

**FACTORS INFLUENCING UPTAKE OF ONCOLOGY SPECIALIZED
HEALTH CARE SERVICES IN UASIN GISHU COUNTY, KENYA**

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**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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DECLARATION

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DEDICATION

I dedicate this work to my dear daughter and family for their support.

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I acknowledge all my lecturers at Kenya Methodist University Nairobi Campus for their support during the period of my study. I would like to appreciate my supervisors Ms. Eunice Muthoni Mwangi and Mr. Musa Oluoch for the helpful guidance on the research process leading to this final thesis. I would like to acknowledge my colleagues and family members for their spiritual and financial support they accorded me as I developed this thesis. God bless you all.

ABSTRACT

Most cancer patients in Kenya do not have access to available cancer health care facilities, leading to increase in newly diagnosed oncology cases reported each year. Most studies conducted in Kenya lay more emphasis on the increased prevalence and incidence of cancers. Consequently, there is limited empirical research on access to oncology specialized healthcare services in Kenya, a research gap filled by this study. The main objective of this study was to determine factors influencing uptake of oncology specialized healthcare services among patients in Uasin Gishu using; affordability of oncology services, location of the health facility, acceptability of services provided and availability of the oncology specialized healthcare services. Using descriptive research design, the study employed a census survey on population of 142 screened oncology patients in the 18 level 3 and 4 facilities in Uasin Gishu County. Data was collected using structured questionnaires. Data was analysed using descriptive statistics and then inferential analysis with results presented in form of tables and figures. The data was analysed with assistance of Statistical Package for Social Sciences (SPSS) software version 22.0. The study found that affordability of oncology services has a strong significant and positive relationship with uptake of oncology specialized healthcare services in Uasin Gishu County, location of oncology services had a very strong positive significant relationship with uptake of oncology specialized healthcare services in Uasin Gishu County, acceptability of oncology services has a moderate significant relationship with positive effect on uptake of oncology healthcare services in Uasin Gishu County and availability of oncology specialized healthcare services has a very strong positive significant relationship with uptake of oncology specialized healthcare services in Uasin Gishu County. The study reveals that at 0.05 (5%) level of significance, there exists a significant relationship between each of; affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services and uptake of oncology specialized healthcare services in Uasin Gishu County and that 81.92% of change in uptake of oncology specialized healthcare services in Uasin Gishu County is explained by; affordability of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services. The study recommends that since health is a devolved function, the county government of Uasin Gishu should; improve patient access to affordable cancer services through reduction of cost of diagnostics tests and medicines, increase the number of oncology specialized healthcare services screening units as well as clinic across the county, engage adequate and experience and competent oncology specialized healthcare staff, and improve on building capacity to administer the necessary help by training more personnel in the region.

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ABBREVIATIONS AND ACRONYMS

AHMAC	Australian Health Ministers' Advisory Council
AMPATH	Academic Model Providing Access to Healthcare
DUI	Diagnostic services utilization
HIV	Human Immunodeficiency Syndrome
HSM	Health Services Management
KNH	Kenyatta National Hospital
MOMS	Ministry of Medical Services
MOPHS	Ministry of Public health and Sanitation
MTRH	Moi Teaching and Referral Hospital
NGOs	Non-Governmental Organizations
NHA	National Health Accounts
OOP	Out-of-pocket
PPP	Public Private Partnership
PRSP	Poverty Reduction Strategy Paper
SALC	Southern Africa Litigation Centre
SPSS	Statistical Package for Social Sciences
TUI	Therapeutic services utilization
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.0 Overview

This chapter introduces the study by providing background information, the statement of the problem that was addressed, the objective that guided the study as well as the research questions that the study answered, justification and insignificance of the study, and the limitations as well as delimitations facing the study. Also highlighted were the assumptions made during the study and operational definition of terms.

1.1 Background of the Study

Health System Management (HSM) is built on six pillars enabling the health system to function (World Health Organization [WHO], 2016). These six pillars compose of everything from a well-managed civil service to an extensive communications system and include; management and health service delivery (care management), information (data management platform), human resources, risk stratification and predictive modelling, patient engagement and health care financing. This study focused on health service delivery pillar in regards to factors influencing the access to oncology health services in Uasin Gishu County. The health service delivery is about care management which involves, among other functions, the access to quality care services, where patients may only have access to tertiary care through a well-developed referral system (Wangigi, 2014).

Globally, access to oncology health services has contributed to a decline in cancer incidences and mortality (Mutuma et al., 2016). This is on realization that poor uptake to oncology health services escalates incidence of curable cancers. It has been observed that poor uptake to oncology services has led to cancers; contributing to 75%

fatalities in low income countries, 72% in countries of low-middle income, 64% in countries of high middle income, and 46% in countries of high income (Farmer et al., 2010).

In the African continent, access to cancer services is significantly lower than the developed countries (Academic Model Providing Access to Healthcare [AMPATH], 2015), which is associated with poor awareness on access to oncology services and failure by the governments to allocate adequate budgetary resources towards addressing this disease (Global Medicine, 2011). In most African countries, patients pay over 85% of health costs and since majority of the citizens in these countries are low income earners, they avoid seeking for healthcare attention. Accordingly, oncology patients poorly access oncology services to receive treatment for their conditions. Consequently, most oncology patients in Africa suffer of even die from curable cancers. This has escalated cancer related deaths in Africa as witnessed in the year 2002, where estimated more than 500,000 annual deaths occurred from cancer in Africa (AMPATH, 2015).

In Kenya, the prime challenge in access to oncology services is the availability of oncologist specialists where Kenya has only 12 oncologists registered to practice by the licensing board and who rotate around the 4,200 health facilities in the country, which makes it difficult for a great majority of the population to access oncology treatment services. This characterized by; late screening and improper attention on cancer treatment which might result in unavoidable fatalities (Njuguna et al., 2017; Wangigi, 2014).

Uasin Gishu County has a specialized referral center for access to oncology health services among other services offered. Access and uptake of healthcare services is

determined by; referral of patients from regional health facilities in regards to affordability; location of the facility, acceptability; and adequacy of resources. These dimensions correspond to ability of patients; capacity to see; capacity to look for; capacity to achieve; capacity to pay; capacity to have communication (Levesque et al.,2013 Njuguna et al., 2017). Thus, poor access and uptake of oncology specialized service may be attributable to lack of resources, poor access to location of the facility, failure by the patient to accept the utilization of service, and inadequate facilities (Wangigi, 2014).

This study analyzed factors influencing uptake of oncology services among cancer patients in Uasin Gishu County.

1.2 Statement of the Problem

As enshrined in the promulgated constitution of Kenya (2010), access to health service is a human right for all Kenyans, where every citizen is constitutionally entitled to access health care at any health facilities in the country. However, Kenya has an uptake of cancer 3.2% compared to the National Cervical Cancer Prevention program target of 70% (Mutuma et al., 2016). The absence or poor access for oncology services in a specialized referral healthcare facility has subjected most patients to prolonged pain and suffering, which in itself, may result into death. Most oncology cases are reportedly diagnosed at advanced stages, when little could be done to restore the health of the patient (Ferrario, 2017). Generally, poor access to oncology services has escalated the total national mortality rate in Kenya, where 28,000 Kenyans are dying from cancers annually. More so, in Uasin Gishu, there is increased absence or poor uptake of oncology specialized healthcare services. Despite vast empirical research on oncology and uptake, there is no sufficient empirical literature explaining the factors

influencing the increased absence or poor uptake of oncology specialized healthcare services in Uasin Gishu County. This study, however, sought to determine factors influencing uptake of oncology health services in Uasin Gishu County.

1.3 Purposes of the Study

The purpose of this study was to establish the factors influencing uptake of oncology specialized healthcare services in Uasin Gishu County, Kenya.

1.4 Objectives of the Study

The study was guided by following specific objectives

- i. To determine the influence of affordability of services on uptake of oncology healthcare services in Uasin Gishu County.
- ii. To assess the influence of location services on uptake of oncology healthcare services in Uasin Gishu County.
- iii. To determine the effects of acceptability of oncology services on uptake of healthcare services in Uasin Gishu County.
- iv. To determine the effects of availability of oncology services on uptake of healthcare services in Uasin Gishu County.

1.5 Research Questions

The study answered the following questions:

- i. How does affordability of oncology healthcare services influence the uptake of health care services in Uasin Gishu County?
- ii. How does accessibility of oncology healthcare services influence the uptake of oncology health care services in Uasin Gishu County?
- iii. How does acceptability of oncology healthcare services influence the uptake of healthcare services in Uasin Gishu County?

- iv. How does availability of oncology healthcare services influence the uptake of oncology health services in Uasin Gishu County?

1.6 Justification of the Study

Cancer is one of the leading causes of deaths in Kenya, causing 7% of total national mortality every year (Ferlay et al., 2013; Mwangi, 2014). Although some cancers can be easily controlled, Uasin Gishu County is still registering high mortality; this explains a gap in access to quality of specialized oncology healthcare services in the County. Notably, access to healthcare is a major contributor to survival rates and mortality outcomes for oncology patients. Cancer studies done have shown that decreased access to specialized cancer care has been associated with increased mortality (Mwangi, 2014). Despite a wide array of empirical research on oncology and access to healthcare in general, there is limited empirical literature on uptake of oncology healthcare in Uasin Gishu County. This demands for immediate research to provide accurate and relevant information that would help relevant authorities mitigate cases in the county. In locking this gap, this study was conducted to highlight issues of uptake of oncology healthcare services in Uasin Gishu County by explaining the factors that influence accessing specialized cancer services in Uasin Gishu County.

1.7 Significance of the Study

The findings from this study would be useful to various stakeholders in the region. Firstly, the study findings would be beneficial to the general public and oncology patients. The study recommendations would provide valuable information to motivate people requiring oncology services attention for appropriately ensuring timely and adequate access to oncology specialized healthcare services already closer to them. The Kenyan Health System would therefore avert unnecessary deaths and suffering

that come with cancer illness. Secondly, the study findings will be useful to medical policy makers in Kenya while make policies which would propagate the access to oncology health care facilities and improve on the existing ones for increase uptake and utilization of services. This will ensure proper access to health care facilities as envisaged in the health systems policy of the visions 2030 as well as to ensure equitable and accessible health for all. Hopefully, informing health policy makers would indeed enhance achievement of the health pillar in the Kenyan vision 2030 with ease.

The knowledge gained from this study would enrich both health care providers who treat the patients and to the patients themselves on matters related to uptake of oncology healthcare services. Identification of knowledge deficits paves the way for the development of educational programs targeted to health professionals and patients. This study also adds more knowledge in oncology specialized healthcare services field in Kenya, making it useful to academicians and scholars. It provides a good reading material for students in cancer units and other related professionals, exposing other possible areas of research. The study acts as a spring board for other relevant studies to be done among oncology patients and the resulting issues at the advanced and specialized health care service, thus, it was window opener for more research in the area of access to oncology services at the county levels.

1.8 Limitations/Delimitations

1.8.1 Limitations

This study was limited in a number of ways. First, it relied on information from the patients, where some respondents might have felt that they are being disturbed and therefore refuse to participate or give wrong information. In efforts to avoid this, the researcher provided help to respondents in filling of the research instruments and made

frequent follow-ups through patient caregivers and health care staff available at that time. Standardized research instruments were used on all the respondents. The study utilized the services of research assistants, who were trained on data collection.

The study might have been subjected to biasness. However, bias results were reduced through conducting a pre-test study analysis before the research instrument and necessary changes were made at the neighbouring county of Nandi.

1.8.2 Delimitations

Conducting research on uptake of oncology specialized healthcare services in Uasin Gishu County, Kenya was only limited to the patients who have been screened and diagnosed with cancer. The study population was chosen from a smaller region of the republic of Kenya. This population was only representative of Kenyans who pay and who have accessed oncology services and may not be generalized to the entire Kenyan health system but focused on issues found in Uasin Gishu County. This study was conducted with restricted sample cluster to determine uptake of oncology tertiary healthcare services in Uasin Gishu County, Kenya, delimiting the study to geographic areas. The study was limited to Uasin Gishu also, may not be applicable to the entire Republic of Kenya as a Country. In this way there's need for another study using a bigger target population to accomplish more extensive data on oncology tertiary healthcare services in Kenya.

The study established that 81.92% of variation in Uptake of oncology specialized healthcare services in Uasin Gishu County is explained by; affordability of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services. This means there are other factors contributing to 18.08% of variation in uptake of oncology specialized healthcare services in Uasin Gishu County.

So, other studies should be conducted to establish the other factors contributing to 18.08% of variation in uptake of oncology specialized healthcare services in Uasin Gishu County.

1.9 Assumptions of the Study

Assumptions are basic principles that are considered to be true based on logic and reason without proof or verification (Polit & Beck, 2012). This study made the following assumptions: that the samples selected are truly representative of the study population and the information obtained can be generalized to the whole population. The study also assumed that the respondents were honest in their answering of questions and that the research instruments were accurate in achieving the intended objectives.

1.10 Operational Definition of Terms

- Acceptability** Is user friendliness of a service or whether the service conforms to the norms, expectations and cultural behaviors of a population.
- Access** Is the ability or permission to make use of a specific service. The indicators of access are; affordability, location of the facility, acceptability, and adequacy as defined below.
- Accessibility** Is the ease of approach, reach or enters, speak or use something.
- Adequacy** It refers to whether health care workers or health facilities were readily obtainable when needed.
- Affordability** Is having the means to do something, or bear the cost of something without risking serious consequences or inconvenience.
- Availability** Is a characteristic of a resource that is operable usable upon demand to perform its designated function.

Location	Is the geographical distance between the health facility and the patient's residence.
Oncology	Is a branch of medicine that deals with the prevention, diagnosis and treatment of malignant growth.
Oncology specialized services	is diagnosis of cancer, providing consistent and supportive support to put the patient at ease and helping the patient to best control the signs and side effects of cancer
Specialized	Someone or something trained or developed for a particular purpose, more specified and directed towards a specific goal.
Uptake	The action of taking over and creating use of one thing or service offered.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this section, the researcher examined related literature on access to tertiary and specialized healthcare and services in a specific unit from theories and past studies. The purpose of the section is to familiarize readers with the literature that was found beneficial to this study. The study analyzed empirical studies which are useful to detect research deficiencies. The review also helped identify areas that previous researchers and past researchers had not covered. The study also examined several theories which were found useful in the design of a study conceptual framework.

2.2 Affordability of Oncology Health Services

Access to oncology services is mainly financed by personal out of pocket (OOP) sources like households' due disbursement (Wayua, 2017). High reliance on user fees and different due expenditures on access to medical specialty offer a monetary barrier to worry. Low-income and deprived teams are typically additional exposed to evitable cancer risk factors (Tsawe & Susuman, 2014). Literature has shown that low income earners have a greater risk of having cancers (Consultative Group to Assist the Poor [CGAP],2016). Also in poor recognition of the symptoms of cancer, low socioeconomic status and lack of knowledge / awareness are involved, this lack of data in awareness of cancer symptoms, in the context of cancer risk factors and in the correct channels for research of health and later health care in Africa (Kivuti-Bitok et al., 2012;Nwabichie et al., 2018). Cham's (2018) study, for example, has revealed that a low socio-economic status is linked with the remittance rates of carcinoma screening, greater chance of late diagnosis, poor and unfavourable treatment, and increased cancer mortality (Bigby & Holmes, 2005; Macleod et al.,2009;). This implicates

negative attitude as a barrier of access to oncology treatment. Access to tertiary oncology healthcare services in Kenya is affected by the affordability of oncology services as cancer is a very expensive disease to treat. It lays a very heavy financial burden on the patients and their families too (Cheptum et al., 2014).

2.2.1. Level of income

The majorities of Kenyans who are covered by health insurance work in the formal sector and are the richest population. Moreover, the combination of poverty and cancer is too common to be lethal (Cheptum, et al., 2014). Poverty remains an enormous problem in Kenya and is driven by a range of factors: unemployment, political instability. Majority of Kenya, accounting for over 80% of the country's population are poor and consequently have a monetary barrier to healthcare service access as well as different healthcare expenditures (CGAP, 2016; Cheptum et al., 2014). Consequently, healthcare competes with other life's basic requirements such as food and clothing.

2.2.2 Direct Costs

The direct cost of diagnostic tests, hospital and physician fees, and the drug therapy may not be affordable by cancer patient. The oncology service requires the patients to have special diets and accommodation for remote treatment facilities which add on to the costs for those who do not get admitted. Other costs include the loss of productivity, and lost productivity due to premature death) (Wangigi, 2014).

2.2.3. Indirect Costs

The accessory costs account for absenteeism-related resources. The indirect prices associated with medical or health is generally damped in morbidity (lost labor productivity) and mortality (lost productivity because of premature death). In addition

to their caregivers and families, these prices are incurred by patients. Davidson (2015) found that family units affected in one way or another by cancer related illness had decreased disposable income making them unequipped to deal with the effects of the disease. These findings envisaged money connected accessibility as a barrier to access, restraining the underlying choice for motherly care and the significant ability to call for services when complications arise.

2.2.4. Intangible Costs

These are costs related to adverse health outcomes that do not have a market rate; for example, decreased living quality due to physical pain, emotional problems and changes in lifestyle. These costs may extend on the far side the patient to relatives experiencing bitterness grief and depression (Tsawe & Susuman, 2014).

2.3 Location of Health Service Facility

The absence of professionals and specialty centers is an often-cited obstacle to cancer treatment in poor environments (Essendi et al., 2015). Most of the medical specialty specialists in Kenya are situated in Nairobi, creating a nearly not possible for the biggest range of the population to access their services. More precisely, Kenya has only 12 oncologists registered to practice by the licensing board and who rotate around the 4,200 health facilities in the country, which makes it difficult for a great majority of the population to access oncology treatment services (Wangigi, 2014). This characterized by; late screening and improper attention on cancer treatment which might result in unavoidable fatalities.

2.3.1 Distance from Health Service

The strongest barriers to attending a medical institution in the study areas are distances covered by health facilities, with the most significant factor determining the health

care facility choice (Ejike, 2017; Ware, 2013). Most specialists in medicine in the Kenya are located in Nairobi, and access to their services is almost not possible for the largest population. The barrier to cancer treatment in poor environments has been cited more often than not as the absence of specialists and centers.

Ware (2013) study inspected the effects of separation into the medical institution, travel time and means of transport. The study found that because of the time taken to get to the provider, that those living in the rural are less likely to access health care compared to the urban dwellers (Ejike, 2017). This speed was important variables that prompted access to services. Separation from a medical institution requires an indispensable hour of accessibility to health services.

2.3.2 Transportation Means

Accessing the radiotherapy facility at the Kenyatta National Hospital presented the issue of distance, cost and heavy booking at the national referral hospital. Distance is the most determining factor of choice of the facility attended (Isaac et al.,2014).

2.3.3 Time and Appointment Schedules

A large number of cancer instances reported are diagnosed in late phases when therapeutic interventions can achieve very little. Low survival is connected with postponed presentation or late diagnosis (Almuammar et al., 2010; Ejike, 2017;). One of the factors for the observed cancer survival in Kenya has been suggested. The research carried out by Isaac et al. (2014) concentrated on roads where transport and road structure take place to ensure that maternal health services are transmitted in a particular manner and accessible and that the health reference method at Sumbrungu is adequate and concluded that most households did not have the robust, sensible and moderate means of reaching the facilities which are essential to access basic care.

2.4 Acceptability of Oncology Services

Acceptability of services affects access to oncology specialized healthcare services. Acceptability to access oncology specialized healthcare services is comprehensive and non-discriminatory services that may support the breadth and style of completely different individuals (Australian Health Ministers' Advisory Council [AHMAC], 2012). Though there's selection across the country within the method these services operate, the larger ones usually offer multifarious, in progress health services and use a talented, multidisciplinary force (Stoneman & Taylor, 2007).

The value of your time (opportunity costs) for several teams of people is nevertheless distinct and therefore also variable as an access barrier. The effect of user charges and transport prices on access to health services is shown to be negative effect in health services accessibility to vulnerable and poor families. Because of this, the proportion of the population littered with ruinous health expenditure can be used as indices to live the monetary barriers to accessibility (Ware, 2013).

2.4.1 Functionality of Health Facilities

In disadvantaged populations, the lack in health facilities services lead to inadequate screening, improper monitoring and bad quality of care (Gerend & Pai, 2008). Admission of oncology patients, however, is subject to availability and to the extent of the patient's illness. Capacity constraints therefore mean that admission would not be based on patient preference.

2.4.2 User Friendliness of a Health Service

Access to the referral hospital is generally the continuation of past and hard health attempts for most cancer patients in Kenya (Essendi et al., 2015). Patients are more exposed to social, economic and emotional burdens by delayed diagnosis and referral

to patients. The health care providers are the first professional contact point for Oncology patients and usually define the journey of treatment that the patients will take.

2.4.3 Skilled Staff

A suitable blend of qualified health employees is essential if a health system is to operate correctly. However, worldwide health workers' scarcity is encountered (O'Brien & Gostin, 2011). Kenya is mainly concerned with brain drain when it comes to human resources for health. Staff may have little understanding of cancer pain management attitudes and understanding (Shahnazi et al., 2012). The oncologists in Kenya are in severe shortage. One of the factors for this is the absence of an oncology training policy in Kenya, which is evident from the tiny amount of oncology practitioners (Mulemi, 2010). Not only do oncologists lack x-rays, oncologists and other employees who are supposed to work at a cancer center but in current medical training programs, there is also little focus on cancer. This tends to produce an environment in which patients with cancer feel less catered for.

2.4.4 Neglect and Poor Treatment

Long waiting times, drug shortages and staff attitude at the facilities are some obstacles to healthcare provision (Opwora et al., 2011). Health workers lack of competence and misbehavior is an obstacle to accessing health care. The referral scheme was demonstrated by hospitals as the principal cause of delayed hospitalization of head and neck disease (Onyango & Macharia, 2006). Unfortunately, late presentation implies mostly radical therapy that implies economic and social strain.

2.4.5 Service Delivery

Health facilities in economically disadvantaged areas rarely recommend screening and are more likely to give insufficient patient education. Broader variances in social status between practitioner and patient might likewise constrain utilization. This might be as a result of feelings inferior or simply unable to express oneself properly (Kabue, 2014). Health care providers therefore need to have sound knowledge on the effective management of this pain.

2.5 Availability of Oncology Health Services

Increased knowledge of cancer and testing play an essential part in the screening process, as health services are the first professional contact for oncology patients (Mugassa & Frumence, 2019). Patients have a more social, economic and emotional burden as a consequence of the delayed diagnosis and nurses' referrals. For most cancer patients in Kenya, admission to a referral clinic is generally a continuity of past and hard medical attempts (Mainnah, 2016). The referral scheme is regarded as the principal cause of delayed cancer hospitalization.

The most worrisome effects of cancer in patients include suffering from pain (Nwabichie et al., 2018; Shahnazi et al., 2012). Pain has a harmful, declining impact on nearly every aspect of the lives of a patient when it is continuous and not controlled (Manalo, 2008). Consequently, medical companies have to know well how to manage this pain efficiently. Practicing cancer pain management should have elevated levels of expertise and attitudes in nursing (Laugsand et al, 2010; Nwabichie et al., 2018). In addition, training assistance for efficient pain management is needed.

Long waiting time, lack of medicines and poor services are other factors acting as barriers to healthcare provision (Opwora et al., 2011). Incompetence and poor behavior

of health workers is also an obstacle to accessing medical care. Late presentation, unfortunately, mostly means radical treatment which translates to financial and social burden (Mugassa & Frumence, 2019). Late referral or non-referral is therefore an important factor affecting access to cancer treatment. The study proposes that adequacy of the resource (availability) of oncology specialized healthcare services in Kenya will be looked at in different categories.

2.5.1 Capacity of the Health Service and Working Hours

Service capacity is restricted to the number of persons who can access and use the service (Mugassa & Frumence, 2019). Access to the cancer center in Kenya does not necessarily imply complete access to therapy. Studies show that only 20 people or less would secure beds out of the 100 patients that attend KNH oncology on a Monday for periodic admission. The amounts of beds accessible on Mondays are further limited by the entry of patients in need of immediate attention on other days (Mulemi, 2010; Nwabichie et al., 2018)

Time is another problem that is strongly linked to transport and distance. The time to access facilities to a medical establishment and therefore the waiting time for a healthcare provider to examine clients appear to be well linked to the patient's view of the positioning of authority (Mugassa et al., 2010). In other words, handling each client measures the ability of the medical specialty services system to deal with the size of the target population, or preferably the population in need. It should also be within the inexpensive reach of those who should want it once services are provided (Mulemi, 2010; Nwabichie et al., 2018)

2.5.2 Adequacy and Availability of Treatment Procedures

The availability of hospital funds thus determines when and how patients can be admitted to the ward. Treatment is accessible if the necessary materials can be discovered in the community to treat a health issue (Umar et al., 2017). Failure to access oncological therapy in Kenya leads to extended waiting times for previously curable tumors to perform incurable phases. Moreover, in lower-level health centers, several patients seek care where cancer diagnosis is hindered by the absence of equipment and skilled employees. Infrastructure for cancer management in Kenya is inadequate and a few cancer managements options do not seem to be offered promptly. (MOPHS & MOMS, 2012)

2.5.3 Availability of Human Resources and other Workforce

The relationship between the supply of human power, equipment, medicine and thus the size of the target population provides the measurement of handiness coverage (Ncube et al., 2015; Ware, 2013). This takes into account the resources and the sufficiency of an intervention. In other words, the quantity or density of specialized services and staff or the provision of technology (drugs, equipment).

2.6 Uptake of Oncology Service

A large number of reported instances of cancer are diagnosed at late phases when therapeutic interventions can achieve very little (Mugassa & Frumence, 2019; Department of Research-National Assembly, 2011). However, some oncology cases are preventable or even curable. Late screening and improper attention on cancer may result to unavoidable fatalities, where treatment and/or diagnosis cannot help the patient (Nwabichie et al., 2018; Wangigi, 2014). Therefore, it is important for

oncology patient to receive adequate oncology healthcare services at the right time to curb this problem.

Studies have shown that many cases of cancer disease cannot be identified early because of absence of knowledge and lack of early screening to it (Njuguna et al., 2017; Ngugi et al., 2012). In such a case the patients do not gain the benefits of early detection (these are critical barriers to management of cancer). The low levels of awareness of access to oncology especially in developing countries (Ndikom & Ofi, 2012). According to Denny et al., (2006), one of the barriers to accessing oncology is a lack of awareness based on the perspective of patients. This results from poor education whose effects range from access to health care to behavioural research to income-generation (Kloku, 2014;Nwabichie et al., 2018).

It has also been demonstrated that most developing nations have very restricted facilities of cancer diagnostics, therapy and palliative care (Cham, 2018; Denny et al., 2006). That implies the amount of expertise and resources available to the healthcare scheme in order to cope with oncology problems impacts access to oncology. One of the most commonly overlooked aspects of effective access to oncology is the training of individuals capable of providing the medical care needed (Cham, 2018; PACT, 2010). PACT (2010) indicates that in Africa alone, there is a shortage of nearly 3000 cancer care workers Another commonly cited barrier is embarrassment and fear of pain and the results (Byrd et al. , 2007;Mugassa & Frumence, 2019).

In other words, access to cancer healthcare is essential to the health systems' efficiency. More precisely, to address this issue, it is important for patients with cancer to receive adequate specialized oncology services at the right time. This would lead to the

provision of services and lead to use and access being measured as an important part of health policy (Ncube et al., 2015; Shengelia, et al., 2003).

2.7 Theoretical Framework

This study found some theories to be very useful in explaining access to oncology specialized healthcare services in term of; affordability of oncology service (resources such as cost), location of the facility, acceptability (of proper facilities and user friendliness of a service), and availability of oncology services. The study explicitly reviewed the Health Care Utilization Theories and Models.

2.7.1 Health Care Utilization Theories and Models

This study found the health care utilization theories and models; which focus on Mechanic's general theory, useful in explaining the study variables at hand. The study then reviewed this theory which is a psychological approach as adopted by the Mechanic's (1978). The speculation in the theory includes calling points to verify a disease conduct; the extent to which it can cause deviant symptoms and signs; a person's perception of the severity of a symptom; disorder of a person's lifestyle as a result of the disease; frequency and persistence of symptoms; tolerance of symptoms; data and cultural assumptions about the disease by people; Various interpretations of the expression of symptoms; and local handling, financial prices, the psychological price (stigma, humility) and resources for therapy. This theory includes financial prices which in the present study represents the affordability and resources for therapy catering for location of the healthcare and accessibility of that facility in this study. The cultural assumptions and psychological price mentioned in this theory inform selecting the acceptability of the healthcare service in this study (Wolinsky, 1988).

Accordingly, the study considers the theory beneficial when selecting the variables considered in its research.

2.8 Empirical Review

The study reviewed empirical studies on; affordability of oncology service (resources such as cost), location of the facility, acceptability (of proper facilities and user friendliness of a service), adequacy, and availability of oncology service. The study by Levesque et al., (2013) considered identified five dimensions of location of the facility of healthcare service; acceptability; approachability; availability and accommodation; affordability; and appropriateness of the facility.

Ware, (2013) survey offers a large amount of data on obstacles for individuals residing in urban and regional populations to access health facilities. The barriers are classified as obstacles to accessibility, accessibility, adequacy and cultural acceptability (physical location of the facility). They recommend that cultural security can address the physical location of the facility.

Transporting patients and providing services by visiting patients at the service supplier in non-standard environments can improve physical access. Suitability can be improved by enhancing the number of various cultural and health-care programs offered by skilled health workers to maintain efficient long-term treatment and linkages.

The study by Tsawe and Susuman (2014) findings on affordability indicated that those under government payroll had a higher opportunity of gaining access to maternal healthcare services. The needy are at higher danger of cancer diagnosis and treatment at early phases and less likely to survive cancer diagnosis. The costs for health care

can deter or delay the use of health care or promote the use of inefficient sources or practices of health care that prevent access to tertiary-service oncology in Kenya.

Mushtaq et al., (2011) discovered that the accessibility to health facilities has been influenced by, among other variables, family members and estimated family earnings. The location of health facilities was impacted by additional behavioral health seekers, including consulting on the disease, frequency of visits to a health facility, and reasons for not using public health services. The research clarified that the primary reasons why health care facilities are not available as expenses. They suggested that public health employees should be financially motivated to enhance their production in the provision of services.

Were et al., (2011) concluded that cheaper screening techniques were required. Screening messages should explain the significance and implications of possible outcomes. Yaffee et al. (2012) discovered that those who bypassed did not have access to health insurance. In their perspective, patients who bypassed close hospitals did so for purposes such as their familiarity with the facility, which was their primary reason for doing so. Some patients would miss appointments due to lack of clinic fees, or transport to get to Kenyatta National Hospital (KNH). It was established that there was 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 was due to poverty level, where a smaller percentage of them had formal employment translating to a regular income and the rest were either self-employed or unemployed altogether. Even those self-employed were mostly doing informal businesses that give little.

The results of Cheptum et al., (2014) indicated that, as a result of their wage level, employed individuals were more likely to access services. Therefore, families with restricted budgets were unable to satisfy the service expenses provided by qualified health personnel. These findings meant that access to health facilities was hindered by finances.

The research found that several factors contributed to the disparity in healthcare usage in the studied population, Roshandel et al., (2011) used the multivariate regression analysis to evaluate the connection between the variables and the Diagnostic Services Utilization Index (DUI) or the Therapeutic services utilization index (TUI). TUI had a significant relationship with insurance coverage, occupation and place of residence. Patients living in rural areas needed special consideration about their utilization of health services. People living in urban areas had considerably higher chance for utilizing health care. The study by Utoo et al., (2013) found that the use of screening services was very poor and included reasons for this; lack of screening centers and other factors such as ignorance, perceived non-necessity, faith in God, prohibitive cost and non-recommended physician services. The study concluded that services should be made available, accessible and affordable to all while maintaining law.

Ware (2013) research found that the barriers experienced by individuals residing in urban and regional populations to access health facilities were different. These barriers are obstacles to availability (physical accessibility), affordability, appropriateness, and cultural acceptability. Some services can be provided through home visitation to improve physical access.

On the other side, Levesque et al., (2013) stated that from a culturally safe attitude to service delivery, acceptability can be considered. This involves and is not restricted to:

allowing indigenous people to choose between indigenous and mainstream facilities; recruiting indigenous employees to bridge cultural gaps; refining cultural knowledge of health workforce; providing services in non-traditional environments; refining cross-cultural communication; and respecting cultural values including avoidance and gender behaviour.

A study by Kabue (2014) found that poor health workers attendance was an incentive for patients to seek hospital services. The lack of skilled personnel in primary care and the lack of care in hospitals explain rural women's lack of willingness to provide for rural health, as Mwaniki et al., (2002) have shown. Escare and Kapur (2009) indicated that patients' likelihood of visiting healthcare facilities was determined by distance to the facility, how advanced technological was the facility and quality of service offered. In spite of changes being made to the factors, the patients preferred hospitals in cities. A study by Gauthier and Wane (2008) indicated that patient's quality services and were willing to pay more for better services. Liu et al., (2008) established that patient sought healthcare services from a highly skilled health profession thus tended to avoid primary caregivers.

The research by Mushtaq et al., (2011) discovered that there is a great detrimental effect on the place of health facilities on the quality of care and transportation problems. Poor health services quality and lack of confidence in the healthcare supplier was connected with bad use of health services which caused discontent with the quality of care. Yaffee et al., (2012) research aimed at circumventing acute care proximal medical equipment. The research found that prior visits to the facility experience were the major contributor to the absence of localization of health facilities.

Roshandel et al., (2011) found the cause of disparity in the use of healthcare to include; insurance coverage, occupation and availability of the health service. Patients living in rural areas need special consideration about their utilization of health services. Study by Adair-Rohania et al., (2013) found that access to electricity in health care facilities was necessary in sub-Saharan African countries. The conclusion was that the geographic coverage needs to be developed, the quality improved and the information collection frequency increased among health care institutions.

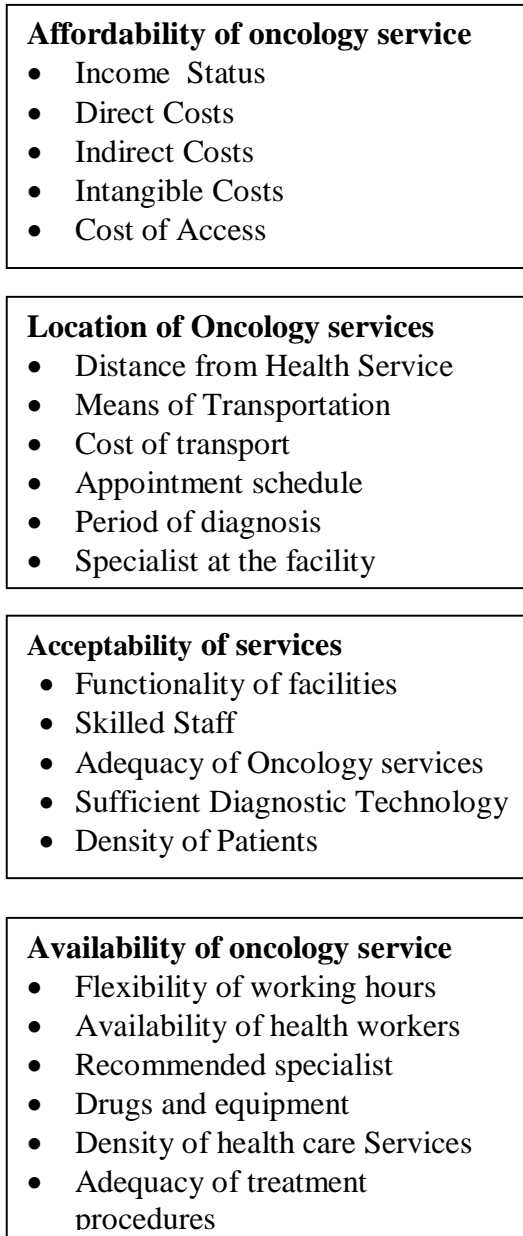
Mainnah (2016) found that competence of personnel was a key factor influencing provision of cancer treatment with a coefficient of 0.787 which was significant and 95% confidence level. Another key influencing factor to provision of cancer treatment was adequacy of facilities which showed a strong relationship 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 training of oncologists and devolving healthcare.

2.9 Conceptual Framework

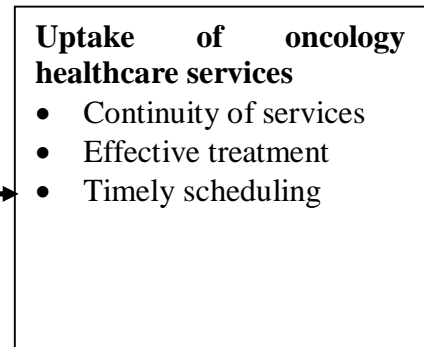
Figure 1.1

Conceptual Framework

Independent Variables



Dependent variable



2.10 Knowledge Gaps

As a researcher, I exhaustively looked at factors related to uptake of oncology services in the facility units. Previous studies established that the barrier to getting treatment and dissatisfaction was that patients have to pay and yet could not afford, transportation difficulties, location of healthcare services was major hindrance. It was established that availability of the health service contributed to disparity in healthcare uptake while accessibility, affordability, appropriateness was the main hindrance of health care service uptake. However, there is limited information showing that the factors influencing location of oncology healthcare services in Usain Gishu County are; affordability of oncology service (resources such as cost), location of the facility, acceptability (of proper facilities and user friendliness of a service), and availability of oncology service jointly influenced uptake. The present study sought to fill the gaps in these studies.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter described how the study was carried out. It includes various sections as discussed below.

3.2 Research Design

This was a descriptive research design aimed at assessing factors affecting uptake of specialized health care services for all cancer patients. Descriptive research design is useful since it significantly describes the variables of interest by analyzing their relationships and it provides valuable and accurate answer to the research questions. Descriptive research makes use of six Ws (who, what, when, where, why, way) of research (Gupta & Rangi, 2014) A descriptive study is therefore deemed as the most suitable in gathering information on factors affecting uptake of specialized health care services for all cancer patients. Data collection was done through quantitative method; a structured questionnaire in appendix II was used to collect data from cancer patients on their cancer diagnosis and treatment journey. This was used to assess important issues surrounding access to health care by the patients.

3.3 Study Area

The study was conducted in Uasin Gishu County which lies 00° 30' 00" N and 35° 20' 00" E. In Uasin Gishu County elevation varies between 2100 meters above sea level to about 2700 meters above sea level and its spatial extent is approximately 3345.2 square kilometers in the Rift Valley province and its administrative headquarters are in Eldoret town which is approximately 330 kilometers from Nairobi City which is the capital city of Kenya. Uasin Gishu is bordered by Trans-Nzoia and Marakwet districts to the north, Elgeyo district to the east, Kericho and Nandi districts to the south and

Kakamega district to the west (Mwangi, 2014). The study site is shown in appendix VI. The choice of Uasin Gishu County was informed by it representative of larger segments of populations in the highlands and the rural/urban mix in this County representative of nine other Counties in Kenya referring their patients to a specialized facility that covers cancer services among other diseases.

3.4 Target Population

The total number of cancer patients in Uasin Gishu health facilities was 142; those who visited level 18 level 3 and level 4 facilities in the County (Ministry of Health [MoH], Kenya, 2017). So, the target population was the 142 patients with cancer in Uasin Gishu County who have been screened.

3.4.1 Inclusion criteria

The who participated in the study satisfied the following conditions; patients who visited the facility two or more times, all patients diagnosed with cancer who would give an informed consent, and patients with cancer who were attending the oncology clinic at the various level 3 and 4 health facilities in Uasin Gishu County. However, all Under 18 years whose caregivers gave consent on their behalf

3.4.2 Exclusion criteria

The study excluded, patients who were paying their first visit to the facility, patient unable to communicate, patients who were too sick and unable to participate where caregivers were unwilling to consent on their behalf, patient who were unwilling/ decline to give an informed consent to participation in the study and all patients under 18 years who are not able to make decisions on their own from the target population

The study instrument was administered and instead of using patient’s names study numbers were used. At the end of the interview patients were thanked and interview terminated.

3.5 Sample Size and Sampling Procedure

The study chose to obtain data from the 142 oncology patients who are seen at the 18 level 3 and level 4 health facilities between Monday and Friday as shown in appendix VII. In view of the small and manageable target population, only those that consented to participate in the study obtained information intentionally with the whole target population as respondents, the census, non-probability method, was used. Because the target population was relatively small and easily accessible, census and a target of 142 oncology patients were selected.

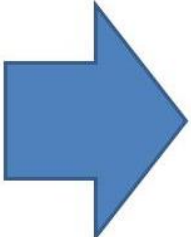
3.6 Data collection Instruments and procedure

3.6.1 Data Collection Instruments

Data was collected from patients using a structured questionnaire as shown in appendix V (page). The questionnaire was constructed employing a 5 point Likert Scale (1-5); strongly Disagree = 1: disagree= 2: not sure = 3: agree =4: strongly agree = 5, then mean (M) was obtained and standard deviation (SD) for each indicator of the dependent variables as well as the overall dependent variable. Since these Means contained fraction, they were moderated based on the statistics;

<u>Scale</u>	<u>Interpretation</u>		<u>Statistics Range</u>	<u>Interpretation</u>
1	Strongly Disagree		1 to 1.8	Strongly Disagree
2	Disagree		Above 1.8 to 2.6	Disagree
3	Neutral		Above 2.6 to 3.4	Neutral
4	Agree		Above 3.4 to 4.2	Agree
5	Strongly Agree		Above 4.2 to 5.0	Strongly Agree

The data used to assess the independent variables; affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of cancer specialized healthcare services, was also collected using a 5-point Likert Scale. Since the variable data was collected using the scale; “1 = Not at all; above; 2 = Low; 3 = Moderate 4 = High; and 5 = Very High”, the study moderated the using the statistics

<u>Scale</u>	<u>Interpretation</u>		<u>Statistics Range</u>	<u>Interpretation</u>
1	Not at All		1 to 1.8	Not at All
2	Low		Above 1.8 to 2.6	Low
3	Moderate		Above 2.6 to 3.4	Moderate
4	High		Above 3.4 to 4.2	High
5	Very High		Above 4.2 to 5.0	Very High

This was based on a fair interval categorization led by Jenk and Coulson (1963), who stated that five criteria should be fulfilled when class ranges were established: covering the complete variety of the date, without conflicting values, without empty classes, with sufficient dimensions to avoid jeopardizing information precision and dividing the information into relatively equal groups of information.

3.6.2 Data Collection Procedure

The study collected primary data from the respondents through administration of a close ended questionnaire. Before the questionnaire was administered it was first pretested for validity and reliability. Then the questionnaire was reviewed accordingly for administration. The researcher then consulted the health officer in charge of the level 3 and level 4 health facilities in Uasin Gishu County for permission to collect from patients visiting these facilities. After obtaining permission, the researcher and

the health officer then made arrangement on when and how data would be collected. During data collection, the researcher assisted the respondents or their caretakers in filling the questionnaire.

3.7 Pre-testing

A pre-test was conducted before data is collected to test the research instrument before administering it. The study collected data from 30 patients obtaining services from Kapsabet Hospital in Nandi County; a neighboring county to Uasin Gishu county. This test was used to guarantee the study tool's authenticity and relevance. Such analyses assist define possible issues, explain the tool and the suitability of the text during the primary research (Kvale, 2007). Thus the study evaluated the significance of the research objectives by checking the comprehensibility of the research instruments. It also gave the researcher an idea of the time to complete the study instruments.

3.7.1 Validity

To evaluate the accuracy of the tools, the study used a content validity test. The validity of the contents estimates the depth of the indices to which information obtained from a particular tool is determined. The assessment of content validity of a measure was carried by using two experts, health sector dealing with oncology patients and the supervisor of the study. The experts assessed the validity in instrument items and made recommendations. The tool was then reviewed accordingly.

3.7.2 Reliability

The reliability of the instrument was assessed in order to recognize issues like sources of data, methods of collection, collection time, preference presence and accuracy (Kvale, 2007). The reliability test was conducted with the internal consistency test Cronbach based on alpha. The internal consistency of information was measured by correlating the results obtained at one time with the results obtained from other elements in the research instrument. The result is the Alpha Cronbach coefficient of - 1 to 1 and is high if its absolute value exceeds or equal to 0.7 otherwise it is low. An elevated ratio means that these items are highly correlated, meaning that the items are very consistent and such items should remain in the instruments. A reliability coefficient of 0.8998 was obtained from the pilot tests of the questionnaire as shown in table 1.

Table 3.1

Reliability Test Results for the study variables

Item	Obs	Sign	Alpha
Uptake of oncology tertiary healthcare services	30	+	0.8433
Affordability of oncology services	30	+	0.8713
Location of oncology services	30	+	0.8965
Acceptability of oncology services	30	+	0.8866
Availability of oncology specialized healthcare services	30	+	0.8877
Test scale	0.8998		

The results stated that the alpha of Cronbach was 0.8998, which was higher than 0.7 according to Kothari's recommendation in 2012. The 0.8998 internal consistency reliability (α) indicated that the research factors were very consistent. Each of the variables; affordability of oncology services ($\alpha =0.8877$), location of oncology

services ($\alpha = 0.8866$), acceptability of oncology services ($\alpha = 0.8965$), availability of oncology specialized healthcare services ($\alpha = 0.8713$) and uptake of oncology specialized healthcare services ($\alpha = 8433$).

3.8 Data Analysis

The gathered information was first inspected for misrepresentation and commission mistakes. The information gathered was carefully reviewed, verified and compiled. It was classified, coded and analysed accordingly with a quantitative method in order to generate descriptive statistics (frequencies, mean and percentages). In order to develop patterns, trends and relations, and help understand and interpret the implications of this study, descriptive statistics were used. The analysed data was presented using tables and figures and then interpreted in narrative form (Aneshensel, 2004).

The extensive descriptive analysis preceded inferential analysis. Inferential analysis was done to establish the relationship between uptake of oncology services and affordability, location, acceptability and availability of oncology services. This is where the study first carried out correlation analysis (bivariate analysis) to assess the strength of relationship that existed between uptake and its associated determinants, using Pearson's product method based on 0.05 (5%) level of significance. The coefficient of correlation (r), determine the degree of relationship.

Then study carried out multiple regression analysis to estimate a model to explain uptake of oncology specialized healthcare services based on; affordability of oncology service, location of the facility, acceptability, and availability of oncology service. The regression analysis was based on 5% level of significance (p -value = 0.05). A Goodness of fit test for the proposed model, using Analysis of Variance (ANOVA) was also obtained out to establish if the model was fit for the estimating the model. T-

test was also applied to investigate all the relationships between the dependent and independent variables. Multiple regression analysis was carried out to establish the nature of the relationship based on the model;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e \dots\dots\dots (1)$$

Where;

Y = uptake of oncology specialized healthcare services

X₁ = Affordability of oncology service,

X₂ = Location of the facility,

X₃ = Acceptability of the facility,

X₄ = Availability of oncology service

β₀ is a constant (which is the value of dependent variable when all the independent variables; X₁, X₂, X₃, and X₄ are held constant).

β₁₋₄ are the regression coefficients or change induced by X₁, X₂, X₃, and X₄

e = error of prediction

The study first obtained means for each of the study variables; affordability of oncology service, location of the facility, acceptability of oncology service, and Availability of oncology service, and uptake of oncology tertiary healthcare services using the indicators of each variable. The mean values obtained for the independent variables were regressed against the mean for the dependent variable using multiple regressions.

Descriptive analysis was performed with the assistance of IBM Software Package for Social Science (SPSS) version 22.0.

3.9 Ethical Issues

The study ensured that the research was done in an ethical manner. The study was first presented to Health System Department at KEMU University before being approved by the Scientific and Ethics Review Committee (SERC) at KEMU. The Health System Department through the defense team meeting wrote minutes on the defense outcome, allowing the researcher to conduct research, which was forwarded to SERC and SERC approved the proposal through Ethical Clearance Certificate No. HSM-3-3282-2/2010. The researcher then sought permit to carry out the research from National Council of Science, Technology and Innovations (NACOSTI) which permitted the research to be conducted under issuance of permit no. NACOSTI/P/19/58435/23401. During data collection, participants were requested to provide the consent by signing an informed consent form (Appendix I) before their acceptance to participate in this study. The participants were permitted to ask questions and clarify elements that were not obviously understood for clarity. The study ensured that the data gathered from the respondents was anonymous and secure. Participants were not required to write their names on the questionnaire to; avoid revealing anonymity, ensure confidentiality, and prevent disclosure of identity.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.1 Introduction

This section provides an assessment and discussion of the outcomes acquired from the discussion of findings. The assessment of these outcomes was based on the study's goals. First, the research provides reliability, response rate, followed by a socio-demographic data assessment of the participants. Third, the chapter contains descriptive quantitative data analysis and subsequently inferential analysis to determine whether the dependent variable was influenced by the independent variables. The findings are pictorially described using figures and tables to facilitate interpretation and comprehension.

4.2 Response Rate

The sample population was 142 respondents (who were oncology patients in 18 level 3 and level 4 facilities in Uasin Gishu County). However, the study was able to obtain data from 120 (85%) out of the sampled population of 142 (100%). A response rate of 85% according to Mugenda and Mugenda (2003) was very good since it was above 69%. Mugenda and Mugenda (2003) classify any response rate above 69% as high enough to produce accurate and credible results from the data analysis. Based on this assertion, the present study then concludes that the response rate was; high and would produce good, accurate and credible results.

4.3 Respondents' Socio-Demographic Information

The study requested the respondents to provide socio-demographic information in terms of; gender, age; period suffering from cancer related illness, and length of time attending oncology clinics. The results on patients' demographic information are captured in Table 2.

Table 4.1

Analysis by Patients Demographics

Patients' gender		
Sex	Frequency	Percent
Male	29	24.17%
Female	91	75.83%
Total	120	100.00%

Period of suffering from cancer		
	Frequency	Percent
Less than a year	80	66.67%
1-5 Years	40	33.33%
Total	120	100.00%

Length of time attending oncology clinics		
	Frequency	Percent
Less than a year	80	66.67%
1-5 Years	40	33.33%
Total	120	100.00%

Source: research data (2018)

According to the results, 91(75.83%) of the respondents showed that they were female while 29(24.17%) indicated that they were male. thus, most of the respondents in Uasin Gishu County were female.

According to these results, 80(66.67%) of the respondents showed that they had been suffering from cancer related illness for less than a year while 40(33.33%) showed that they had been suffering from cancer related illness for between one (1) and five (5) years.

The results in table 2 show that 80(66.67%) of the respondents showed that they had been attending oncology clinics for less than a year while 40(33.33%) showed that they had been attending oncology clinics for between one (1) and five (5) years.

4.4 Descriptive Analysis

The study data collected using a structured questionnaire was analyzed based on the objectives to produce descriptive statistics that were used to describe the properties of

the study variables and how the independent variables related to the dependent variable.

4.4.1 Uptake of oncology specialized healthcare services in Uasin Gishu County

The study analyzed the dependent variable uptake of oncology specialized healthcare services, seeking to establish the status of uptake of specialized healthcare services in Uasin Gishu County. These results are captured in Table 3.

Table 4.2

Uptake of oncology specialized healthcare services

Uptake of oncology specialized healthcare services	M	SD
I am always given adequate services for every clinic visit	3.05	1.04
I am always encouraged to visit the cancer health center because I receive adequate attention	2.98	1.40
I am always effectively attended to and treated for cancer as scheduled	3.23	1.12
There is timely diagnosis of cancer despite long waiting time	2.98	1.49
Staff available always provided treatment scheduled on time	3.53	1.40

The results in table 3 show that the respondents were neutral on the assertion that they were always given adequate services for every visit (M = 3.05; SD = 1.04) meaning that they may not be aware of all the status of the services provided at the facilities they were attending as they also showed neutrality of the assertion that they were always encouraged to visit the cancer health center because they received adequate attention (M = 2.98; SD = 1.40). They showed that they were neutral on the statement that they were always effectively attended to and treated for cancer as scheduled (M = 3.23; SD = 1.12), they also showed that sometimes there was timely diagnosis of cancer despite long waiting time and other times there diagnosis of cancer was not done on time (M = 2.98; SD = 1.49). From these results it was shown that the

respondents agreed that it was possible to detect cancer in a timely manner with available equipment in the specialized Centre ($M = 3.41$; $SD = 1.09$) as they also showed that the staff available always provided treatment scheduled on time ($M = 3.53$; $SD = 1.40$). On average, the results show that uptake of oncology specialized healthcare services was moderate ($M = 3.20$; $SD = 1.26$).

These results indicate that the uptake of oncology specialized healthcare services in Uasin Gishu County was moderate, which agrees to the findings in the study by Ndikom and Ofi (2012), which found that there are low levels of access to oncology services especially in developing countries. Considering that Uasin Gishu County is in Kenya, a developing country, the findings in the study by Ndikom and Ofi (2012) applied very effectively. It is possible to relate the findings in this study to those in the study by Ndikom and Ofi (2012) despite these studies having being conducted in different geographical locations. These findings further confirm the findings in a local study by Wangigi, (2014) which concludes that there is poor access of oncology specialized service in Kenya.

The study found that the patients in Uasin Gishu County were not always given adequate oncology services for every visit. That is the adequacy of oncology services was moderate. These findings agree to the study by Wangigi, (2014) that the poor access of oncology specialized service in Kenya is attributable to lack of resources, poor access to location of the facility, failure by the patient to accept the utilization of the service, and inadequate facilities. It was found that patients were not always encouraged to visit the cancer health center because the attention they receive was moderately adequate. According to Wangigi, (2014), he was found that the patients were not also always effectively attended to and were not always treated for cancer as

scheduled. These findings are a confirmation of the findings by Denny et al., (2006) which found that most developing countries have very limited cancer diagnostic, treatment and palliative care services which hinder to access to oncology services.

Sometimes there was timely diagnosis of cancer and other times the diagnosis of cancer was not done on time with other medical treatment assumptions. This confirms the findings by Wangigi, (2014) that some oncology cases are preventable or even curable when diagnosed and treated early enough. This would result into delivery of services, resulting in measurement of utilization and access having a prominent role in the health policy.

However, late screening and improper attention on cancer may result in unavoidable fatalities, where treatment and/or diagnosis cannot help the patient. Thus, oncology patient need to receive adequate oncology specialized healthcare services at the right time to curb this problem. Further, the study by Ngugi et al., (2012) show that many cancer cases are not detected early due to lack of adequate access to health care services,

The results show that it was possible to detect cancer in a timely manner with available equipment in the specialized Centres and the staff available always provided treatment scheduled on time. These findings agree to Shengelia et al., (2003) that oncology patient should receive adequate oncology tertiary healthcare services at the right time to curb this problem. Based on these findings, then uptake of specialized oncology healthcare services in Uasin Gishu County is central in the performance of health care systems.

4.4.2 Affordability of Oncology Services

The study determined the influence of affordability of oncology services on access to specialized healthcare services in Uasin Gishu County by analyzing the affordability of oncology services and the results captured in table 4.

Table 2.3

Affordability of oncology services

Affordability of oncology services	M	SD
My level of income determines my ability to go to hospital	3.95	1.28
The cost of diagnostics tests and medicines required governs my frequency of obtaining services	3.27	1.21
The indirect costs such as loss of work productivity contributes to attending my hospital visits	3.97	0.85
The intangible costs including pain and lifestyle changes play a role in fulfilling my hospital appointments	4.34	0.64
The actual cost of cancer services including doctors' fees determines affordability to receiving services	3.50	1.18

The results in table 4 showed the respondents indicating that their level of income highly determines my ability to go to hospital (M = 3.95; SD = 1.28) and that the cost of diagnostics tests and medicines required governs their frequency of obtaining services which moderate affected on uptake of oncology tertiary healthcare services in Uasin Gishu (M = 3.27; SD = 1.21). They showed that indirect costs such as loss of work productivity contributes to attending their hospital visits highly influencing the uptake of oncology tertiary healthcare services in Uasin Gishu (M = 3.97; SD = 0.85). The respondents intangible costs including pain and lifestyle changes play a role fulfilling their hospital appointments very highly influencing the uptake of oncology tertiary healthcare services in Uasin Gishu (M = 4.34; SD = 0.64) while the actual cost

of cancer services including doctors' fees highly hindered them from receiving services ($M = 3.50$; $SD = 1.18$). On average, affordability of oncology services highly influenced the uptake of oncology specialized healthcare services in Uasin Gishu ($M = 3.88$; $SD = 0.99$).

Most patients were not able to access specialized healthcare services due to their low-level of income highly hindered them from going to hospital. Studies conducted earlier had also ascertained that low income levels are a deterrent for uptake of oncology specialized healthcare services and as such the main reason for not using oncology healthcare services are costs (Mushtaq et al , 2011).

On a wider perspective, the study by Mushtaq et al., (2011) found that family income affected accessibility of healthcare services. The study recommended for provision of financial incentives to the public health care workers to motivate them to improve their output in service provision. As study by Gauthier and Wane, (2008) revealed price affects access to healthcare services, the study by Maranga et al., (2013) found that the barrier to accessing oncology specialized healthcare services was the requirement for patients to pay and yet they could not afford it. The findings in this study therefore confirmed the findings in the studies earlier reviewed.

These findings are confirmation of the findings in the study by NHA (2010) that high reliance on user fees and other out-of-pocket expenditures on access to oncology provide a financial barrier to oncology health care services (NHA, 2010). Accordingly, low-income groups are generally less likely to take up oncology healthcare services (WHO, 2008). Thus, affordability of oncology service affects uptake of oncology specialized healthcare services in Uasin Gishu County since cancer is a very expensive

disease to treat, laying a very heavy financial burden on the patients and their families too (Chuma & Okungu, 2011).

The study established that the patients in Uasin Gishu County were not able to effectively pay the high cost of diagnostics tests and required medicines, which resulted into their low uptake of oncology specialized healthcare services. These findings are similar to those in the study by Wangigi (2014). Wangigi (2014) study found that direct cost of diagnostic tests, hospital and physician fees, and the drug therapy was not affordable to the oncology patient. The high cost of diagnostics tests and required medicines for oncology services highly hampered the patients from regularly visiting specialized healthcare and thereby reducing the uptake of oncology tertiary healthcare services.

According to the results, in this study, the undeclared indirect costs such as loss of work productivity hindered the oncology patients from regularly visiting hospital for treatment, highly influencing the uptake of oncology specialized healthcare services in Uasin Gishu. Similarly the study by Wangigi (2014)) established that the oncology service requires the patients to have special diets and accommodation for remote treatment facilities which add on to the costs for those who did not get admitted. The study acknowledged that other costs included the days lost from work (loss of productivity, and mortality (lost productivity due to premature death),

Further, it has been stated that indirect costs account for funds linked to lost days (i.e. loss of efficiency), as per the NCI Centre for the Reduction of Cancer Health Inequities (2004). Indirect medical or health expenses are usually divided in morbidity (perished

productivity owing to disability at job) and mortality (perished productivity owing to premature death). Patients, caregivers and relatives incur these expenses and constitute a major hindrance to accessing the healthcare system of oncology. Pain, which is one of the most feared effects of cancer in patients, is another cost which may lead to low access to healthcare (Shahnazi et al., 2012). Manalo (2008) postulated that if the pain is continuous and uncontrolled, the effect on virtually every aspect of a patient's life is detrimental and deteriorating.

In this research, the intangible costs, including adjustment to pain and lifestyle, hampered hospitalization leading to poor use of dedicated oncology facilities in Uasin Gishu County. These results support the NCI Center's statement that these are costs linked to negative health impacts for which there is no exchange rate. This includes and is not restricted to reducing life quality owing to physical pain, mental issues and changes in lifestyle. These costs can also be extended to families with grief, bitterness, or depression beyond the patient.

As a result, the poor are more vulnerable to cancer diagnosis and treatment in late-stage diseases and are less susceptible to diagnosis of cancer by irregular access to specialized health services (NCI-Center to Reduce Cancer Health Disparities 2004). Costs of treatment may detract or delay to access medical care or encourage less efficient sources and methods of health care in order to prevent access to cancer services in the Uasin Gishu County's specific health facilities.

The results show that the actual costs of cancer services including doctor fees hampered their reception while the Maranga et al., (2013) study found that patients must pay and cannot afford cancer therapy. The results of this research therefore support the research by Maranga et al., (2013). Maranga et al., (2013) established that some patients would miss appointments due to lack of clinic fees, or transport to get to specialized healthcare. In fact, that the patients faced 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.

There were high poverty level, where a smaller percentage of them had formal employment translating to a regular income and the rest were either self-employed or unemployed altogether. Even those who were self-employed were mostly doing informal businesses that give little income, study by Utoo et al. (2013) found there was very poor access to screening services due to prohibitive cost, leading to its conclusion that services should be made affordable to all. The study suggested by Mushtaq *et al.*, (2011) on ensuring ability to seek to pay, revealed that approximately most low family income affected accessibility of healthcare services.

4.4.3 Location of oncology services and Uptake of Oncology Healthcare Services

The results tabulated as shown in table 5.

Table 4.4*Analysis by of location of oncology services*

Effect of location of oncology services	M	SD
Long distance between my residence and health center determines the ability to keep appointment schedules	3.34	1.31
Transportation means and cost determines access to health services	4.56	0.80
Adherence to treatment schedules depends on availability of specialists at the specialty centers	2.78	1.36
Late diagnosis determines the manner of further interventions required	3.20	1.39

From the results in table 5, respondents indicated that the long distance between their residence and health center determines their ability to keep appointment schedules had a moderate effect on uptake of oncology specialized healthcare services in Uasin Gishu County (M = 3.34; SD = 1.31). The results showed that the transportation means and cost determines to access services very highly affected the uptake of oncology tertiary healthcare services in Uasin Gishu County (M = 4.56; SD = 0.80). The adherence to treatment schedules depended on availability of specialists at the specialty centers which was shown to moderately affect the uptake of oncology specialized healthcare services in Uasin Gishu County (M = 2.78; SD = 1.36). They showed that late diagnosis hindered them from further interventions required which moderately affected uptake of oncology specialized healthcare services in Uasin Gishu County (M = 3.20; SD = 1.39). On average location of oncology services was shown to highly have affected the uptake of oncology specialized healthcare services in Uasin Gishu County (M = 3.47; SD = 1.22).

The results show that location of oncology services highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County. Those patients who

were long distances away from the healthcare facilities found it hard to access to specialized healthcare services in Uasin Gishu County. Thus, long distance between their residence and health center hinder them from their appointment schedules and moderately affected the uptake of oncology specialized healthcare services in Uasin Gishu County. Farmer et al., who (2010) claimed that the most frequently mentioned obstacle for cancer treatment in resource poor settings was the lack of treating experts and specialty centers, confirmed the results from this research.

The oncologist experts in Kenya are all or most of them located in Nairobi, according to Farmer et al., (2010), and access to its facilities is virtually impossible for a large percentage of the population. Given that Uasin Gishu County is far away from Nairobi, advanced service is also far from the County's patients, thereby decreasing the use of specialized oncology facilities. Mwasi (2010), which was also identified in the current research, also created the distance that represented the most important obstacles to health care services.

This study found that there was lack of transportation means and cost which made it difficult to access services very highly affecting the uptake of oncology specialized healthcare services in Uasin Gishu County. This is confirmed in the study by Mwasi (2010), which found that accessing the radiotherapy facility at the few specialized center introduces the issue of distance and cost at the national referral hospital. This makes distance the most important factor affecting the choice of the facility attended (Mwasi, 2010).

The results in the present study showed that specialized healthcare services lacked specialists at the specialty centers hindering their treatment schedules and this

moderately affect the uptake of oncology specialized healthcare services in Uasin Gishu County. This finding coincides with those of Ware (2013), Mushtaq et al., (2011), Yaffee et al., (2012). Ware's research (2013) found that physical accessibility, affordability, appropriateness and cultural acceptability are one of the obstacles to access to public health services experienced by individuals in urban and regional populations. Mushtaq et al.'s (2011) study has shown that the reasons not to use public health services are due to healthcare services ' location. Yaffee et al., study (2012) identified the primary cause of the lack of location of health services.

In the current research, a number of patients were diagnosed late, hindering further procedures and mildly influencing their use of specialist oncology medical facilities in the County of Uasin Gishu County. A large amount of the reported instances of cancer have been diagnosed in early phases when therapeutic interventions can achieve very little. Low survival is connected with delayed presentation or late diagnosis (Almuammar et al., 2010). This may be one of the factors for Uasin Gishu County's poorer patients survival. Ware's research (2013) proposes physical accessibility in non-standard settings and enhancing physical access through home visit in provision of some services.

4.4.4 Acceptability of Oncology Services and Uptake of Healthcare Services

The study assessed the third objective; to determine the effects of acceptability of oncology services on access to specialized healthcare services in Uasin Gishu County by analyzing the acceptability of oncology services. The results on acceptability of oncology services and uptake of oncology healthcare services are shown in table 6.

Table 4.5*Analysis by acceptability of oncology services*

Acceptability of oncology services	M	SD
Screening services during my visits are adequate encouraging me to use the facility	3.15	1.35
We are informed and diagnosed with cancer in time which encourages uptake of specialized cancer service	2.73	1.54
There are adequate oncology staff to manage all patients waiting for services improving uptake of the health care service	3.03	1.39
Waiting time at the health facility improve uptake of the health care service while we interact with other patients	2.51	1.25
Patients are always provided with adequate patient education on uptake of the cancer care service	2.83	1.14
There is sufficient technology for follow up care hence uptake of the health care service	2.51	1.25

The results in table 6 show the respondents indicating that they screening services moderately affected their uptake of oncology specialized healthcare services in Uasin Gishu County (M = 3.15; SD = 1.35). it was shown by the respondents being informed and diagnosed with cancer in time moderately affect the uptake of oncology specialized healthcare services (M = 2.73; SD = 1.54) Some respondents might have taken too long to be informed and diagnosed with cancer which moderately affect the uptake of oncology specialized healthcare services. Adequacy of oncology staff to manage all patients waiting for services moderately affected uptake of oncology specialized healthcare services (M = 3.03; SD = 1.39). according to these results, oncology staff might not have been enough to manage all patients waiting for services, Time while waiting at the health center was shown to have moderately affect uptake of oncology specialized healthcare services (M = 2.51; SD = 1.25). The results show that there might have been no long waiting time at the health center moderately affecting uptake of oncology specialized healthcare services. Provision with adequate

patient education moderately affected uptake of oncology specialized healthcare services ($M = 2.83$; $SD = 1.14$). Thus, sometimes they might have experienced failures in providing adequate patient education. On average acceptability of oncology services moderately affected uptake of oncology specialized healthcare services in Uasin Gishu County ($M = 2.85$; $SD = 1.33$). Sufficient technology for follow up care moderately affected uptake of the health care service ($M = 2.51$; $SD = 1.25$). On average acceptability of oncology services moderately affected uptake of oncology specialized healthcare services in Uasin Gishu County ($M = 2.85$; $SD = 1.33$).

The current research has discovered that oncology facilities are acceptable to the user in the Uasin Gishu County, who agree to this research, in a moderate way. Mushtaq et al., (2011) research has shown that unhappiness with care quality and transport problems constitutes an important obstacle to access to health facilities. Poor quality of the health service and lack of confidence in the healthcare provider were linked to poor use of the health service which has caused poor satisfaction with quality of care for both urban and poor populations.

In the present study, it was established that some of the patients took long to be informed with diagnosis results about their cancer status, which moderately affected the uptake of oncology specialized healthcare services and sometimes the oncology staff were too few to manage all patients waiting for services, moderately affecting uptake of oncology specialized healthcare services. These findings are confirmation to the study by O'brien and Gostin (2011) the healthcare service provider are experiencing a global health worker shortage of staggering proportions, in which case Uasin Gishu County is no exception.

The oncologist scarcity in Kenya as indicated by Mulemi (2010) is one of the factors is the absence of an oncologist strategy in Kenya which was evident from the few oncology experts who worked in the cancer ward including; oncologists; radiographers, oncology nurses and others. Existing medical training programs also concentrate scarcely on cancer, which tends to produce an environment where patients with cancer are less involved. PACT (2010) showed that there is a shortage of 3,000 cancer care employees in Africa alone.

The fact that an adequate combination of qualified healthcare workers is crucial to a functioning health system is obviously stated by O'Brien and Gostin (2011). However, Kenya is faced with a major human resources problem for health. Shahnazi et al., (2012) emphasized this, indicating that employees may have low ratings on cancer pain management, understanding and attitude.

The findings indicate that the oncology facilities in the Uasin Gishu County were sometimes insufficient for the patients during their visits, which had moderate effects for them. Similar to Freeman (2004), these results demonstrate that healthcare providers are likely to provide insufficient patient education, which may lead to insufficient screening facilities, insufficient reporting and reduced healthcare quality (Gerend & Pai, 2008). Therefore, healthcare providers need to possess a sound understanding of efficient pain management. Shahnazi et al., (2012) points to the importance of the expertise and behavior of the nurses in the management of cancer pain (Laugsand et al., 2010). For efficient pain management, education assistance is required.

According to the results in this study, there was no long waiting time at the health center, factor that encouraged uptake of oncology services in Uasin Gishu County. These findings disagree to those in the study by Opwora et al., (2011) which found that some barriers to health care delivery are long waiting time and poor services. On contrary, in Uasin Gishu County there was no long waiting time at the health center. However, health workers ' incompetence and perceived bad behavior is a barrier to accessing healthcare. Onyango and Macharia (2006) revealed that hospitals show a delayed hospitalization of head and neck cancer to the primary cause of the referral scheme.

The results in this study show that patients experienced failures in receiving adequate patient education, which moderately affected their uptake of oncology specialized healthcare services in Uasin Gishu County. According to Denny et al., (2006), one of the barriers to access to oncology is lack of awareness, which emanates from poor education and has consequence on healthcare access (Kloku, 2014). So, these findings are confirmation of the findings by Denny et al., (2006) and Kloku (2014). When patients lack education, they do not gain the benefits of early detection since these are critical barriers to management of cancer. Also, Utoo et al., (2013) study concludes that services should be made affordable to all while sustaining awareness campaigns. One of the most commonly overlooked aspects of effective access to oncology is the training of individuals capable of providing the medical care needed (PACT, 2010). The study by Liu et al., (2008) found that while patients have been receiving medical services from a medical specialist, the local primary care facilities have been bypassed. Concerning the circumvention, satisfaction with the local hospital was included. The research found that many rural patients in health facilities outside their communities

are looking for significant hospital facilities. In extreme situations, bypasses might lead to reductions in the number of medical practitioners and the range of healthcare services provided, or even hospital closures.

4.4.5 Availability of Oncology Services and Uptake of Healthcare Services

The results are shown in table 7.

Table 4.6

Analysis by availability of oncology specialized healthcare services

Availability of oncology specialized healthcare services	M	SD
Facility has adequate capacity to administer the necessary help in the facility	3.91	1.34
I meet all my hospital schedule within the location of specialized services	4.15	1.12
I receive all recommend specialist oncology services at the hospital during my visits	3.95	1.11
Density of oncology specialized healthcare services is enough to serve all the patients visiting the hospital	3.12	1.10
There is adequate skilled oncology personnel in the unit	3.54	1.23
I had sufficient technology services for diagnosis and treatment (drugs, equipment)	4.50	0.70

The results in table 7 show the respondents indicate that adequate capacity to administer the necessary help in the facility highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County (M = 3.91; SD = 1.34). They showed that they did not meet all their hospital schedule due to inconvenient location of specialized services highly affected the uptake of oncology specialized healthcare services (M = 4.15; SD = 1.12). The respondents further showed that receiving recommended specialist oncology services at the hospital highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County (M = 3.95; SD = 1.11). The respondent's showed that density of oncology specialized healthcare

services to serve all the patients visiting the hospital moderately affected the uptake of oncology specialized healthcare services in Uasin Gishu County ($M = 3.12$; $SD = 1.10$). It was shown that availability of adequate skilled oncology personnel in the unit which highly affected their uptake of oncology tertiary healthcare services in Uasin Gishu County ($M = 3.54$; $SD = 1.23$). Sufficiency of technology (drugs, equipment) very highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County ($M = 4.50$; $SD = 0.70$). On average availability of oncology specialized healthcare services highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County ($M = 3.86$; $SD = 1.10$)

The availability of specialist services for cancer treatment has been found to greatly affect the use of specialized services for oncology in Uasin County Gishu. Due to a poor use of oncology-related specialist health facilities, specialized health facilities in Uasin Gishu County were not easily available. These conclusions agree with the research by Roshandel et al., (2011) that the health service's accessibility adds to the disparity in the use of health care.

According to the results in this study, these specialized healthcare services did not have adequate capacity to administer the necessary help in the facility which highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County. This is a representation of the status of availability of oncology specialized healthcare services in the entire country as revealed by Mulemi (2010). According to Mulemi (2010), Kenya experiences limited capacity of the service, where only a limited number of people are able to reach and use it. In Kenya, arrival at the oncology treatment center does not mean outright access to treatment.

Studies reveal that only 20 patients or fewer would be able to secure beds out of 100 patient oncology services at KNH on a periodic admission basis each Monday. The amount of beds accessible on Mondays is further limited by the entry of patients who need urgent attention on other dates. Mulemi (2010) points out that it is likely to impede the uptake of the healthcare supplier, the time to visit the health facility and a waiting time to see the health care professional, due to problems in place of accessible funds. Access to the oncology health services facilities and thus the use of oncology specialized medications facilities in Uasin Gishu County therefore is determined by the availability of hospital funds.

The studies discovered that owing to the uncomfortable location of specialist facilities, patients were not able to fulfill the whole timetable and this greatly influenced the use of specialist facilities in cancer care. Health studies have shown that Kenya has insufficient cancer therapy facilities and that some cancer control alternatives are not easily accessible (MOPHS & MOMS, 2012). The patients who did not receive recommended specialist oncology services at the hospital highly affecting the uptake of oncology specialized healthcare services in Uasin Gishu County. MOPHS and MOMS (2012) show that many patients seek treatment from lower-level healthcare centers where cancer diagnosis is hindered by the absence of equipment and skilled personnel.

The research showed that, with small oncological densities in specific medical facilities for all patients visiting the hospital, oncology services in Uasin Gishu County were highly impacted while the lack of competent oncology staff impacted rendering of oncology services in Uasin Gishu County. A research by Mwaniki et al., (2002) has demonstrated a lack of qualified personnel in main care, negligence and maltreatment

in hospital impacted the use of oncology specialized health services. Ware (2013) says appropriate measures can be improved by enhancing competent and on-going health programs delivered by a skilled, multidisciplinary workforce that can maintain efficient long-term treatment relationships and interactions with other providers.

This study found that lack of sufficient technology (drugs, equipment) very highly affected the uptake of oncology specialized healthcare services in Uasin Gishu County which agrees to that by Opwora et al., (2011) which found that, lack of drugs and poor services is among the factors acting as barriers to health care delivery. Opwora et al., (2011) also concludes that incompetence and perceived poor attitude of health workers is also a barrier to health care access. The study by Opwora et al., (2011) proposes that availability of oncology specialized healthcare services in Kenya will be looked at the level of technology. This implies that the use of specialized health facilities in Oncology in the Uasin Gishu County depends on technology since the proportion of drug access to the target population measures availability coverage and the accessibility of technology (drugs, equipment) and can maintain efficient long-term interactions and connections with other provinces in order to ensure that the medical services are available. Thus, the accessible funds and their adequacy efficiently influence the use of medical care facilities in the area of oncology in Uasin Gishu County.

4.5 Inferential Analysis

The study sought to establish whether the independent variables; affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services would suitably estimate dependent variable, uptake of oncology specialized healthcare services in Uasin Gishu

County by testing for existence of significant relationship between, affordability, location, acceptability and availability of oncology services and the uptake of oncology specialized healthcare services. The study therefore carried out a correlation analysis and multiple regressions on the study variables using the indices obtained for all the variables.

4.5.1 Correlation Analysis

The research conducted the correlation analysis to determine the correlation between oncological specialized health facilities in the district of Uasin Gishu and the IVs; oncology services are affordable, oncology services are located, oncologic services can be acceptable, health oncology specialized facilities are available. This research attempted to determine whether the use of oncology health facilities was statistically significantly linked to each of the autonomous variable used in the research. The correlation was done using the Pearson's product moment correlation as results captured on table 8.

Table 4.7

Correlation Analysis

		Correlations				
		Uptake of oncology specialized healthcare services	Affordability of oncology services	Location of oncology services	Acceptability of oncology services	Availability of oncology specialized healthcare services
Uptake of oncology specialized healthcare services	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	120				
Affordability of oncology services	Pearson Correlation	.858**	1			
	Sig. (2-tailed)	.000				
	N	120	120			
Location of oncology services	Pearson Correlation	.198*	.235**	1		
	Sig. (2-tailed)	.019	.005			
	N	120	120	120		
Acceptability of oncology services	Pearson Correlation	.389**	.243**	.743**	1	
	Sig. (2-tailed)	.000	.004	.000		
	N	120	120	120	120	
Availability of oncology specialized healthcare services	Pearson Correlation	.265**	.431**	.773**	.491**	1
	Sig. (2-tailed)	.002	.000	.000	.000	
	N	120	120	120	120	120

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

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

The results of correlation analysis in table 8 show that, using Pearson’s’ product method and under 5% level of significance, each of the independent variables; affordability of oncology services ($r = 0.858, p < 0.05$), location of oncology services ($r = 0.198, p < 0.05$), acceptability of oncology services ($r = 0.389, p < 0.05$) and availability of oncology specialized healthcare services ($r = 0.265, p < 0.010$) was

significantly related to uptake of oncology specialized healthcare services in Uasin Gishu County because the probability value (p-value) for each was less than 0.05.

The result show that affordability of oncology services ($r = 0.858$) had the highest relationship with uptake, followed by acceptability of oncology services ($r = 0.389$) then availability of oncology specialized healthcare services ($r = 0.265$), and lastly location of oncology services ($r = 0.198$). The results show that the relationship between affordability of oncology services ($r = 0.858$) and uptake of oncology specialized healthcare services in Uasin Gishu County was high since the correlation coefficient (r) was greater than 0.6. The relationship between acceptability of oncology services ($r = 0.389$) and uptake of oncology specialized healthcare services in Uasin Gishu County was moderate since the correlation coefficient (r) was between 0.3 and 0.6.

The relation between each of the; access of specialized medical oncology service ($r = 0.265$) and oncology facilities ($r = 0.198$) was very small as the correlation coefficient (r) was less than 0.3 and higher than 0.1. The connection between oncology specific health facilities in the County of Uasin Gishu County was very small. The research continued to evaluate the research model using various regression, as it showed a substantial relation between the independent and the dependent variable; the use of specialist oncology facilities in Uasin Gishu County.

4.5.2 Regression Model

Multiple regression was then carried out on the independent variables against the dependent variable (Uptake of oncology specialized healthcare services in Uasin Gishu County) to estimate the model, since they had shown to have had significant

relationships. Thus, to estimate the relationship the study model is based on the equation;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \dots \dots \dots (2)$$

Where;

Y = Uptake of oncology specialized healthcare services

X₁ = Affordability of oncology service,

X₂ = Location of the facility,

X₃ = Acceptability of the facility,

X₄ = Availability of oncology service

β₀ is a constant (which is the value of dependent variable when all the independent variables; X₁, X₂, X₃, and X₄ are 0).

β₁₋₄ are the regression coefficients or change induced by X₁, X₂, X₃, and X₄

e = error of prediction

The results were captured in Table 9.

Table 4.8***Results of Regression of all study Variables***

	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-.531	.177		-3.007	.003
Affordability of oncology services	1.016	.048	.883	21.193	.000
Location of oncology services	0.113	.067	.134	1.699	.092
Acceptability of oncology services	0.310	.047	.368	6.532	.000
Availability of oncology specialized healthcare services	0.154	.052	.193	2.978	.003

a. Dependent Variable: Uptake of oncology specialized healthcare services in Uasin Gishu County

The results show that the location of oncology services had a significant relationship with the uptake of oncology specialized healthcare services since its p-value (0.092) was greater than 0.05. The study therefore sought to perform a variable exclusion analysis to exclude the variables which were not significantly related to uptake of oncology specialized healthcare services in Uasin Gishu County and the results were capture in Table 10.

Table 4.9***Excluded Variables Analysis***

Excluded Variables^a					
	Beta In	T	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
Location of oncology services	-.134 ^d	-1.699	.092	-.145	.212

d. Predictors in the Model: (Constant), Affordability of oncology services, Acceptability of oncology services, Availability of oncology specialized healthcare services

The excluded variable according to results in table 10, was location of oncology services and then proceeded to analyzing the remaining variables; affordability of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services to establish whether they would predict the uptake of oncology specialized healthcare services, uptake of oncology specialized healthcare services in Uasin Gishu County. The results were captured in table 11.

Table 4.10***Regression Results of significant study Variables***

Statistics	Beta Values	T-statistics	p-value
(Constant)	-0.605	-3.513	0.001
Affordability of oncology services	1.038	22.287	0.000
Acceptability of oncology services	0.256	7.250	0.000
Availability of oncology specialized healthcare services	0.217	6.048	0.000
R Square	0.819		
N	120		
Df	119		
F-statistics	153.492		
ANOVA (p-value)	0.000		

The research used the Table 11 results to determine the significance of independent variable on the independent variables. The results, $t = 22.287$, and $p\text{-value} = .000$, are

indication that the p-value of affordability of oncology services does not exceed 0.05. This is an indication that at $\alpha = 0.05$ affordable is useful as a predictor for the oncology specialized health services. As acceptability of oncology services the results show that $t = 7.250$ and $p\text{-value} = .000$ implying that at the $\alpha = 0.05$ level of significance, there exists enough evidence to conclude that the acceptability of oncology services is not zero and, hence, that acceptability of oncology services is useful as a predictor of uptake of oncology specialized healthcare services in Uasin Gishu County since $p\text{-value} < 0.05$.

The availability of oncology specialized healthcare services results shows that $T = -6.048$ and $p\text{-value} = .000$. Since $p\text{-value} < 0.05$ at $\alpha = 0.05$ level of significance, there exists enough evidence to conclude that the availability of oncology specialized healthcare services is not zero and, hence, that availability of oncology specialized healthcare services is useful as a predictor of uptake of cancer specialized healthcare services in Uasin Gishu County.

Based on the results in table 4.10, the estimated equation is

$$Y = -0.605 + 1.038X_1 + .256X_3 + 0.217X_4 \dots\dots\dots (3)$$

The table shows that affordability of oncology services, and acceptability of oncology services had positive coefficients, implying that they were directly proportional to uptake of oncology specialized healthcare services in Uasin Gishu County. This means that an increase in any of; affordability of oncology services, and acceptability of oncology services would lead to improvement of uptake of oncology specialized healthcare services in Uasin Gishu County and vice versa. Availability of oncology specialized healthcare service had positive coefficient, implying that it was directly proportional to uptake of oncology specialized healthcare services in Uasin Gishu

County. This means that an increase in availability of oncology tertiary healthcare service would lead to an increase of uptake of oncology specialized healthcare services in Uasin Gishu County.

Based on the results, the fitted value of uptake of oncology tertiary healthcare services in Uasin Gishu County on average was -0.605 with a standard error of 0.172. Thus, when all the independent variables are zero the uptake of oncology specialized healthcare services in Uasin Gishu County decreases by 0.605 units. These results indicate any one unit increase in affordability of oncology services causes an increase rate of 1.038 on uptake of oncology specialized healthcare services in Uasin Gishu County and vice versa.

An increase of one unit in acceptability of oncology services causes a 0.256 increase rate in uptake of oncology specialized healthcare services in Uasin Gishu County and a decrease of one unit in acceptability of oncology services causes a 0.256 decrease rate in uptake of oncology specialized healthcare services in Uasin Gishu County.

An increase of one-unit availability of oncology specialized healthcare services causes an increase rate of 0.217 uptake of oncology specialized healthcare services in Uasin Gishu County while a unit decrease in availability of oncology specialized health care services causes a decrease rate of 0.217 uptake of oncology specialized healthcare services in Uasin Gishu County.

The results in table 4.12 show that coefficient of determination (indicated by R^2) was .8192, an indication that 81.92% of variation in uptake of oncology specialized healthcare services in Uasin Gishu County is explained by; affordability of oncology services, acceptability of oncology services, and availability of oncology tertiary healthcare services. In a summary, affordability of oncology services, acceptability of

oncology services, and availability of oncology specialized healthcare services could significantly predict the uptake of oncology specialized healthcare services in Uasin Gishu County.

Using the model equation, the study obtained the Analysis of Variance (ANOVA) results, testing for goodness of fit of the study model. The regression coefficients (beta-coefficients) were used to interpret the goodness of fit at 0.05 significance level. when all the regression coefficients are zero (i.e., $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$) then model is fit otherwise if any of the regression coefficients is not zero ($\beta_1 \neq 0$) then the model is fit for explaining uptake of oncology specialized healthcare services in Uasin Gishu County in terms of affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services. The results show that p-value = .000 and since p-value < 0.05, indicating that at 5% significance level, at least one of the predictors; affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services is useful in predicting the uptake of oncology specialized healthcare services in Uasin Gishu County.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This section summarizes the results, conclusions from the results of the research and the recommendations based on these results. It also underlines the investigative gaps that further research and constraints of the trial should fill in for the researcher. The summary, conclusions, and recommendations were based on the study objectives; to determine the influence of affordability of oncology services on uptake of specialized healthcare services, to establish the influence of location of oncology services on uptake of oncology specialized healthcare services, to analyze the effect of acceptability of oncology services on uptake of oncology specialized healthcare services and to determine the effect of availability of oncology services on uptake of oncology specialized healthcare services in Uasin Gishu County, Kenya

5.2 Summary of findings

The following section provides a summary of each research objective of the study

5.2.1 Uptake of oncology specialized healthcare services in Uasin Gishu County

The study established that the uptake of oncology specialized healthcare services in Uasin Gishu County was moderate. In fact, adequacy of oncology services in Uasin Gishu County was moderate. The patients were also discouraged by the moderate attention they received on every visit for specialized healthcare services. They did not receive adequate attention, which highly demoralized them eventually led to the low uptake of oncology specialized healthcare services. The patients felt that the diagnosis of cancer was not done in time despite long waiting time. Although it was possible to detect cancer in a timely manner with available equipment in the specialized center,

the specialized healthcare facilities skilled staff to attend to them were very few. The inadequacy of skilled staff affected the timely treatment of the patients negatively leading to violation of treatment schedules. The patients were therefore not receiving their treatment according to the laid down schedules.

5.2.2 Affordability of oncology services

The study found that low affordability level of oncology services highly influenced the uptake of oncology specialized healthcare services in Uasin Gishu County negatively such that a unit increase in affordability of oncology services leads to increase in uptake of oncology specialized healthcare services by 0.901 units. Also, the relationship between affordability of oncology services and uptake of oncology specialized healthcare services in Uasin Gishu County was high since the correlation coefficient (r) was greater than 0.6. Most patients were not able to regularly access the specialized healthcare services as required due their low level of income. It was noted that most patients had difficulty in affording the actual cost of cancer services including doctors' fees. This manifested itself into low uptake levels of oncology specialized healthcare services in Uasin Gishu County.

5.2.3 Location of oncology services

The study found that the uptake of oncology specialized healthcare services of most patients in Uasin Gishu County was affected by location of oncology services. From the inferential results, it was found that location of oncology services had a negative effect on uptake of oncology specialized healthcare services at 0.134 units. This was however, not significant at 5%. Thus implying that location of oncology services can still be affecting the uptake of oncology specialized healthcare services. Those patients residing long distances away from the healthcare facilities, found it difficult to access

the specialized healthcare services in Uasin Gishu County. The long distance between the patients' residence and specialized healthcare center hindered them from meeting the appointment schedules.

5.2.4 Acceptability of oncology services

The study found that acceptability of oncology services by the patients had a positive ($\beta=0.304$) effect on uptake of oncology specialized healthcare services in Uasin Gishu County which was very significant at $p<0.010$. Likewise, the relationship between acceptability of oncology services and uptake of oncology specialized healthcare services in Uasin Gishu County was moderate since the correlation coefficient (r) was between 0.3 and 0.6. Descriptively, most patients felt that they experienced inadequate screening services and even most of them took long to be informed and diagnosed with cancer. The experiences contributed to the uptake of oncology specialized healthcare services. The skilled oncology staffs were too few to manage all patients waiting for services, which led to low uptake of oncology specialized healthcare services.

5.2.5 Availability of oncology specialized healthcare services

The findings showed that availability of oncology service had negative ($\beta=0.272$) effect on uptake of oncology specialized healthcare services. This, however, is not consistent with findings of Mwangi (2014), Ngugi and Muigai (2012), who found availability of oncology to positively influence uptake of oncology services. Inadequate skilled staff and lack of specialized drugs negatively contributed to the low uptake of oncology specialized healthcare services in Uasin Gishu County. The density of oncology specialized healthcare services to serve all the patients visiting the hospital is low thus highly discourage patients frequent visits to the specialized healthcare

services and hence affected the uptake of oncology specialized healthcare services in Uasin Gishu County negatively.

5.3 Conclusions

The study concludes that affordability of oncology services has a strong significant and positive influence on the uptake of oncology specialized healthcare services in Uasin Gishu County. This, therefore, make affordability of oncology services a good predictor of uptake of oncology specialized healthcare services. The affordability of specialized healthcare services was determined by the patients' income level. Hence, with low income patients are highly discouraged from visiting the specialized healthcare services centers leading to low uptake of oncology specialized healthcare services in Uasin Gishu County where they sought other treatment including cancer related services at lower facility levels.

The study concludes that the location of oncology services had negative but low significant relationship with uptake of oncology specialized healthcare services in Uasin Gishu County. Closeness to the specialized healthcare services ensures convenience to access the services from the specialized healthcare thus increasing uptake of the oncology specialized services. However, patients residing long distances away from the healthcare facilities thus experience low uptake of oncology specialized services.

The study concludes that acceptability of oncology services has a moderate significant positive effect on uptake of oncology specialized healthcare services in Uasin Gishu County. This implies that provision of adequate screening services for patients during their visits, informing and diagnosing patients with cancer early enough, having adequate oncology staff to manage all patients waiting for services accelerate the

uptake of oncology specialized healthcare services. The specialized cancer health care service centers should provide patients with adequate education to positively improve uptake of oncology specialized healthcare services in Uasin Gishu County.

Despite the fact that availability of oncology specialized healthcare services had negative and low significant relationship with uptake of oncology specialized healthcare services in Uasin Gishu County, from descriptive statistics, there is still need to make specialized healthcare services readily accessible within patient reach, specialized healthcare having adequate capacity to administer the necessary help in cancer treatment, and providing patients with recommended specialist in oncology services at the hospital. The sufficiency of technology (drugs, equipment) highly affects the uptake of oncology specialized healthcare services in Uasin Gishu County positively as supported by other studies i.e. Mwangi (2014).

5.4 Recommendations

The following recommendations are made on study findings as well as for future research

5.4.1 Recommendations on Research Findings

1. The health sector of the county should improve patient access to affordable cancer services through reduction of cost of diagnostics tests and medicines. The County should defray all the intangible costs and cater for part of the actual cost of cancer services including doctors' fees.
2. The county government should increase the number of oncology specialized healthcare services screening units as well as clinic across the county depending on the density of the patients. They should be informed by; the

distance between their residence and the clinic locations., available transportation system, and resource availability.

3. The county government of Uasin Gishu County should provide adequate screening services by engaging adequate and experience and competent oncology specialized healthcare staff who would manage all patients waiting for services in the shortest time possible. In addition, they should ensure provision of adequate patient education to oncology patients and caregiver.
4. The County government should improve on building capacity to administer the necessary help by training more personnel in the region through introducing cancer training models and identify staff to train in their training institutions located in the County. The county should in addition increase the density of oncology specialized healthcare services in addition to sufficiency of technology (drugs, equipment).

5.4.2 Recommendations for Further Study

The study established that 81.92% of variation in Uptake of oncology specialized healthcare services in Uasin Gishu County is explained by; affordability of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services. This means there are other factors contributing to 18.08% of variation in uptake of oncology specialized healthcare services in Uasin Gishu County. So, other studies should be conducted to establish other factors contributing to 18.08% of variation in uptake of oncology specialized healthcare services in Uasin Gishu County.

This study established the development of Uptake of oncology specialized healthcare services in Uasin Gishu County was influenced by; affordability of oncology services,

location of oncology services, acceptability of oncology services, and availability of oncology specialized healthcare services. However, the study

The study was conducted on uptake of oncology specialized healthcare services in Uasin Gishu County, Kenya, which restricted sample cluster to determine uptake of oncology specialized healthcare services in Uasin Gishu County, Kenya, hence delimiting the study to geographic areas. The study which was limited to Uasin Gishu County also, may not be applicable to the entire Republic of Kenya as a country. So further studies should be conducted using a bigger target population to accomplish more extensive data on oncology specialized healthcare services in Kenya.

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APPENDICES

APPENDIX I: CONSENT FORM

KENYA METHODIST UNIVERSITY
P. 0 BOX 267-60200
MERU, KENYA

SUBJECT: INFORMED CONSENT

Dear Respondent,

*My name is Linner C Soy. I am an MSc Health Systems Management student from Kenya Methodist University. I am conducting a study titled: **Factors influencing uptake of oncology specialized health services in Uasin Gishu County.***

The findings will be utilized to strengthen the health systems in Kenya and other Low-in- come countries in Africa. As a result, countries, communities and individuals will benefit from improved quality of healthcare services. This research proposal is critical to strengthening health systems as it will generate new knowledge in this area that will inform decision makers to make decisions that are research based.

Procedure to be followed

Participation in this study will require that I ask you some questions and also access all the hospital's department to address the six pillars of the health system. I will record the information from you in a questionnaire check list.

You have the right to refuse participation in this study. You will not be penalized nor victimized for not joining the study and your decision will not be used against you nor affect you at your place of employment.

Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you are rendering.

Discomforts and risks

Some of the questions you will be asked are on intimate subject and may be embarrassing or make you uncomfortable. If this happens; you may refuse to answer if you choose. You may also stop the interview at any time. The interview may take about 40 minutes to complete.

Benefits

If you participate in this study you will help us to strengthen the health systems in Kenya and other Low-in- come countries in Africa. As a result, countries, communities and individuals will benefit from improved quality of healthcare

services. This field attachment is critical to strengthening the health systems as it will generate new knowledge in this area that will inform decision makers to make decisions that are research based.

Rewards

There is no reward for anyone who chooses to participate in the study.

Confidentiality

The interviews will be conducted in a private setting within the hospital. Your name will not be recorded on the questionnaire and the questionnaires will be kept in a safe place at the University.

Contact Information

If you have any questions you may contact the following supervisors:

1. Eunice Muthoni Mwangi
Department, Health Systems Management, Kenya Methodist University
eunicelucki@yahoo.co.uk
2. Mr. Musa Oluoch
Department of Health Systems Management
musadot123@gmail.com

Participant’s Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will not be victimized at my place of work whether I decide to leave the study or not and my decision will not affect the way I am treated at my work place.

Name of Participant.....

Date.....

Signature.....

Investigator’s Statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the risks and the benefits involved.

Name of

Interviewer.....Date.....

Interviewer Signature.....

APPENDIX II: PATIENT QUESTIONNAIRE

Instructions;

Please answer the following questions as accurately as possible.

Tick the correct answer in the boxes provided against the questions where necessary.

You need not write your name on the questionnaire.

Information will be treated with confidentiality.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

1. Please state your Sex Male Female

2. What is your age in Years.....

3. How long have you been suffering from cancer related illness

Less than a year 1 – 5 Years 6 – 10 Years
 11 – 15 Years 16 – 20 Years Over 20 Years

4. How long have you been in attending oncology clinics

Less than a year 1 – 5 Years 6 – 10 Years
 11 – 15 Years 16 – 20 Years Over 20 Years

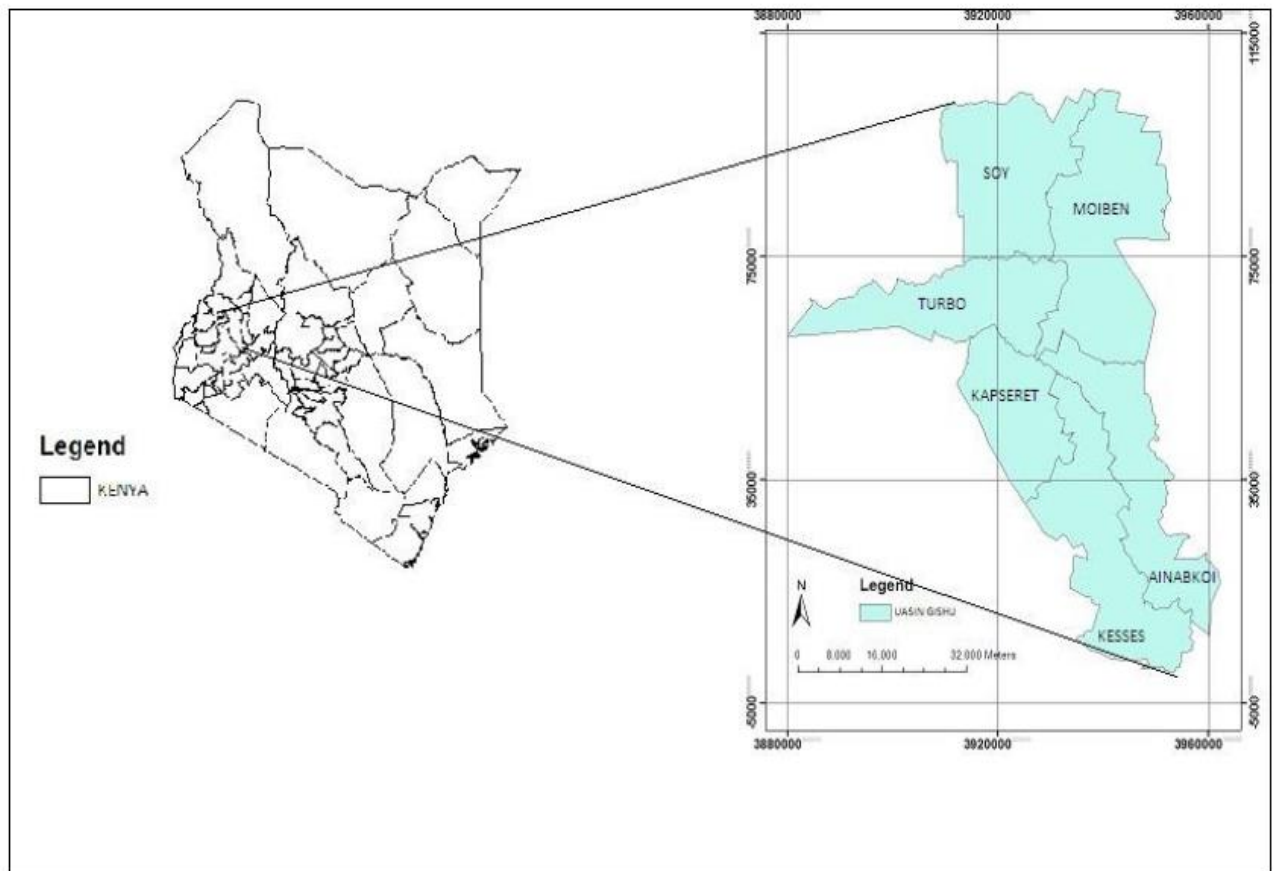
Scale: Strongly Disagree = 1: Disagree = 2: Neutral = 3: Agree =4: Strongly Agree = 5:

Affordability	1	2	3	4	5
My level of income determines my ability to go to hospital					
The cost of diagnostics tests and medicines required governs my frequency of obtaining services					
The indirect costs such as loss of work productivity contributes to attending my hospital visits					
The intangible costs including pain and lifestyle changes play a role fulfilling my hospital appointments					
The actual cost of cancer services including doctors' fees determines affordability to receiving services					
Location of service	1	2	3	4	5
Long distance between my residence and health center hinders me from my appointment schedules					
Transportation means and cost determines to access services					

Adherence to treatment schedules availability of specialists at the specialty centers determines my					
Availability	1	2	3	4	5
Screening services during my visits are adequate encouraging me to use the facility					
We are informed and diagnosed with cancer in time which encourages uptake of the health care service					
There are adequate oncology staff to manage all patients waiting for services improving uptake of the health care service					
Time while waiting time at the health center improving uptake of the health care service					
Patients are always provided with adequate patient education uptake of the health care service					
Acceptability	1	2	3	4	5
Adequate capacity to administer the necessary help in the facility					
Meet all my hospital schedule due to inconvenient location of specialized services					
Receiving recommend specialist oncology services at the hospital					
Density of oncology specialised healthcare services to serve all the patients visiting the hospital					
Adequate skilled oncology personnel in the unit					
Uptake of services	1	2	3	4	5
The oncology specialized health center always gives me adequate services for every visit					
I am always given adequate services for every visit					
I am always encouraged to visit the cancer health center because I receive adequate attention					
I am always effectively attended to and treated for cancer as scheduled					
There is timely diagnosis of cancer despite long waiting time					
Staff available always provided treatment scheduled on time					

Thank you for your co-operation

APPENDIX II: STUDY SITE



APPENDIX IV: LEVEL 3 AND LEVEL 4 HEALTH CENTRE IN UASIN GISHU

Facility Code	Facility Name	Type	Owner	County	Division	Location	Sub Location	KEPH Level	Open 24 Hrs.	Open Weekends	Beds	Cots	Operational Status
14555	Huruma District Hospital	District Hospital	Ministry of Health	Uasin Gishu	Turbo	Kapyemit	Huruma	Level 3	1	1	4	0	Operational
16347	Burnt Forest Rhdc (Eldoret East)	Health Centre	Ministry of Health	Uasin Gishu	Ainapkoi	Olare	Burnt Forest	Level 3	0	0	16	8	Operational
14317	Chembulet Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Moiben	Kimoning	Cheburbur	Level 3	0	0	6	0	Operational
14335	Chepkanga Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Moiben	Sergoit	Keljil	Level 3	1	1	0	0	Operational
14624	Kabobo Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Soy	Kipsomba	Kapsang	Level 3	0	0	37	0	Operational
14769	Kapsoya Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Ainapkoi	Kapsoya	Kapsoya	Level 3	0	0	0	0	Operational
14893	Kipkabus Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Ainapkoi	Kipkabus	Kipkabus	Level 3	0	0	0	0	Operational

14915	Kipsigak Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Soy	Koisagat	Lolkinyei	Level 3	2	0	2	0	Operational
15205	Moi University Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Kesses	Kesses	Kesses	Level 3	0	0	0	0	Operational
15206	Moiben Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Moiben	Moiben	Moiben	Level 3	1	1	10	0	Operational
15209	Moi's Bridge Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Soy	Moisbridge	Moisbridge	Level 3	0	0	22	0	Operational
15616	Sosiani Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Soy	Sosiani	Sosiani	Level 3	1	1	12	0	Operational
15623	Soy Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Soy	Soy	Soy	Level 3	0	0	18	0	Operational
15753	Turbo Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Turbo	Kaptebee	Kaptebee	Level 3	1	1	12	0	Operational
15779	West Health Centre	Health Centre	Ministry of Health	Uasin Gishu	Soy	Kibulgeng	Kibulgeng	Level 3	0	0	30	0	Operational
15758	Uasin Gishu District Hospital	District Hospital	Ministry of Health	Uasin Gishu	Moiben	Chepkoilel	Chepkoilel	Level 4	1	1	8	0	Operational

15788	Ziwa Sub-District Hospital	Sub-District Hospital	Ministry of Health	Uasin Gishu	Soy	Sirikwa	Sirikwa	Level 4	0	0	20	4	Operational
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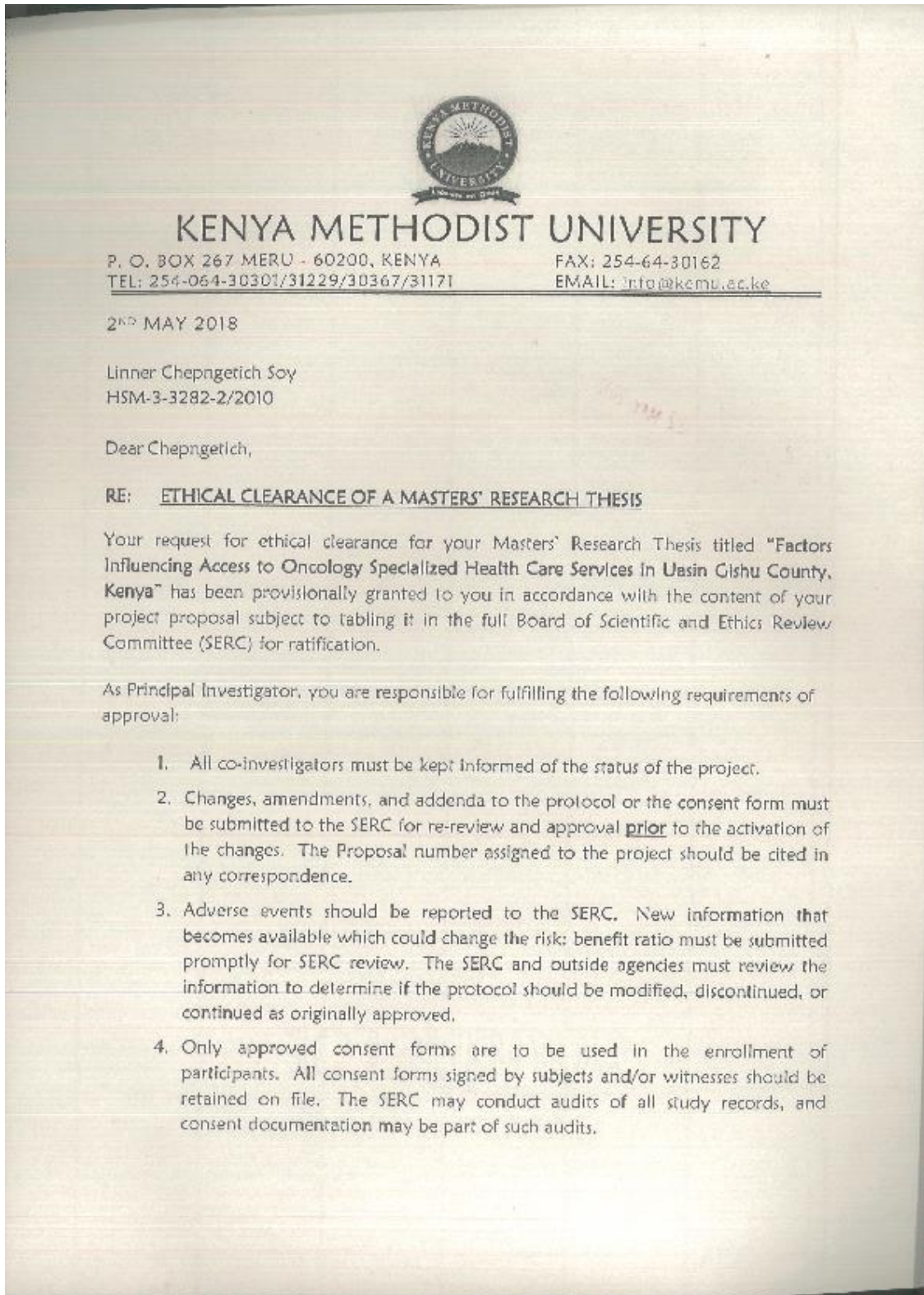
Source: Ministry of Health, Kenya (2017)

Cancer cases recorded by Eldoret Cancer Registry

	Female	Male	Total
Uasin Gishu Central	32	11	42
Kesses	15	5	20
Soy	11	4	15
Moiben	12	7	19
Ainabkoi	10	3	13
Kapsaret	12	3	15
Turbo	13	4	17
Total	105	37	142

Source: Mwangi (2014), *Use of GIS in Mapping of Cancer Prevalence a Case Study of Uasin Gishu County*

APPENDIX V. ETHICAL CLEARANCE CERTIFICATE



5. SERC regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to the SERC in order to continue the study beyond the approved period.** Failure to submit a continuing review application in a timely fashion will result in termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

Please note that any substantial changes on the scope of your research will require an approval.

Yours sincerely






DR. WAMACHI
Chair, SERC

cc: Director, RI & PGS

APPENDIX VI: LETTER FROM NACOSTI

THIS IS TO CERTIFY THAT: **Permit No : NACOSTI/P/19/58435/23401**
MS. LINNER CHEPNGETICH SOY **Date Of Issue : 26th February, 2019**
of KENYA METHODIST UNIVERSITY, **Fee Received :Ksh 1000**
14-20225 Kimulot, has been permitted to
conduct research in Uasin-Gishu
County
on the topic: FACTORS INFLUENCING
UPTAKE OF ONCOLOGY SPECIALIZED
HEALTH CARE SERVICES IN UASIN GISHU
COUNTY, KENYA
for the period ending:
26th February, 2020


.....
Applicant's
Signature



Director General
National Commission for Science,
Technology & Innovation



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/19/58435/23401**

Date: **26th February, 2019**

Linner Chepngetich Soy
Kenya Methodist University
P.O. Box 267 – 60200
MERU

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “*Factors influencing uptake of oncology specialized health care services in Uasin Gishu County, Kenya*” I am pleased to inform you that you have been authorized to undertake research in **Uasin Gishu County** for the period ending **26th February, 2020**.

You are advised to report to **the County Commissioner, the County Director of Education and the County Director of Health Services, Uasin Gishu County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Uasin Gishu County.

The County Director of Education
Uasin Gishu County.