to prioritize recruitment and retention of highly trained medical staff.

4.3.3 Building Hospital Capacity

Table 4.8 presents findings with regards to how building capacity to attract and employ an adequate number of trained medical personnel thereby improving efficiency of service delivery in public hospitals.

TABLE 4.8: Building Hospital Capacity

Statement	Frequency	Percent
Strongly Agree	83	52%
Agree	51	32%
Uncertain	10	6%
Disagree	6	4%
Strongly Disagree	10	6%
Total	**160**	**100%**

The findings clearly show that 52 percent of the respondents strongly agree, 32 percent of the respondents agree, 6 percent of the respondents strongly disagree and 4 percent of the respondents disagree while 6 percent of the respondents are uncertain that hospitals need to build capacity to attract and employ an adequate number of trained medical personnel thereby improving efficiency of service delivery in public hospitals.

4.3.4 Implementing Effective Human Resource Strategies

Table 4.9 presents findings regarding how to facilitate service quality and growth; hospitals must implement effective human resource strategies.

TABLE 4.9: Implementing Effective Human Resource Strategies

Statement	Frequency	Percent
Strongly Agree	86	54%
Agree	60	38%
Uncertain	8	4%
Disagree	3	2%
Strongly Disagree	3	2%
Total	**160**	**100%**

The observations are 54 percent of the respondents strongly agree, 38 percent agree, 2 percent of the respondents strongly disagree, 2 percent of the respondents disagree while 4 percent of the respondents are uncertain that in order to effect quality service delivery and financial growth, hospitals need to implement effective human resource strategies.

4.4 Adequacy of Facilities

The study sought to determine the extent to which adequacy of facilities affected access to cancer treatment in Kenya.

4.4.1 Development of Hospital Facilities

Table 4.10 presents findings with regards the requirement to develop facilities that give caregivers treatment options for their patients.

TABLE 4.10: Development of Hospital Facilities

Statement	Frequency	Percent
Strongly Agree	29	18%
Agree	105	65%
Uncertain	6	4%
Disagree	18	11%
Strongly Disagree	2	2%
Total	**160**	**100%**

Table 4.10 reveals that 18 percent of the respondents strongly agree, 65 percent agree, 4 percent are uncertain, 11 percent disagree while 2 percent strongly disagree that there is need to develop facilities that give caregivers that give caregivers treatment options for their patients.

4.4.2 Hospitals Require Technological Facilities that Enable Timely and Relevant Treatment Decisions to be made Based on the Latest Available Scientific Information

Table 4.11 presents findings with regards to how hospitals need to have technological facilities that enable timely and relevant treatment decisions to be made based on the latest available scientific information

TABLE 4.11: Hospitals Need to have Technological Facilities that Enable Timely and Relevant Treatment Decisions to be Made Based on the Latest Available Scientific Information

Statement	Frequency	Percent
Strongly Agree	43	27%
Agree	88	55%
Uncertain	6	4%
Disagree	6	4%
Strongly Disagree	13	10%
Total	**160**	**100%**

Table 4.11 reveals that 27 percent of the respondents strongly agree, 65 percent agree, 45 percent are uncertain while 4 percent disagree as 10 percent strongly disagree that hospitals

need to have technological facilities that enable timely and relevant treatment decisions to be made based on the latest available scientific information.

4.4.3 Public Hospitals in Kenya Require Funding to Rehabilitate and Improve on Facilities and Equipment Available to Ensure Effective and Efficient Service Delivery.

Table 4.12 presents findings with respect to how Public hospitals in Kenya require funding to rehabilitate and improve on facilities and equipment available to ensure effective and efficient service delivery.

TABLE 4.12: Public Hospitals in Kenya Require Funding to Rehabilitate and Improve on Facilities and Equipment Available to Ensure Effective and Efficient Service Delivery

Statement	Frequency	Percent
Strongly Agree	112	70%
Agree	32	20%
Uncertain	8	5%
Disagree	32	2%
Strongly Disagree	5	3%
Total	**160**	**100%**

Table 4.12 reveals that 70 percent of the respondents strongly agree, 20 percent agree, 5 percent are uncertain while 2 percent disagree as 3 percent strongly disagree that Public hospitals in Kenya require funding to rehabilitate and improve on facilities and equipment available to ensure effective and efficient service delivery.

4.4.4 Shortage of Cancer Drugs in Many Public Hospitals

Table 4.13 presents findings with regards how cancer drugs are not always available at many public hospitals.

TABLE 4.13: Shortage of Cancer Drugs in Many Public Hospitals

Statement	Frequency	Percent
Strongly Agree	96	60%
Agree	19	12%
Uncertain	32	20%
Disagree	10	6%
Strongly Disagree	3	2%
Total	**160**	**100%**

Table 4.13 reveals that 60 percent of the respondents strongly agree, 12 percent agree, 20 percent are uncertain while 6 percent disagree as 2 percent strongly disagree that there is a shortage of cancer drugs in many public hospitals. From an interview with Dr. Najmu Adamali, a radiologist at Cancer Care Kenya and tutor at the KNH radiology centre, it was revealed that KNH has two Cobalt 60 machines with limited capability to optimally treat complex cases. According to Catherine Nyongesa, a senior oncologist at KNH and chairperson of Kenya Society of Haematology and Oncology, other machines available at the hospital were; one HDR selection Brachytherapy machine, one superficial X-ray Therapy machine, A simulator, One treatment planning machine, equipment for patient immobilization, a suite for radio iodine therapy which accommodates two patients at a time, ten diagnostic X-ray machine, and a fully equipped theatre for staging of cancer of the cervix cases and insertion of intracavitary after loading system applicators. The senior specialist oncologist at KNH reported that to operate appropriately, KNH would need about 10 machines but it only has two.

4.5 Availability of Trained medical personnel

The final objective of the study was to establish how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya. This subsection presents findings with respect to this particular objective.

4.5.1 Most Developed and Developing Countries are Reporting a Shortage of Doctors

Table 4.14 presents results of findings with regards to how many most developed and developing countries are reporting a shortage of doctors

TABLE 4.14: Most Developed and Developing Countries are Reporting a Shortage of Doctors

Statement	Frequency	Percent
Strongly Agree	88	55%
Agree	56	35%
Uncertain	8	5%
Disagree	8	5%
Strongly Disagree	0	0%
Total	**160**	**100%**

Table 4.14 reveals that 55 percent of the respondents strongly agree, 35 percent agree, 5 percent are uncertain while 5 percent disagree as 0 percent strongly disagree that indeed most countries around the world are reporting a shortage of doctors.

4.5.2 Many Countries Have Few Cancer Specialists

Table 4.15 presents finding with regards to how many countries has few cancer specialists who are concentrated in a few health facilities.

TABLE 4.15: Many Countries Has Few Cancer Specialists

Statement	Frequency	Percent
Strongly Agree	115	72%
Agree	24	15%
Uncertain	5	3%
Disagree	8	5%
Strongly Disagree	8	5%
Total	**160**	**100%**

Table 4.15 reveals that 72 percent of the respondents strongly agree, 15 percent agree, 3 percent are uncertain while 5 percent disagree as 5 percent strongly disagree that many countries has few cancer specialists who are concentrated in a small number of health facilities in urban areas.

4.5.3 Kenya has Insufficient Numbers of Trained Personnel to handle Cancer cases

Table 4.19 further presents' findings regarding the insufficient numbers of trained personnel to deliver cancer care in Kenya.

TABLE 4.16: Kenya has Insufficient Numbers of Trained Personnel to Handle Cancer Cases

Statement	Frequency	Percent
Strongly Agree	110	69%
Agree	38	24%
Uncertain	12	7%
Disagree	0	0%
Strongly Disagree	0	0%
Total	**160**	**100%**

Table 4.16 reveals that 69 percent of the respondents strongly agree, 24 percent agree, 7 percent are uncertain while 0 percent disagree as 0 percent strongly disagree that Kenya has insufficient numbers of Trained Personnel to handle Cancer cases.

One of the effects of low doctor to patient ratio as reported by Dr. Fredrick Chite of the KNH was that insufficient number of qualified practitioners has increased deaths due to cancer because of delayed diagnosis or misdiagnosis of the illness leading to delayed treatment.

4.5.4 Most Patients Seek Primary Treatment in Lower Level Health Facilities First

Table 4.17 further presents findings on how most patients seek primary treatment in lower level health facilities first, where diagnosis of cancer is hampered by lack of facilities and qualified staff.

TABLE 4.17: Most Patients Seek Primary Treatment in Lower Level Health Facilities First

Statement	Frequency	Percent
Strongly Agree	86	54%
Agree	45	28%
Uncertain	0	0%
Disagree	18	11%
Strongly Disagree	11	7%
Total	**160**	**100%**

Table 4.17 reveals that 54 percent of the respondents strongly agree, 28 percent agree, while 11 percent disagree as 7 percent strongly disagree that many patients seek care in lower level health facilities first where diagnosis of cancer is hampered by lack of facilities and qualified staff.

4.5.5 Shortages of Medical Supplies in Public Health Facilities

Finally table 4.18 presents' findings with regards to how shortages of medical supplies in public health facilities are partly due to poor procurement procedures, changes in macroeconomic and corruption.

TABLE 4.18: Shortages of Medical Supplies in Public Health Facilities

Statement	Frequency	Percent
Strongly Agree	85	53%
Agree	61	38%
Uncertain	0	0%
Disagree	11	7%
Strongly Disagree	3	2%
Total	**160**	**100%**

Table 4.18 reveals that 35 percent of the respondents strongly agree, 38 percent agree, while 7 percent disagree as 2 percent strongly disagree that how shortages of medical supplies in public health facilities is partly due to poor procurement procedures, changes in macroeconomic and corruption.

Table 4.19 presents the correlation analysis of the various variables under study.

TABLE 4.19: Correlation Analysis

Factors		**Access to treatment**
Competence of Personnel	Correlation	0.787
	Significance (2-tailed)	0.001
	df	160
Adequacy of Facilities	Correlation	0.786
	Significance (2-tailed)	0.02
	df	160
Doctor to Patient ratio	Correlation	0.913
	Significance (2-tailed)	0.002
	df	1604

The correlation analysis for the independent variables and provision of treatment was computed against provision to treatment (number of patients accessing cancer treatment per unit time). The Pearson's correlation matrix indicates that there was a positive relationship between each of the independent variables of Competence of Personnel, Adequacy of Facilities and trained personnel all showing high Pearson's (r) value above 0.7 .Therefore showing that each of the independent variables have a strong positive relationship with provision to treatment. This correlation expounds how one variable moved together with another in explaining the influence of each to provision to treatment. Strongest correlation was found between trained personnel (Doctor to Patient ratio) and provision to treatment with coefficient factor of 0.913. The results indicate that when the independent variables significantly influence the provision to treatment by cancer patients.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter comprises the following four segments: summary, discussion, conclusions, and recommendations. The initial section provides a summary of the study objectives, methodology and the outcomes. The second section looks at the major findings of the study with reference to to the specific objectives. The third section discusses the conclusions as regards o the specific objectives, while the fourth chapter looks at use of the findings and results.

5.2 Summary of the Findings

The aim of this study was to explore the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. To achieve this the study was guided by the three objectives that include; To investigate how competence of health facility personnel has influenced provision of Cancer treatment in the public health facilities in Nairobi, Kenya; To establish how availability of facilities has influenced its provision in the public health facilities in Nairobi, Kenya and; To investigate how trained medical personnel influence of cancer treatment provision in the public health facilities in Nairobi, Kenya. The study used a descriptive survey design. The target population of this study consisted of 600 employees of Kenyatta National Teaching and Referral Hospital. Simple random sampling technique was used to select 180 employees from Kenyatta National Teaching and Referral Hospital to participate in the actual study. A total of 160 responded which represented 89% response rate. Questionnaires were sorted and fully completed questionnaires were considered for analysis. The data collected was coded and analyzed using the Statistical Package for Social Science. Appropriate descriptive statistics which include means , standard deviation, frequency and percentages were employed. The data was presented using tables. The study found that competence of personnel was a key factor influencing access to cancer treatment with a coefficient of 0.787 which was significant and 95% confidence level. Another key influencing factor to access to cancer treatment was adequacy of facilities which showed a strong relationship with access to cancer treatment showing a coefficient of 0.786 indicating a positive relationship in influencing accessing to cancer treatment. The last variable which

was on availability of trained personnel (doctor to patient ratio) showed a positive relationship with a Pearson's r value of 0.913.

5.3 Discussions of the Study

The study sought to determine the influence of competence of health facility personnel on access to cancer treatment in Kenya. The study found that there is dire shortage of competent personnel at KNH to deal with increasing cancer cases reported at the hospital. According to Prof. Othieno Abinya, a medical oncologist and professor of medicine at the University of Nairobi, only six medical oncologists, six radiation oncologists and two oncological gynaecologists are available to deal with increasing number of cases in the country. While according to Anne Korir, the head of Nairobi Cancer registry, about 41,000 new cancer cases are reported every year. This confirms the positive relationship between competence of health personnel and its influence on access to cancer treatment.

According to Argote (2000) highly skilled medical personnel and ancillary staff are critical to producing high-quality and effective outcomes in quality improvement. From the study findings, majority of the staff (82%) were certain that competence of health personnel influenced access to cancer treatment. The study recommended that highly skilled multidisciplinary team are critical to producing high-quality and effective outcomes in quality improvement as well as the need for the public hospitals to maintain highly qualified personnel to enhance better access to cancer treatment. Descriptive correlation statistics showed a positive relationship between competence of personnel and access to cancer treatment. The correlation Pearson's r for the relationship between competence and access to treatment was 0.787 which was significant and 95% confidence level.

The second objective sought to establish the influence of availability of facilities on access to treatment. The findings of the study were that, availability of facilities had a strong positive relationship with access to cancer treatment. The Pearson's correlation coefficient for this variable was 0.786 indicating a positive relationship in influencing accessing to cancer treatment. This strong influence on access to cancer treatment was confirmed by the study findings on the poor cancer treatment facilities available at the KNH. From the study findings, it was revealed that KNH has two Cobalt 60 machines which are being used by KNH and are equipped with limited capability to optimally treat complex cases. According to Catherine Nyongesa, a senior oncologist at KNH and chairperson of Kenya Society of

Haematology and Oncology, other machines available at the hospital were; one HDR selection Brachytherapy machine, one superficial X-ray Therapy machine, A simulator, One treatment planning machine, equipment for patient immobilization, a suite for radio lodine therapy which accommodates two patients at a time, ten diagnostic X-ray machine, and a fully equipped theatre for staging of cancer of the cervix cases and insertion of intracavitary after loading system applicators. The senior specialist oncologist at KNH reported that to operate appropriately, KNH would need about 10 machines but it currently only has two.

However, the National government has undertaken a major project to enable all counties to be able to absorb much of the pressure on KNH by equipping at least one hospital in each of the 47 counties with radiotherapy machines and capacity to handle cancer cases enabling early diagnosis (Ministry of Health, 2015). This is expected to solve the issue of inadequate cancer treatment facilities at KNH.

Finally the study sought to determine the influence of number of qualified personnel on access to cancer treatment. The correlation coefficient for this variable registered strong positive relationship as an influencing factor of access to treatment with a coefficient of ($r = 0.913$). According to the study findings, the KNH cancer treatment centre 70 to 100 patients visit daily, most of them seeking to see a cancer specialist. The available specialists can only attend to 30 patients a day. This, the study established that the cancer treatment centre has schedules of patients who are sick but can be able to get doctor attention one year later. Dr. Catherine Nyongesa, a senior oncologist at KNH reported that KNH has more than 1,000 patients waiting in the queue to be treated in 2016 because they cannot afford treatment outside KNH. Of those, Dr Nyongesa estimated that 70 per cent that can't afford cancer care nor can they access basic medical care at the hospital, most of who end up dying painful deaths at home, while those who can afford seek treatment abroad and in private facilitates.

A key factor that has been studied previously by other researchers but not detailed in this study is the influence of affordability on provision of cancer treatment in Kenya. User fees have excluded many people from care as evidenced by the number of patients who struggled to pay for health care from limited economic resources. The resultant effect becomes under-use of health services. This is the primary reason for lack of yearly screening for most of the patients and the reason why there is high numbers of those seeking treatment. Therefore, it is important to reduce cost barriers and improve geographic access to cancer treatment for patients so as to reduce cancer morbidity. When it comes to cancer treatment, the problem is

not just affordability but also accessibility. The country's few cancer specialists are concentrated in a few health facilities in Nairobi (National Cancer Control Strategy, 2011-2016). This inequity in distribution of resources greatly puts at a disadvantage those living outside the city. Wheeler et al (2014), a study in USA, found that urban/rural cost of the cancer treatment could predict whether patients received radiation therapy. Majority of the respondents reported difficulty in meeting the costs of treatment as well as the high indirect costs of having to seek services such as transportation, lost income and the sometimes unbearable long waits. This is in agreement with a study by Maranga et al which found that the barrier to getting treatment is that patients have to pay and yet cannot afford it (Maranga et al, 2013).

5.4 Conclusions of the Study

In conclusion, this study provides evidence that there are key impediments to provision of cancer treatment at KNH. This study revealed significant gaps requiring attention in the fight against cancer in Kenya.

Health care providers play a key role in screening behavior process by increasing awareness about cancer and screening tests. Moreover, some health care providers are the first professional contact point for cancer patients and usually define the journey of treatment that the patients will take, the findings identified some competence challenges that influence provision of cancer treatment. Lack of qualified personnel trained on dealing with cancer issues, long waiting times, lack of drugs, and perceived poor attitudes of Health workers was a recurring factor when assessing the provision of treatment. There is limited number of personnel to deal with cancer cases at KNH. This was the reason for long queues for patients seeking to get consultation with oncologists. Delayed diagnosis and referral of patients results in more social, financial and emotional burden to patients.

Secondly, unavailability of health care resources for diagnosis and treatment was the reason almost all the cancer victims had to seek treatment at KNH. Lack of proper infrastructure in regional centers is the reason for the congestion of cancer patients at the national referral hospital. The radiotherapy unit in KNH is stretched thin as a result leading to the long delays and perpetual queues.

5.5 Recommendations

i. The government could target to subsidize cancer treatment through policy change, increased financing for healthcare and health insurance. This would ensure Oncology care is prioritized and resources are mobilized towards making treatment more affordable to Kenyans

ii. The government should also prioritize early detection/ screening to ensure cancer cases are detected early for better treatment outcomes. Prevention of cancer would be a cheaper option compared to treatment of the same. Palliative care for advanced cases should also be an area of priority for the government

iii. The government should invest in and incentivize training of oncology professionals who would then need to be deployed and retained in county oncology centers. This would improve the number of cancer specialists needed in the country.

iv. More cancer centers should be set up at county levels and properly equipped and staffed to prevent movement of persons from counties to KNH to seek Oncology care .This would help bring down the cost of accessing health care and improve on timely utilization of these services.

5.6 Recommendations for Further Studies

1. More studies should be done to determine if factors found to affect health provision in this study can be applied to other settings other than KNH. These studies would also help publicize cancer as a public health priority.
2. More studies can be done in identifying factors affecting cancer screening, detection and care in the Kenyan population.
3. Studies can be done to identify factors that can improve access to cancer medication, both curative and palliative.

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APPENDICES

Appendix 1: Letter of Introduction

DATE……..

EVERLYNNE MAINNAH

UNIVERSITY OF NAIROBI,
DEPARTMENT OF EXTRA MURAL STUDIES,
COLLEGE OF EDUCATION AND EXTERNAL STUDIES,
P.O.BOX 30197-00100, NAIROBI.

TO
THE OFFICER IN CHARGE,
KNH P.O.BOX 20723-00202,

Dear Sir/Madam,

REF: REQUEST TO COLLECT DATA AT KNH

I am a student of University of Nairobi pursuing a Master of Arts degree in project planning and management. The purpose of this study is to investigate the factors influencing provision of Cancer treatment to the public health facilities in Kenya, with a focus on Kenyatta National Teaching and Referral Hospital in Nairobi. Herein attached, find a questionnaire designed to assist in collecting the necessary data for this research. The study is purely for academic purposes and all information collected from you shall be treated as confidential. In no way shall your name appear in the final report. Upon your request a copy of the thesis shall be availed to you. Your assistance, cooperation and honest responses will be highly appreciated.

Yours faithfully,

EVERLYNNE MAINNAH

Appendix 2: Questionnaire to Respondents

Part A: General Information

1) Gender

Male	[ ]	Female	[ ]

2) Age

18 – 24 Years	[ ]	25 - 30 Years	[ ]
31 - 34 years	[ ]	35 – 40 years	[ ]
41 – 44 years	[ ]	45 – 50 years	[ ]
Over 51 years	[ ]		

3) Level of education

Primary	[ ]	Secondary	[ ]
College	[ ]	Bachelors' degree	[ ]
Others-specify	[ ]		

4) No of years worked at Kenyatta National Teaching and Referral Hospital..

Below One Yr	[ ]	1- 2 Yrs	[ ]	2-4 Yrs	[ ]
4-6 Yrs	[ ]	6- 10 Yrs	[ ]	10 -15 Yrs	[ ]
Above 15 Yrs	[ ]				

Section B : Competence Of Health Facility Personnel

To what extent does competence of health facility personnel has influenced provision of Cancer treatment in the public health facilities in Nairobi?

Very great extent	[ ]
Great extent	[ ]
Moderate extent	[ ]
Little extent	[ ]
No extent	[ ]

To what extent do you agree with the following statements about competence of health facility personnel? Use a scale of 1-5 Where 1 strongly disagree, 2 is disagree, 3 is neutral, 4 is agree and 5 is strongly agree.

Competence Of Health Facility Personnel	1	2	3	4	5
Highly skilled medical personnel are critical to producing high-quality outcomes and effective treatment.					
The hospitals need to place great emphasis on recruiting and retaining highly trained medical staff					
To improve efficiency in service delivery, public sector hospitals must build the capacity to attract and employ an adequate number of highly trained staff					
To facilitate service quality and growth, hospitals must implement effective human resource strategies					

Section C : Adequacy of Facilities

To what extent do you agree with the following statements about adequacy of facilities? Use a scale of 1-5 Where 1 strongly disagree, 2 is disagree, 3 is neutral, 4 is agree and 5 is strongly agree.

Inadequate Facilities	1	2	3	4	5
Hospitals need to develop facilities that give caregivers treatment options for their patients.					
Hospitals need to develop technological facilities that enable timely and relevant treatment decisions to be made based on the latest available scientific information					
Public hospitals in Kenya require funding to rehabilitate and improve on facilities and equipment available to ensure effective and efficient service delivery					
Shortage of Cancer Drugs in Many Public Hospitals					

In general, to what extent do you think adequacy facilities have influenced its provision in the public health facilities in Nairobi?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

No extent [ ]

Section D : Availability of trained personnel

To what extent has availability of trained personnel influenced provision of cancer treatment in the public health facilities in Nairobi?

Very great extent [ ]

Great extent [ ]

Moderate extent [ ]

Little extent [ ]

No extent [ ]

To what extent do you agree with the following statements about Doctor To Patient Ratio? Use a scale of 1-5 Where 1 strongly disagree, 2 is disagree, 3 is neutral, 4 is agree and 5 is strongly agree.

Doctor To Patient Ratio	1	2	3	4	5
Most developed and developing countries are reporting a shortage of doctors					
Many countries has few cancer specialists who are concentrated in a few health facilities					
Kenya has insufficient numbers of Trained Personnel to handle Cancer cases					
Most patients seek primary treatment in lower level health facilities first where diagnosis of cancer is hampered by lack of facilities and qualified staff					
The shortages of medical supplies in public health facilities are partly due to poor procurement procedures, changes in macroeconomic and corruption.					

Section E: General Comments

What is the average cost of diagnosis and treatment of Cancer at KNH, and in your view what can KNH do to make these services more affordable to the average Kenyan?

_____

_____

_____

_____

How many Health personnel have been trained on Cancer care in KNH? And what cadre are they?

How often is the training done/updated and what is the level of certification given?

What type of machines are currently in use for the diagnosis of Cancer in KNH, and how many are they?

What do you think the government can do to improve Cancer preventive, diagnostic and treatment options in Kenya?

************THANK YOU*************