

Original Research Article

FACTORS INFLUENCING ACCESS TO ONCOLOGY SPECIALIZED HEALTH CARE SERVICES IN UASIN GISHU COUNTY, KENYA

ABSTRACT

In Kenya, absence or poor access for oncology services has escalated the total national mortality rate in Kenya. Despite numerous studies on the increased prevalence and incidence of cancers, there is insufficient empirical literature explaining the factors influencing the increased absence or poor of access to oncology tertiary healthcare services in Uasin Gishu County, a research gap filled by this study. This study determined factors influencing access to oncology specialized healthcare services among patients in Uasin Gishu. 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 influence on the uptake of oncology specialized healthcare services in Uasin Gishu County ($\beta=0.883$, $p<0.010$), location of oncology services had a low negative and very strong significant influence on uptake of oncology specialized healthcare services in Uasin Gishu County ($\beta=-0.134$, $p<0.100$), acceptability of oncology services has a moderate significant and positive effect on uptake of oncology healthcare services in Uasin Gishu County ($\beta=0.368$, $p<0.010$), and availability of oncology specialized healthcare services has a negative and very strong significant effect on uptake of oncology specialized healthcare services in Uasin Gishu County ($\beta = -0.193$, $p< 0.010$). 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; seek to provide affordable oncology services through establishment of a kitty fund for low income oncology patients and stakeholder participations, establish mobile oncology clinics to reduce long distance travelled by the patients, build trust on its residents on the cancer service delivery through provision of frequent and adequate screening services, and provide sufficient resources (increase centres, skilled oncology staff, and sufficient technology).

Keywords: acceptability of oncology services, affordability of oncology services, availability of oncology specialized healthcare services, location of oncology services, oncology services, tertiary healthcare services, uptake of oncology specialized healthcare services

1. INTRODUCTION

1.1 Background of the Study

According to available statistics poor access to oncology services is 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, 2010). In the year 2009, oncology accounted for 7.9 million deaths; approximately 13% of all deaths worldwide (Mwangi, 2014; Academic Model Providing Access to Healthcare [AMPATH], 2015). On realization that poor access to oncology health services escalates incidence of curable cancers, most countries in the world have focused on improving access to oncology health services purposely to ensure decline in cancer incidences and mortality (Ali, Kuelker & Wassie, 2012).

Despite implementation of various initiatives and strategies for improving uptake of oncology services, access to these services in the African continent is significantly lower than in developed countries (Global Medicine, 2011). This leads to unavoidable death caused by curable cancers as witnessed in the year 2002, where estimated than 500,000 annual deaths occurred from cancers in Africa (AMPATH, 2015). In Kenya, the prime challenge in access to oncology services is the availability of oncologist specialists, which makes it difficult for a great majority of the population to access oncology treatment services (Pusoentsi, 2014). Consequently, oncology patients are subjected to late screening and improper attention on cancer which might result to unavoidable fatalities (Wangigi, 2014).

In Uasin Gishu County access of healthcare services is attributed to; referral of patients from regional health facilities in regards to affordability; location of the facility, acceptability; and adequacy of resources. These dimensions correspond to abilities of patients; ability to perceive; ability to seek; ability to reach; ability to pay; ability to engage (Levesque, *et al.*, 2013). Thus, poor access 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 the service, and inadequate facilities (Wangigi, 2014).

1.2 Statement of the Problem

Although the government of Kenya has established specialized healthcare system and implemented initiative as well as strategies for addressing incidences and mortality cases caused by diseases, such as cancer menace, absence or poor access for oncology services in a specialized referral healthcare facilities has persisted (Mwangi, 2014). This is subjecting most oncology patients to prolonged pain and suffering, which in itself may result into death. In fact, poor access to oncology services has escalated the total national mortality rate in Kenya, where 27,000 Kenyans are dying from cancers annually (Mwangi, 2014). Despite a wide array of literature on the increased prevalence and incidence of cancers, there is limited empirical research explaining the factors influencing access to oncology services by cancer patients in Kenya. Lack of sufficient is leading to little focus on issues related to oncology service access for those who already have the cancer. To enable appropriate intervention, there is need to highlight issues of access to oncology services by cancer patients. In this regard, this study was done in Uasin Gishu County is to describe the factors that influence access to oncology specialized services in Uasin Gishu County locking the existing gap.

1.3 Purposes of the Study

The purpose of this study was to establish the factors influencing access to 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 oncology services on access to specialized healthcare services in Uasin Gishu County.
- ii. To establish the influence of location of oncology services on access to specialized healthcare services in Uasin Gishu County.
- iii. To determine the effects of acceptability of oncology services on access to specialized healthcare services in Uasin Gishu County.
- iv. To determine the effects of availability of oncology on services access to specialized healthcare services in Uasin Gishu County.

1.5 Research Questions

The study answered the following questions:

- i. What is the influence of affordability on access to oncology specialized healthcare services in Uasin Gishu County?
- ii. What is the influence of accessibility on access to specialized oncology health care serviced in Uasin Gishu County?
- iii. What are the effects of acceptability on access to oncology specialized healthcare services in Uasin Gishu County?
- iv. What is the influence of availability on access to oncology specialized health services in Uasin Gishu County?

2 LITERATURE REVIEW

The study reviewed related literature, from theories found useful in design of a conceptual framework for the study and empirical research which are useful in identifying the research gaps.

2.1 Theoretical Framework

The theories found very useful in explaining access to oncology tertiary healthcare services in term of; affordability, location, acceptability, and availability of oncology services. The study explicitly reviewed the Health Care Utilization Theories and Models.

Health Care Utilization Theories and Models

This study reviewed the Mechanic's general theory(1978) is help seeking takes a psychological approach to health care utilization by incorporating decision points which determine illness behaviour; such as; the treatment availability via location, cost (economic, psychological), and treatment resources (Wolinsky, 1988). According to the Mechanic's theory, access to healthcare services is affected by the factors considered in this study; affordability; location of the facility, acceptability; and availability.

2.2 Empirical Review

The study reviewed related empirical research on; affordability of oncology service, location of the facility, acceptability, adequacy, and availability of oncology service. Levesque *et al.*, conducted a study in the year (2013) which established that found that access to identify healthcare is determined the five dimensions of location of the facility of healthcare service; approachability; acceptability; availability; ability to pay, and appropriateness. Meanwhile Ware's (2013) study shows that the barriers to accessing health services faced by people living in urban and regional communities are; location of the facility), affordability, appropriateness and cultural acceptability.

The study by Mushtaq *et al.*, (2011) found that approximate family income affects accessibility of healthcare services.

The study by Maranga *et al.*, (2013) found that the barrier to getting treatment was that patients have to pay and yet could not afford it. As Roshandel *et al.*, (2011) study concluded that several factors contributed to disparity in healthcare utilization in the studied population, the study by Utoo, Ngwan and Anzaku (2013) found that reasons for non-utilization of services was absence of screening centers in close locality. Ware's (2013) recommend that physical accessibility in non-standard settings and providing some services through home visitation to improve physical access.

According to the study by Levesque *et al.*, (2013) acceptability can be addressed through a culturally secure approach to service delivery. This includes: allowing Indigenous people a choice between Indigenous-specific and mainstream services; employing Indigenous staff (both professionals and health workers) to bridge cultural gaps; improving the cultural understanding of health professionals; providing services in non-traditional settings; improving cross-cultural communication; and respecting cultural values such as gendered and avoidance behaviors. Incorporating the appropriate kin in consultations and treatment as much as possible is also crucial Yaffee *et al.*, (2012) study established the main factor contributing to lack of location of healthcare services was previous visits to the facility experience. Ware (2013) study established that appropriateness can be improved by increasing the number of multifaceted, culturally competent and on-going health programs delivered by a skilled multidisciplinary workforce able to sustain effective long-term treating relationships and links with other providers.

2.3 Knowledge Gaps

Previous studies established that the barrier to getting treatment was that patients have to pay and yet could not afford as dissatisfaction with quality of care and transportation difficulties was major location of healthcare services hindrance. It was established that availability of the health service contribute to disparity in healthcare access while accessibility, affordability, appropriateness were the main hindrance to access of health care services. However, there is limited information showing that the factors influencing location of oncology healthcare services in Kenya 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. The present study will fill the gaps in these studies.

3. METHODOLOGY

This chapter provides a description of the research design and the methodology applied in carrying out the research study and justification for using a particular research design. It also describes the characteristic of the population which was used in the study, detailed description of sampling methods used and procedures, data collection instruments and the procedure of data collection, pre-testing and finally describes the appropriate data analysis method which generated the results.

3.1 Research Design

This study used descriptive cross sectional study aimed at assessing factors affecting access to specialized health care services for all cancer patients.

3.2 Target Population

The total number of cancer patients in Uasin Gishu health facilities is estimated to be 142 in Uasin County seen in 18 level 3 and level 4 facilities in Uasin County

(Ministry of Health, Kenya, 2017). So, the target population was the 142 patients with cancer in Uasin Gishu County who have been screened.

3.3.1 Inclusion criteria

- Patients who visited the facility two or more times
- All patients diagnosed with cancer who would give an informed consent
- Patients with cancer who were attending the oncology clinic at the various level 3 and 4 health facilities in Uasin Gishu County
- All Under 18 years whose caregivers gave consent on their behalf

3.3.2 Exclusion criteria

- 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.
- All patients under 18 years who are not able to make decisions on their own.

3.3 Sampling

Considering that the target population was small and manageable, the study purposively obtained information to only those who consent to participate. Purposive sampling was used where the entire target population will be targeted to participate in the study as respondents.

3.4 Data collection

The main source of data was primary sources; patients attending the oncology clinic and unit heads of departments. Data was collected from patients using a structured questionnaire, where tool addressed issues including the access to oncology tertiary healthcare services available in Uasin Gishu and factors associated with the access to oncology tertiary healthcare services in Uasin Gishu. The tool was administered to the respondents and the researcher provided guidance and clarifications on how to answer the questions, where the researcher then assisted the respondents in answering questions to make the exercise faster.

Before administration, the tool was pre-testing amongst 14 patient obtaining services from Kapsabet Hospital in Nandi County; a neighboring county to Uasin Gishu county. This test was used to ensure the reliability and validity of the research tool; where content validity was used to measure validity, and internal consistency test, based on Cronbach alpha was used to test for reliability.

The present study tested the research instrument, questionnaire, for reliability using the internal consistency technique based on the Cronbach Alpha method. The results obtained from the pilot testing of questionnaire, which showed that a reliability coefficient (Cronbach's Alpha) of 0.970 was obtained, are captured in Table 1.

Table 1: Reliability Test Results for the study variables

Variable	Cronbach's Alpha if Item Deleted
Affordability of oncology services	.977
Location of oncology services	.906
Acceptability of oncology services	.898
Availability of oncology tertiary healthcare services	.916
Uptake of oncology tertiary healthcare services	.911
Cronbach Alpha (α) = 0.941; N = 5	

Source: Research Data (2018)

The results showed that the Cronbach's Alpha coefficient was 0.941, which was way above the threshold of 0.7 as recommended by Kothari (2012). The internal consistency reliability (α) of 0.941, was an indication of a very high consistency of the study variables. Each of the variables; affordability of oncology services ($\alpha = 0.977$), location of oncology services ($\alpha = 0.906$), acceptability of oncology services ($\alpha = 0.896$), availability of oncology tertiary healthcare services ($\alpha = 0.916$) and uptake of oncology tertiary healthcare services ($\alpha = 0.911$) had internal consistency reliability $\alpha > 0.7$, indicating a very high consistency of the study variables. The study therefore considered the tool as having very high consistency and acceptable for measuring all the study variables to yield consistent and credible results.

3.5 Data Analysis

The collected data was analysed using quantitative approach to produce descriptive statistics for helping establish patterns, trends and relationships, and to made it easier for the researcher to understand and interpret implications of the study (Aneshensel, 2004). Then inferential analysis was carried out to establish the relationship between the Independent Variables (IVs) and the Dependent Variable (DV). This is where the study first carried out correlation analysis to assess the degree/strength of relationship that existed between the determinants (IVs) and the DV and multiple regression analysis was used to estimate a model.

4 RESULTS AND DISCUSSIONS

The results are presented pictorially using figures and tables for ease of interpretation as well as a narration of the results.

The study response rate was 140(92.78%) of the sample size, which according to Mugenda and Mugenda (2003) was very good since it was above 69%. Mugenda and Mugenda (2003) classify a response rate of above 69% as being very high response and indicate that such a response leads to producing accurate and credible results from the data analysis.

4.1 Respondents' Socio-Demographic Information

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 (84.51%) out of the sampled population of 142(100%). A response rate of 84.51% 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.

These results show that a majority of 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.

A majority of 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.

4.2 Descriptive Analysis

The study data collected using a structured questionnaire was analyzed based on the objectives to produce descriptive statistics that was used to describe the properties of the study variables and how the independent variables (IVs) related to the dependent variable (DV).

The data used to assess the dependent variable; uptake of oncology tertiary healthcare services in Uasin Gishu County, was collected on a questionnaire constructed using a 5 point Likert Scale (1-5); strongly Disagree = 1; disagree= 2; neutral = 3; agree =4; strongly agree = 5, the obtained the mean (M) and standard deviation (SD) for each indicator of the DV as well as the overall DV. Since these Means contained fraction, they were moderated based on the statistics;

Chart 1. Questionnaire survey on uptake of oncology tertiary healthcare services

<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 IVs; affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology tertiary 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

Chart 2. Survey results on affordability of oncology services

<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

4.4.1 Uptake of oncology tertiary healthcare services in Uasin Gishu County

The study analyzed the dependent variable uptake of oncology tertiary healthcare services, seeking to establish the status of access to specialized healthcare services in Uasin Gishu County. These results are captured in Table 2.

Table 2: Analysis by Uptake of oncology tertiary healthcare services

<u>Uptake of oncology tertiary healthcare services</u>	<u>M</u>	<u>SD</u>
I am always given adequate services for every visit	3.05	1.04
I am always encouraged to visit the cancer health center because I	2.98	1.40

receive adequate attention		
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
It is possible to detect cancer in a timely manner with available equipment in the specialised centre	3.41	1.09
Staff available always provided treatment scheduled on time	3.53	1.40
Average uptake of oncology tertiary healthcare services	3.20	1.26

Source: Research data (2018)

These results indicate that the uptake of oncology tertiary healthcare services in Uasin Gishu 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 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 been 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.

According to the study results, it 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 despite long waiting time and other times there diagnosis of cancer was not done on time. This confirms the findings by Wangigi (2014) that some oncology cases are preventable or even curable when diagnosed and treated early enough.

However, oncology patient need to receive adequate oncology tertiary healthcare services at the right time to curb this problem. Further, the study by Ngugi *et al.* (2012) show that that many cancer cases are not detected early due to lack of adequate access to it.

The results show that it was possible to detect cancer in a timely manner with available equipment in the specialised centre 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 access to specialized oncology healthcare services in Uasin Gishu County is central in the performance of health care systems.

4.4.2 Influence of affordability of oncology services on access to healthcare services

The study determine the influence of affordability of oncology services on access to specialized healthcare services in Uasin Gishu County by analyzing the affordability of oncology services s and the results captured in table 3.

Table 3: Analysis by Affordability of oncology services

Affordability of oncology services	M	SD
My low income status has hindered me from going to hospital	3.95	1.28
I am not able to pay the high cost of diagnostics tests and medicines required	3.27	1.21
The undeclared indirect costs such as loss of work productivity hinders my hospital visits	3.97	0.85
The intangible costs including pain and lifestyle changes hinder my hospital appointments	4.34	0.64
The actual cost of cancer services including doctors' fees hinder me from receiving services	3.50	1.18
Average affordability of oncology services	3.88	0.99

Source: Research data (2018)

The findings in the present study were that affordability of oncology services highly influenced the uptake of oncology tertiary healthcare services in Uasin Gishu, which reveals the findings in the study by Ntekim (2012) which found that low socio-economic statuses have a greater risk of having cancers.

The costs incurred was found to be problem to poor patients due to economic losses. As study by Gauthier and Wane, (2008) revealed price affects the access to healthcare services, the study by Maranga *et al.*, (2013) found that the barrier to assessing oncology specialized healthcare services was the requirement for patients have to pay and yet could not afford it. The findings in the present study therefore confirmed the findings in the studies earlier reviewed. Thus, affordability of oncology service affects access to oncology tertiary healthcare services in Uasin Gishu county since oncology 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 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 tertiary healthcare services. These findings are similar to those in the study by Wangigi (2014) that direct cost of diagnostic tests, hospital and physician fees, and the drug therapy was not affordable to the oncology patient. 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),

These costs are incurred by patients as well as their care givers and families and are a great hindrance to access to oncology healthcare. Other cost that may lead to low access to healthcare is pain, which is one of the most feared consequences of cancer experienced by patients (Shahnazi *et al*, 2012). Manalo (2008) postulates that when

pain is on-going and uncontrolled, it has a detrimental and deteriorating effect on virtually every aspect of a patient's life.

In this study it was found that the intangible costs including pain and lifestyle changes hindered hospital appointments and this very highly led to the low uptake of oncology tertiary healthcare services in Uasin Gishu. These findings support the assertion by NCI-Center to Reduce Cancer Health Disparities (2004) who posit that these are costs related to adverse health effects for which there are no market rate. Such cost include and not limited to; reduction in quality of life due to physical pain, emotional problems, and lifestyle changes. These costs can also extend beyond the patient to relatives who experience grief, bitterness, or depression.

Consequently, the poor are at a greater risk of being diagnosed and treated for cancer. The results show that the actual cost of cancer services including doctors' fees highly hindered them from receiving services while the study by Maranga *et al.*, (2013) found that the barrier to getting treatment was that patients have to pay and yet could not afford it. So, the findings in the present study agree to the study 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 specialised 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 self-employed were mostly doing informal businesses that give little. Also the study by Utoo *et al.* (2013) found there was very poor access to screening services due to prohibitive cost, leading to its concluding that services should be made affordable to all. The study suggested for ensuring ability to seek to pay. Mushtaq *et al.*, (2011) revealed that approximate family income affected accessibility of healthcare services.

4.4.3 Effect of location of oncology services on access to healthcare services

The study assess the second objective; to establish the influence of location of oncology services on access to specialized healthcare services in Uasin Gishu County through analysis of effect of location of oncology services. The results are shown in table 4.

Table 4: Analysis by of location of oncology services

Effect of location of oncology services	M	SD
Long distance between my residence and health center to hinders me from my appointment schedules	3.34	1.31
Lack of Transportation means and cost make it difficult to access services	4.56	0.80
Lack of specialists at the specialty centers hinder my treatment schedules	2.78	1.36
Late diagnosis hinder further interventions required	3.20	1.39
Average effect of location of oncology services	3.47	1.22

Source: Research data (2108)

The results show that location of oncology services highly affected the uptake of oncology tertiary 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 to hindered them from their appointment schedules moderately affecting uptake of oncology tertiary healthcare services in Uasin Gishu County. The findings in this study confirm the assertion by Farmer *et al.* (2010) who postulate that the most frequently cited barrier to cancer treatment in resource-poor settings is the absence of specialists and specialty centers.

According to Farmer *et al.* (2010), all or most of the oncology specialists in Kenya are located in Nairobi, making it almost impossible for the largest number of the population to access their services (Musibi, 2008).. Since Uasin Gishu county is far from Nairobi, then it means that advance specialised service are also far away from the the patients of the County, lowering the uptake of oncology tertiary healthcare services in that county. Mwasi (2010) also established that distance, was the the strongest barriers to health facility attendance, which was also established in the present study.

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 tertiary 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 specialised centre 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 show that specialized healthcare services lacked specialists at the specialty centers hindering their treatment schedules and this moderately affect the uptake of oncology tertiary healthcare services in Uasin Gishu County. These finding agree to those in the studies by Ware (2013), Mushtaq *et al.*, (2011), Yaffee *et al.*, (2012), and Almuammar *et al.* (2010). The study by Ware (2013) established that one of the barriers to accessing health services faced by people living in urban and regional communities was physical accessibility, affordability, appropriateness and cultural acceptability. Meanwhile the study by Mushtaq *et al.*, (2011) revealed that the reasons for not using the public health services were due to the location of healthcare services. Yaffee *et al.*, (2012) study established the main factor contributing to lack of location of healthcare services

In the present study, some patients were found to have had been diagnosed late which hindered further interventions required and moderately affecting the uptake of oncology tertiary healthcare services in Uasin Gishu County. Almuammar *et al.* (2010) had revealed that a high number of the reported cancer cases are diagnosed at late stages, when very little can be achieved with therapeutic intervention. Delayed presentation or late diagnosis is associated with low survival (Almuammar *et al.*, 2010). This might be one of the reasons for the known poorer survival from cancer in Uasin Gishu County. Ware's (2013) study recommends that physical accessibility in non-standard settings and providing some services through home visitation to improve physical access.

4.4.4 Effects of acceptability of oncology services on on access to 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 are shown in table 5.

Table 5: Analysis by acceptability of oncology services

Acceptability of oncology services	M	SD
I experienced in all my visits inadequate screening services	3.15	1.35
It took long to be informed and diagnosed with cancer	2.73	1.54
The oncology staff are too few to manage all patients waiting for services	3.03	1.39
I experience long long waiting time at the health center	2.51	1.25
I experienced failures in providing adequate patient education	2.83	1.14
Lack of drugs, neglect and poor treatment		
Average acceptability of oncology services	2.85	1.33

Source: Research data (2018)

The present study found the acceptability of oncology services had a moderate effect on uptake of oncology tertiary healthcare services in Uasin Gishu County which agrees to the study by. The study by Mushtaq *et al.*, (2011) established that dissatisfaction with quality of care and transportation difficulties was major hindrance access to healthcare services. Poor quality of the health service and not having trust in the health service provider was associated with poor health service utilization, which for both the urban population and the poor caused dissatisfaction with the quality of care.

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

Mulemi (2010) indicates that there is a serious shortage of oncologists in Kenya. One of the reasons attributed for this is the lack of policy on oncology training in Kenya, this being apparent from the small number of practicing oncology management specialists including; oncologists; radiographers, oncology nurses and other staff meant to be working in the cancer ward. There is also scanty focus on cancer in existing medical training programs, which tends to create a setting in which cancer patients feel less attended to. PACT (2010) indicates that in Africa alone, there is a shortage of nearly 3000 cancer care workers

O'brien and Gostin (2011) clearly posit that for a function health system to work, having the appropriate mix of skilled health care workers is fundamental. However, human resources for health is a major issue Kenya is facing is brain drain. This was

emphasized by Shahnazi et al (2012) who indicate the staff may have low scores on knowledge and attitudes regarding cancer pain management.

The results in the present study show that sometimes the patients experienced inadequate screening services in their visits which moderately affected their uptake of oncology tertiary healthcare services in Uasin Gishu County. These findings are similar to the by Freeman and Chu (2005), which established that the health care providers are prone to give inadequate patient education, which may contribute to inadequate screening services, untimely reporting of screening outcomes, and diminished quality of care (Gerend & Pai, 2008). Health care providers therefore need to have sound knowledge on the effective management of the patients' pain. Shahnazi *et al.*(2012). Points out that the nurses need to have high scores on knowledge and attitudes regarding cancer pain management (Laugsand *et al.*, 2010). Thus, educational support is needed for effective pain management.

According to the resulting this study, there were no long long waiting time at the health center, factor that encouraged uptake of oncology tertiary healthcare 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 were no long long waiting time at the health center. However, incompetence and perceived poor attitude of health workers is a barrier to health care access. Onyango and Macharia (2006) indicate that hospitals have shown that the referral system is the main cause of delayed presentation of head and neck cancer to the hospital.

The results in this study show that patients experienced failures in providing adequate patient education, which moderately affected their uptake of oncology tertiary 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 although patient accessed healthcare services where they received medical services from a health care professional, they bypassed local primary care facilities. The factors associated with bypass included satisfaction with the local hospital. The study established that many rural patients seek important hospital services at health care institutions outside their community. They further suggested that in extreme situations, bypass may result in reductions in the number of health care professionals and range of medical services offered, or even hospital closure.

4.4.5 Effects of availability of oncology tertiary healthcare services

The study sought to establish the effect of availability of oncology tertiary healthcare services on services access to specialized healthcare services in Uasin Gishu County by assessing objective three; to determine the effects of availability of oncology on services access to specialized healthcare services in Uasin Gishu County and the results recorded in table 6.

Table 6: Analysis by availability of oncology tertiary healthcare services

Availability of oncology tertiary healthcare services	M	SD
There is lack of adequate capacity to administer the necessary help in the facility	3.91	1.34
I did not meet all my hospital schedule to inconvenient location of specialised services	4.15	1.12
I did not receive recommend specialist oncology services at the hospital	3.95	1.11
Low density of oncology specialised healthcare services to serve all the patients visiting the hospital	3.12	1.10
There are inadequate skilled oncology personnel in the unit	3.54	1.23
The is lack sufficient technology (drugs, equipment)	4.50	0.70
Average availability of oncology tertiary healthcare services	3.86	1.10

Source: Research data (2018)

The present study found that availability of oncology tertiary healthcare services highly affected the uptake of oncology tertiary healthcare services in Uasin Gishu County. That the specialized healthcare services in Uasin Gishu County were not readily accessible and this highly contributed to the low uptake of oncology tertiary healthcare services. These findings agree to the findings in the study by Roshandel *et al.*, (2011) that availability of the health service contributes to disparity in healthcare utilization

According to the results in the present 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 tertiary healthcare services in Uasin Gishu County. This a representation of the status of availability of oncology tertiary 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 have established that out of 100 patients who turn up for oncology services at KNH every Monday for regular admission, only 20 or fewer would secure beds. The admission of patients who need urgent attention on other days further limits the number of beds that would be available on Mondays. Mulemi (2010) indicates that access may be hindered; by inconveniences in the location of available resources, distance from a health service provider, travel time to a health facility, and waiting time to see a health professional. Availability of hospital resources therefore determines whether patients can access to the oncology healthcare service centers and hence the uptake of oncology tertiary healthcare services in Uasin Gishu County. The study found that the patients were not able to meet their entire hospital schedule due to inconvenient location of specialised services and this highly affected the uptake of oncology tertiary healthcare services. Healthcare reports have shown that Cancer treatment infrastructure in Kenya is inadequate and some cancer management options are not readily available (MOPHS & MOMS, 2012). The patients did not receive recommend specialist oncology services at the hospital highly affecting the uptake of oncology tertiary healthcare services in Uasin Gishu County. MOPHS and MOMS (2012) have established that many patients seek care in lower level health

facilities where diagnosis of cancer is hampered by lack of facilities and qualified staff.

The study found that the low density of oncology specialised healthcare services to serve all the patients visiting the hospital moderately affected the uptake of oncology tertiary healthcare services in Uasin Gishu County while the inadequacy of skilled oncology personnel in the unit which highly affected their uptake of oncology tertiary healthcare services in Uasin Gishu County. A study by Mwaniki *et al.*, (2002) show that uptake of oncology tertiary healthcare services was affected by lack of skilled staff at primary health care level, neglect and poor treatment in hospital.

In addition, Ware (2013) established that the ratio between the availability of staff and the size of the target population gives the measurement of availability coverage. That is, the number of oncology tertiary healthcare services facilities and personnel for the availability of technology. According to Ware (2013), appropriateness can be improved by increasing the competent and on-going health programs delivered by a skilled multidisciplinary workforce able to sustain effective long-term treating relationships and links with other providers.

This study found that lack sufficient technology (drugs, equipment) very highly affected the uptake of oncology tertiary 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 tertiary healthcare services in Kenya will be looked at the level of technology. This means that uptake of oncology tertiary healthcare services in Uasin Gishu County is influenced by technology since the ratio between the availability of drugs and the size of the target population gives the measurement of availability coverage and that the availability of technology (drugs, equipment) are able to sustain effective long-term treating relationships and links with other providers. Therefore, the resources available for delivering an intervention and their sufficiency effectively affect the uptake of oncology tertiary healthcare services in Uasin Gishu County.

4.3 Inferential Analysis

The correlation was done using the Pearson’s product moment correlation as results captured on Table 7.

Table 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 Sig. (2-tailed)	1				
	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).

Source: Research Data (2018)

The results of correlation analysis in table 7 show that, using Pearson’s’ product method and under 5% level of significance, each of the IV; affordability of oncology services (r = 0.858, p-value = .000), location of oncology services (r = 0.198, p-value = .019), acceptability of oncology services (r =0.389, p-value = 0.000) and availability of oncology tertiary healthcare services (r = 0.265, p-value = 0.002) was significantly related to uptake of oncology tertiary healthcare services in Uasin Gishu County because the probability value (p-value) for each was less than 0.05. The results show that the relationship between affordability of oncology services (r = 0.858) and uptake of oncology tertiary 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 tertiary healthcare services in Uasin Gishu County was moderate since the correlation coefficient (r) was between 0.3 and 0.6. However, the relationship between each of; availability of oncology tertiary healthcare services (r = 0.265), and location of oncology services (r = 0.198) and uptake of oncology tertiary healthcare services in Uasin Gishu County was very low since the correlation coefficient (r) was less than 0.3 and and greater than 0.1.

All IVs were then regressed against the DV to estimate the study model based on the equation;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e.....(ii)$$

Where;

Y = Access to oncology specialized healthcare services

X₁ = Affordability of oncology service,

X_2 = Location of the facility,
 X_3 = Acceptability of the facility,
 X_4 = Availability of oncology service
 β_0 is a constant (which is the value of dependent variable when all the independent variables; $X_1, X_2, X_3,$ and X_4 are 0).
 β_{1-4} are the regression coefficients or change induced by $X_1, X_2, X_3,$ and X_4
 e = error of prediction

Table 8. T statistics

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		

Using the model equation, the study carried out an Analysis of Variance (ANOVA) to test for goodness of fit of the study model. The study tested the model goodness of fit based on the study model using the Beta coefficients; $\beta_1 - \beta_4$ by checking whether, at 5% level of significance, all the coefficients of; affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology tertiary healthcare services were all zero (that is $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$) or they were not. The coefficients are all zero when the p-value > 0.05 and in this case the model is not fit for use since it lacks goodness of fit. However, when the p-value ≤ 0.05 then model is considered as being fit for use since it has goodness of fit.

Results in Table 9, indicates that p-value = .000 and since p-value < 0.05 ($F=24.178$, $P\text{-value}=.000$), then the study is confident that at 5% significance level level of significance (i.e. $\alpha = 0.05$), at least one of the predictors; c affordability of oncology services, location of oncology services, acceptability of oncology services, and availability of oncology tertiary healthcare services is useful in predicting the uptake of oncology tertiary healthcare services in Uasin Gishu County. Therefore the model is useful in explaining to uptake of oncology tertiary healthcare services in Uasin Gishu County.

The study made various interpretations, seeking to establish the significance of the independent variables in determining the dependent variable. Based on these results on affordability of oncology services, $T= 22.287$ and p-value= .000 and since p-value does not exceed 0.05 then at the $\alpha = 0.05$ level of significance, there exists enough evidence to conclude that the affordability of oncology services is not zero and,

hence, that affordability of oncology services is useful as a predictor of uptake of oncology tertiary healthcare services in Uasin Gishu County.

As acceptability of oncology services the results show that $T = 7.250$ and $p\text{-value} = .000$ then 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 tertiary healthcare services in Uasin Gishu County since $p\text{-value} < 0.05$.

The availability of oncology tertiary healthcare services results show 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 tertiary healthcare services is not zero and, hence, that availability of oncology tertiary healthcare services is useful as a predictor of uptake of oncology tertiary healthcare services in Uasin Gishu County.

Based on the results in table 10, the the estimated equation is $Y = -0.605 + 1.038X_1 + .256X_3 + 0.217X_4 \dots\dots\dots$ (iii)

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 tertiary 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 tertiary healthcare services in Uasin Gishu County and vice versa. However, availability of oncology tertiary healthcare service had negative coefficient, implying that it was indirectly proportional to uptake of oncology tertiary healthcare services in Uasin Gishu County. This means that an increase in availability of oncology tertiary healthcare service would lead to decrease of uptake of oncology tertiary 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 tertiary 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 tertiary 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 tertiary 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 tertiary healthcare services in Uasin Gishu County.

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

The results show that coefficient of determination was $.8192$, an indication that 81.92% of variation in uptake of oncology tertiary 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, all the three IVs; affordability of oncology services, acceptability of oncology services,

and availability of oncology tertiary healthcare services could significantly predict the DV (uptake of oncology tertiary healthcare services in Uasin Gishu County).

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The study established that the uptake of oncology tertiary healthcare services in Uasin Gishu County was moderate. The access to oncology specialized health care services in Uasin Gishu county is indicated by the uptake of oncology tertiary healthcare services in Uasin Gishu characterized by; adequacy of oncology services, patients encouraged to visit the cancer health center, receiving adequate attention, and patients effectively attending specialized health care centers. Other factors of uptake of oncology tertiary healthcare services include; treating for cancer as scheduled, timely diagnosis of cancer despite, managing waiting time, detect cancer in a timely manner, availability of the appropriate equipment in the specialised centre, availability of adequate skilled staff available for providing the correct treatment on scheduled on time

The study concludes affordability of oncology services has a strong significantly positive influence on the uptake of oncology tertiary healthcare services in Uasin Gishu County. The access access to specialized healthcare services is determined the patients' income level, where some are not able to effectively access the centers for treatment due their their low income status. The poor patients are highly hindered them from going to hospital by the lack of enough money to support to effectively pay the high cost of diagnostics tests and required medicines and actual cost of cancer services including doctors' fees highly hindered them from receiving services. There are undeclared indirect costs such as loss of work productivity as well as hindered, which hindered hospital appointments. These costs highly discourage patients from accessing the specialized healthcare services centers and lead to low uptake of oncology tertiary healthcare services in Uasin Gishu.

The study concludes that the location of oncology services negative low significant relationship with uptake of oncology tertiary healthcare services in Uasin Gishu County. Closeness to the tertiary healthcare services ensures convenience to access the services from the specialized healthcare. However, patients residing long distances away from the healthcare facilities find it hard to access the specialized healthcare service, hindering them from their appropriately attending to their appointment schedules. Also, lack of adequate and appropriate means of transportation as well as the high cost of transport makes it difficult for them to access services. There is need for adequate specialists at the specialty centers to ensure actualization of the treatment schedules and ensuring that patients are diagnosed appropriately. Sometimes the patients are diagnosed late, hindering further interventions required. There should be sufficient oncology tertiary healthcare service centers or service to accommodate the surrounding population.

The study concludes that the acceptability of oncology services has a moderate significant positive effect on uptake of oncology tertiary healthcare services in Uasin Gishu County. For acceptability of oncology services to positively influence the uptake of oncology tertiary healthcare services, there should be adequate screening services for patients in their visits, patients should be informed and diagnosed with cancer early enough, there should be adequate oncology staff to manage all patients waiting for services. Enough skill staff would appropriate short waiting time at the health center. The specialized health cares should provide patients and other people

with adequate education to positively improve uptake of oncology tertiary healthcare services in Uasin Gishu County.

The study concludes that the availability of oncology tertiary healthcare services has negative low significant relationship with uptake of oncology tertiary healthcare services in Uasin Gishu County. The availability of oncology tertiary healthcare services would highly and positively affect the uptake of oncology tertiary healthcare services; making specialized healthcare services readily accessible, specialized healthcare having adequate capacity to administer the necessary help in the facilities, and providing patients with recommended specialist oncology services at the hospital. The patients should be able to attend their entire hospital schedule when residing at convenient location. This would be made possible by increased density of oncology specialised healthcare services to serve all the patients visiting the hospital and adequate skilled oncology personnel in the unit. The sufficiency of technology (drugs, equipment) very highly affects the uptake of oncology tertiary healthcare services in Uasin Gishu County positively.

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 tertiary healthcare services and uptake of oncology tertiary healthcare services in Uasin Gishu County since the p-value for each was less than 0.05. Affordability of oncology services is highly and significantly related to and uptake of oncology tertiary healthcare services in Uasin Gishu County while there is a moderate significant relationship of between acceptability of oncology services and uptake of oncology tertiary healthcare services in Uasin Gishu County. However, the relationship between each of; availability of oncology tertiary healthcare services and location of oncology services and uptake of oncology tertiary healthcare services in Uasin Gishu County is low.

Each of; affordability of oncology services, location of oncology services and acceptability of oncology services has a positive significant relationship with uptake of oncology tertiary healthcare services in Uasin Gishu County while availability of oncology tertiary healthcare services is negatively and significant related to uptake of oncology tertiary healthcare services in Uasin Gishu County.

The concludes that 81.92% of change in uptake of oncology tertiary healthcare services in Uasin Gishu County is explained by; affordability of oncology services, acceptability of oncology services, and availability of oncology tertiary healthcare services. That is; affordability of oncology services, acceptability of oncology services, and availability of oncology tertiary healthcare services are estimators of uptake of oncology tertiary healthcare services in Uasin Gishu County..

5.2 Recommendations

The made recommendations based on study findings as well as for future research, which are contained in this section

5.2.1 Recommendations on Research Findings

The study suggested policy recommendation. Firstly, the study recommends that since health is devolved function, the county government of Uasin Gishu should seek provide affordable oncology services through establishment of partnership programs such as the Public Private partnership (PPP) and stakeholder participations for improving the quality, affordability, and efficiency of its service delivery (Okeyo. 2013). The most appropriated PPP arrangement that county and the private entities

may use is Design, Build, Finance and Maintain (DBFM) where the public enterprise would assured of long returns (Hearne, 2009).

The county government should encourage stakeholder participations (Olando & Kimuyu, 2018). Based on findings by Olando and Kimuyu (2018), stakeholder participation strategy would allow for active involvement of the county residents in making decision on how to raise funds for needy oncology patients, identification of deserving patients and active management of the funding.

Secondly, the study recommends that the county in collaboration with; the national governments, Community Based Organisations (CBOs) and Non-Governmental Organisations (NGOs) establish mobile oncology clinics. Since these clinics will be visiting the areas of residence, they would contribute towards reduction of long distance travelled by the patients accessing specialized healthcare services in Uasin Gishu County. Importantly, the collaborations should have awareness and sensitization wing which would provide seminars, public “barazas” and education to the county residents sensitize on the need for regular screening. During these sensitizing meeting, the team should as well carry out public oncology screening. This provide for early diagnosed of any identified patients for further interventions at the early stages.

Thirdly the study recommends that the county government of Uasin Gishu should build trust on its residents on the oncology service delivery through provision of frequent and adequate screening services.

Lastly, the study recommends that the county government should improve availability of oncology tertiary healthcare services by ensuring; its effectiveness, it is readily accessible, adequate capacity to administer the necessary help; there is adequate skilled oncology personnel in each center, and sufficient technology (drugs, equipment). using resource management skills (Olando & Kimuyu, 2018).

5.2.2 Recommendations for Further Study

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

This study established the development of uptake of oncology tertiary 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 tertiary healthcare services. However, the study fell short of explain the extent to which location of oncology service affects the uptake of oncology tertiary healthcare services in Uasin Gishu County. So other studies should be conducted to establish the level at which location of oncology service affects the uptake of oncology tertiary healthcare services in Uasin Gishu County.

The study was conducted in Uasin Gishu County one of the 46 county in Kenya. This rendered the gernalisation of the study to the entire republic of Kenya difficult. Therefore other studies should be conducted on the factors influencing access to oncology specialized healthcare services in amongst the Kenyan counties.

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