

**COMPARING PATIENT RELATED FACTORS ASSOCIATED WITH
CHOICE OF CANCER TREATMENT CENTRE, LOCALLY IN KENYA OR
ABROAD: A CASE CONTROL STUDY**

**A dissertation submitted in partial fulfillment of the Post Graduate Diploma in Research
Methodology in the Institute of Tropical Diseases in the University of Nairobi**

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This dissertation is my original work and has not been presented for a degree in any other University

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DEDICATION

This dissertation is dedicated first to my husband, Dr Paul Wangai, Jr who has been my greatest support and encourager. Secondly, to my two wonderful sons, Frederick Wangai and Enan Wangai, who provided unwavering support, understanding and encouragement throughout the course. Thirdly, to all the patients diagnosed with cancer in Kenya. Fourthly, and most important to Jesus Christ, the greatest physician of all.

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LIST OF ABBREVIATIONS AND ACRONYMS

DSQAR	Department of Standards Quality Assurance and Regulation
MOH	Ministry of Health
KNH	Kenyatta National Hospital
KES	Kenya Shillings
NCD	Non-communicable Diseases
NHIF	National Health Insurance Fund
QOC	Quality of Care
TCC	Texas Cancer Centre
UK	United Kingdom
USA	United States of America
USD	US Dollars
WHO	World Health Organization

ABSTRACT

Background

Medical tourism is an emerging and growing industry globally. In Kenya, medical tourism is characterized by patients seeking treatment abroad for non-communicable diseases, such as cancer. Further, it is associated with significant loss of foreign exchange and introduction of multidrug resistant microorganisms by the returning patients. The factors that influence patients to choose treatment centres locally or abroad and their perceptions on quality of care (QOC) they receive have not been adequately researched and documented.

There is need to determine these factors and contribute to the body of knowledge that will assist the health sector become responsive to the increasing burden of noncommunicable diseases. Further, the additional knowledge may be used to position the Country to be a regional hub for medical tourism as is envisioned in the Vision 2030 goals. This study will use the case of cancer to generate the required information.

Study Objective: To compare the patient related factors and perceptions on quality of care experienced associated with choice of cancer treatment centre, in Kenya or abroad.

Methods

A case control study on randomly sampled 254 cancer patients. The cases were patients who chose to receive treatment abroad while controls were those who received treatment at the Kenyatta National Hospital Cancer Treatment Centre (KNH) or Texas Cancer treatment Centre (TCC). A researcher administered questionnaires were populated with quantitative data elements focusing on sociodemographic, probable influencing factors and components of QOC. Data collection was conducted using face-to-face and phone interviews. Thereafter analysis was done using SPSS Software Version 21. Descriptive statistics were obtained using frequency distribution. Bivariate analysis was carried out on independent variables such as socio-demographic characteristics, co-morbidities, potentially influencing factors and perceptions on QOC to determine level of significance. Multiple logistic regression analysis was performed on the variables that demonstrated significance to determine strength of association. Statistical test was performed at 5% ($P < 0.05$.) level of significance.

Results

Our study randomly sampled 254 study subjects seeking treatment for various types of cancer in Kenya or abroad; 174 (68.5%) were treated in KNH and TCC, while 80 (31.5%) abroad. The latter respondents all received cancer care in India.

The mean age of the patients was 50 years, 65.7% were female. The commonest cancers were from the reproductive system (49.6%) and gastrointestinal tract (18.1%). Majority of patients received chemotherapy (87.0%), while others underwent radiotherapy (28%) and surgery (21.0%). The study

revealed that treatment was financed from the National Hospital Insurance Fund (NHIF) (57.3%) or out-of-pocket household finances (42.7%), with was no significant difference between the cases and controls.

Logistic regression models revealed that when controlling for other factors, the odds for seeking treatment abroad was 39 times higher for respondents with monthly incomes of higher than KES 25,000/= ($p < 0.0001$, 95% Confidence Interval (CI) 7.5-201.3). Further, every additional month from diagnosis was associated with increased likelihood of seeking treatment in India by 1.16 times; $p = 0.005$, 95% CI 1.046- 1.28. Other key significant factors that influenced treatment in India were advice from health care providers ($p < 0.0001$, OR 66.2, 95% CI 8-553), opinion of friends or relatives ($p = 0.008$, OR 42, 95% CI 7-249) and anticipation for better quality of care at chosen facility ($p = 0.009$, OR 22.5, 95% CI 2.2-230.6).

On the other hand independent predictors for not selecting India were inadequate cancer services at initial health facilities (OR=99%, 95% CI 88.4- 99.9%), and general perception that the country's reputation (OR=93.5%, 95% CI 51.6-99.1%).

Perception of quality of health care respondents received at their chosen treatment centre was generally rated as 'good' or 'very good' irrespective of their country of choice. When we adjusted for other components of QOC we found that respondents were more likely to prefer Indian health facilities with respect to the caring attitude of health workers, OR 8.3 times (95% CI 2.3-30.3). Conversely, with regard to timeliness of service and cleanliness of the health facilities respondents were less likely to have chosen India; OR 27.8% (95% CI 0.13-0.59) and 34.8% (95% CI 0.16-0.77) respectively.

Conclusion

The reason cancer patients seek treatment abroad are multifactorial. The commonest destination is India. Key factors include access to finances, inadequate treatment facilities, perception of quality of care and advice from friends, relatives and healthcare providers.

These influencing factors are similar to those demonstrated in other studies, however unlike other studies online information, opportunity for sightseeing and marketing were not found to influence our respondents. Interestingly although cost of treatment was an important factor for respondents treated in both countries, it was not a significant influencing factor for outward bound medical tourism. This too was unlike other studies based in developed countries.

The Kenyan health sector will need to address these influencing factors to reverse outward bound medical tourism and develop the country into a regional hub for medical tourism for patients suffering from cancer.

CHAPTER ONE: INTRODUCTION

1.1 Background Information

Medical tourism is an emerging and rapidly growing practice globally. The term refers to clients or patients traveling abroad (outward bound) or into the country to receive health care (inward bound). The reasons for the rapid growth of the industry are complex, multifactorial and augmented by globalization and reduced cost of travel. The growth of the industry has also been triggered by the demographic and epidemiological transition across the globe that has seen the rapid increase in incidence of non-communicable diseases. Much of the available documented information on medical tourism is generic and not disease or condition specific.

Globally it is estimated that the medical tourism's market turnover is USD 24-40 billion (KES 2.4-4.0 trillion) (Velissariou & Triantafyllos, 2014). In Kenya outward bound medical tourism seems to be growing faster than inward bound. It is estimated that 7,000-10,000 Kenyans seek health care abroad annually, translating to about KES 7 -10 billion annually. Inward bound medical tourism is thought to attract 3,000-5,000 foreigners from neighbouring countries, attracting revenue of approximately KES 3 billion (MOH, 2014). Medical tourism as an industry is largely targeting non communicable diseases such as cancer, renal conditions, and cosmetic surgery.

The rising burden of cancer as a noncommunicable disease in the country has further fueled the outward-bound medical tourism as those living with the disease account for the highest proportion of persons seeking for treatment in other countries. Cancer is the third highest killer after communicable and cardiovascular diseases. Further, the health sector is working to build its capacity to respond to this epidemiological shift.

Kenya development blueprint, the *Vision 2030* has identified medical tourism as a key flagship project for both economic and social reasons. In view of this the Ministry of Health has developed a Health Tourism Strategy to contribute to transforming Kenya into a regional hub for medical tourism and a middle-income country (Republic of Kenya October 2007).

The study sought to contribute to the body of knowledge by identifying patient related factors the influence outward bound travel for cancer treatment and document patients' perceptions on the quality of care they received at chosen health facilities. The generated findings will be compared with data derived from patients who chose to seek treatment within the country.

1.2 Problem Statement

In Kenya outward-bound, is more prevalent than in-ward bound medical tourism. One of the commonest conditions for which patients are seeking treatment abroad is cancer. The patient-

related influencing factors for seeking treatment within or outside the country are not well documented, and neither is their perception of the level of quality of care (QOC) given to them.

It was important to study and document these factors and experiences of QOC for several reasons. First, the increasing outward-bound medical tourism could be an indication that the health sector is not meeting the citizens healthcare needs at the required level of QOC, as articulated in line with the Constitution, which provides for the progressive provision of the highest standard of health care (Republic of Kenya, 2010). To tackle the increasing burden of cancer, efforts are being made to improve access to cancer diagnosis and treatment within the country, including; the establishment of cancer centres, procurement of diagnostic and radiotherapy machines and training on health workers. In view of improved infrastructure and increased access to cancer treatment in the country, it is not clear whether there could be additional patient-related factors that influence the choice of treatment centers, abroad or in-country.

Secondly, sending patients abroad for treatment is associated with significant loss of foreign exchange currently estimated at about KES 7 -10 billion annually (MOH 2014). These are funds that could be used to treat a larger number of people in-country than the few that are travelling. To compound the problem, there is no centralized data base of the travelling patients. Those able to cater for their treatment expenses plan for their travel and medical care on their own, while those who need financial assistance seek support from the National Health Insurance Fund (NHIF). As such, NHIF has funded a proportion of the outward-bound patients over the last several years. Between 2013 and 2014 there was a 209% increase of supported patients, while between 2014 and 2015 the Fund recorded a further 39% increase (NHIF 2016). The NHIF 2016 program report showed that over the previous 5 years about KES 1.02 billion (USD 9.8 million) has been used to fund insured patients' treatment abroad. More recent data showed another sharp increase. The 2019 annual data showed that KES 0.47 billion (USD 4.5 million) was used for cancer treatment abroad.

Thirdly, medical tourism can be associated with the introduction of multidrug resistant microorganisms by the returning patients as has been seen before. Thus, there is a need to safeguard the Country against possible epidemics by reducing outward-bound medical tourism.

1.3 Justification for the study

To enable Kenya to be a hub for regional medical tourism, there is need to understand the patient-related influencing factors. Some of the elements that have been shown to work in Southeast Asia are the establishment of enabling policies and strategies (Johnston, Crooks, & Ormond, 2015). Examples of these include health systems strengthening, provision of cost effective quality health care, creation of special medical tourism visas, reduced tax on imported medical equipment, requirements for international hospital accreditation and international marketing strategies (Chee Heng Leng, 2010; Meikeng Y, 2009; Ormond & Sulianti, 2017; Ormond ME, 2013; Turner, 2007).

To reverse the increasing outward-bound medical tourism there is need to understand some of the patient-related influencing factors, and perceptions of quality of care experienced by patients receiving treatment abroad and in the local setting.

In a bid to contribute to the body of knowledge, this study sought to determine the patient related factors for those who seek cancer treatment abroad and compare with those who choose treatment in the country. We also sought to determine the patient's perception of quality of care (QOC) experienced in their chosen treatment centre, as these influence repeated use and recommendations to other patients. In so doing we aim to provide evidence-based recommendations on outward-bound medical tourism that will contribute to developing strategies to:-

- Reverse the growing trend of outward-bound medical tourism, and loss of foreign exchange in relation to cancer;
- Establish a regionally competitive medical tourism packages that facilitate access to specialized quality cancer care; and
- Promote inward bound medical tourism with Kenya as the destination of choice, and earn the country foreign exchange.

The information can also contribute to transforming the country into a regional hub for medical tourism health in line with the Vision 2030 strategy (Republic of Kenya October 2007).

1.4 Research Question

What are the patient-related influencing factors and perceptions of quality-of-care associated with seeking cancer treatment abroad compared with those treated at the Kenyatta National Hospital (KNH) or Texas Cancer Centre (TCC) in Kenya?

1.5 Objectives of the Study

1.5.1 Broad Objective

To compare factors that influence patients' choice of cancer treatment centres, located outside Kenya or those in the country, specifically either at Kenyatta National Hospital's Cancer Treatment Centre or Texas Cancer Centre in Nairobi. Secondly to compare the cancer patient's perception of QOC experienced by two groups of patients; those who choose treatment abroad and those who chose cancer treatments in Nairobi.

1.5.2 Specific Objectives

1. To compare the patient-related factors associated with outward board medical tourism among cancer patients and those treated in Nairobi; and
2. To compare the perceptions on QOC experienced by cancer patients treated abroad or Kenya;

The key patient related factors studied included; socio-demographic characteristics, type of disease, co-morbidities, potential influencing factors for choice of treatment health facility (such as media, relatives, friends, cost effectiveness and waiting time), cost of care, funding agency and perception on the quality of care received.

The quality of care was based on the elements that are known to achieve customer expectations and satisfaction such as reliability, courtesy, timeliness, communication, assurance, security and tangibles (Parasuraman et al 1988, Punnakitikashem et al 2012).

1.6 Hypothesis

1.6.1 Null Hypothesis

H₀: There is no difference between patient-related factors and perceptions on QOC received in patients who sought cancer treatment abroad compared to those who opt for treatment in cancer care centres in Nairobi, Kenya.

1.6.2 Alternate Hypothesis

H₁: There is a difference between patient-related motivational factors and perceptions on QOC received among patients who sought cancer treatment abroad and those receive treatment in cancer care centres in Nairobi, Kenya.

CHAPTER TWO: LITERATURE REVIEW

Medical tourism is an emerging and rapidly growing practice globally, in both developing and developed countries. The term refers to clients or patients traveling abroad (outward-bound) or into the country (inward-bound) to receive health care. The reasons for the rapid growth of the industry are complex, multifactorial and enhanced by globalization. The growth of the industry has also been triggered by the demographic and epidemiological transition across the globe that has seen the rapid increase in non-communicable diseases.

Globally it is estimated that the medical tourism's market turnover is USD 24-40 billion (Velissariou, E & Triantafyllos, T. 2014). It has grown from approximately USD 15.5 billion in 2017 and is expected to generate about USD 28.0 billion by the end of 2024 (Zion Market Research 2018). In Kenya outward bound medical tourism seems to be growing faster than inward bound.

Medical tourism has a wide range of stakeholders, from purchasers (patients, public authorities and insurance companies) to those with commercial interests including brokers, health care providers, national governments, website hosts and media services (Lunt et al., 2011). The most frequented destinations are in Middle and South East Asia (India, Turkey, Thailand, Pakistan, Taiwan, Singapore, South Korea, Malaysia,), Central and Eastern Europe (Czech Republic, Hungary, Poland, Russia Romania, and Latvia) and Mexico in Americas (Badulescu and Badulescu 2014).

In Europe, majority of clients seek care across their borders to neighbouring countries such as the United Kingdom (UK), Spain and Hungary (Connell, 2013), those from Japan travel to Thailand (Hanefeld, Smith, Horsfall, & Lunt, 2014), while patients from Kenya travel to countries such as India, South Africa, UK and United States of America (NHIF 2016 Unpublished report).

Despite the growth of the industry, there is still a dearth of information concerning the factors that influence patients to seek treatment abroad, costs and effects on the health system of countries.

2.1 Health Conditions of Medical Tourists

Majority of medical tourists seek treatment for non-communicable diseases (NCDs) or conditions (Ruggeri, Záliš, et al., 2015). This is probably due to the increasing disease burden. Globally it was estimated that 36 million people died in 2008 as a result of NCDs. Of these a majority suffered from neoplasms, diabetes, cardiovascular and respiratory conditions. If preventive action is not undertaken, the situation is envisioned to worsen by 2030, with 55 million people dying from NCDs (World Health Organization, 2013). The key risk factors attributed to these diseases include; poor dietary habits, inadequate physical exercise, obesity, alcohol abuse and tobacco consumption.

Like other developing countries, Kenya has a rising burden of NCD related morbidity and mortality. In 2012 the Ministry of Health's health information system showed that NCDs accounted for more than 50% of total hospital admissions and over 55% hospital deaths (Health, 2015). Unfortunately, the health sector's infrastructure has not developed at the same rate as the increasing NCD disease burden. Data from the Ministry of Health (MOH) showed that in 2016, 77.1% of 271 patients who travelled abroad for treatment were suffering from three key NCDs, namely; cancer (33.6%), renal (31.0%) and skeletal conditions (12.5%) (MOH, unpublished report 2016).

Cancer is now ranked as the third highest killer disease in Kenya. It is estimated that every year there are about 47,887 new cases of cancer and over 32,987 people die from the disease annually (Globocan 2018). Unfortunately, majority of cancer patients (80%) are diagnosed in the late stages (Stage 3 or 4), when not much can be done. The five top cancers in the country are breast (12.5%), cervical cancer (11%), esophagus (9.1%) prostate (6%), and colorectal (4.8%). Sixty percent of persons with cancer in Kenya are women, thereby depicting a higher incidence of cancer than in men (Globocan 2018).

The annual program report of 2016 from the National Health Insurance Fund (NHIF), documents that 472 patients' treatments were funded in health facilities abroad. Of these 90% sought treatment for various NCDs, namely cancers (33.7%), central nervous system (21.6%), musculoskeletal (12%), cardiovascular (11.7%) and renal (11%) diseases (NHIF 2016). The cancer patients supported by NHIF in 2016 had been diagnosed with breast (19.4%), leukemia (9.2%), or prostate (9.2%).

2.2 Patient Related Factors Associated with Medical Tourism

The reasons patients give for seeking healthcare across borders are varied and complex. The combination of factors go beyond the cost element to include availability of services, distance, family pressure and advertising (Hanefeld et al., 2014). Secondly, reasons vary from individual to individual and region to region. Crooks et al categorize the motivation for travel into 3, namely; procedure based; travel-based and cost-based (Crooks, Kingsbury, Snyder, & Johnston, 2010).

Procedure and wait-time based motivation: Procedure based motivation is when the desired services are not available in country of origin such as stem-cell transplant, bariatric surgery, and positron emission tomography (PET) scan. The second most frequently cited 'push factor' was the long waiting period patients have to endure to receive treatment or get procedures done (Crooks et al., 2010).

In the western world, patients travel abroad for dental care, fertility and specialized surgeries such as cosmetic and bariatric surgery (J. Hanefeld, Lunt, Smith, & Horsfall, 2015). Anecdotal reports from travelling patients from Kenya in 2015 also cite non-availability of specialized services and

long waiting times. Unpublished data from MOH in 2015 showed that cancer patients in the public health sector requiring radiotherapy had to wait one to two years for their appointments. As a result, Kenyans began seeking health care for procedures such as radiotherapy, PET Scans and kidney transplant from other countries such as India. In the recent past, the waiting time has reduced due to increased investment in equipment such as linear accelerator radiotherapy machines. Public awareness on the increased availability of specialized services may need to be built to reduce outward bound medical tourism.

Travel- based: Travel-based motivation occurs when there is a desire to tour other countries and combine it health care. In such instances, medical tourism brokers present attractive packages which include regular tourism with affordable accommodation and health care packages. The brokers are motivated by the significant earnings they obtain from their clients (Badulescu & Badulescu, 2014).

Cost- based: High cost of health care in home countries is one of the most important reasons for medical tourism (Crooks et al., 2010), especially in countries where out-of-pocket finances is the key means of financing healthcare. This is coupled with the lack of medical insurance or underinsurance, a situation that is common in both developing countries and developed countries (Ruggeri, Ruggeri, et al., 2015). Secondly affordability of health care in distant countries makes travel attractive. This is increasingly becoming an important reason for patient engagement in medical tourism. Low cost of care is further augmented by aggressive advertising and marketing by the potential host countries. India is a good example of a country that markets herself as providing both low-cost, and high-quality health care (Sultana, Haque, Momen, & Yasmin, 2014). This combination has also proved very attractive to patients from both developed and developing countries.

Other reasons: Other key reasons for medical tourism include search for high quality of care (Phua K-L (2010), peer pressure, word of mouth experiences from returning patients, hospital accreditation, language, climate, expected long-term outcomes of care, attitude of host country citizenry, religious accessibility, food and information from the various media (Crooks et al. 2010, Alsharif 2010). Some hospital establishments in destination countries run free medical camps in developing countries to increase awareness on availability of specialized services in a bid to attract customers. In many instances referrals to these countries are also initiated at these camps. Cost of travel has also reduced globally, making health care abroad accessible and attractive.

2.3 Implications of Medical Tourism on the Health Sector

2.3.1 Implications on the Country of Origin

The implications of medical tourism on the home country are varied and are related to complications and cost of treatment. For instance, there have been reports on acquisition of

infections from destination countries, causing epidemics in home countries (Harling et al., 2007). Chan et al. reported the growing spread of severe multidrug resistant *Escherichia Coli* in patients in 13 countries linked to treatment provided in India or Pakistan (Chan HL et al., 2011). These isolates have also been reported in Kenya along with other countries including; Singapore, Turkey, USA, Israel, Japan, Taiwan, France Australia, and China (CDC 2010; Struelens, Monnet, Magiorakos, Santos, & Giesecke, 2010; Yong et al., 2009).

A second important implication is the loss of foreign exchange. Outward bound medical tourism in Kenya is increasing at an alarming rate, resulting in significant loss in foreign exchange. The NHIF 2016 report shows that over the previous 5 years about KES 1.02 billion (USD 9.8 million) has been used to fund insured patients' treatment abroad. On average, each patient requires KES 1.5 million (USD 14,517) per treatment. This cost is also increasing. The NHIF data shows that the average cost of care per patient increased from 2012 to 2016 by 42% (NHIF 2016 report-program data) and 93.3% from 2016-2019 (NHIF 2019 unpublished report). The 2019 data shows the average patient cost was KES 2.9 million (USD 29,459). It should be noted that these costs do not include patients who pay out of pocket or those funded by their private insurance companies.

2.3.2 Implications on the Host Country

The growth of medical tourism is accompanied by both challenges and opportunities for national governments and international institutions. The increasing number of medical tourists in host countries has largely been as result of deliberate bilateral agreements, which has led to significant increase in foreign exchange. Medical tourism in India has an annual growth rate of 30% and is now among the fastest growing sector in the country. It accounts for 25% of the country's total revenue (Zion Market Research 2018). Sultana et al had reported that the industry was expected to earn the country USD 2 billion by 2015, by catering for 3.2 million foreign patients (Sultana, Haque, Momen, & Yasmin, 2014). However these predictions have been surpassed to record increased earnings of between US 50 and 69 billion dollars (Zion Market Research 2018).

Medical tourism recipient countries have made concerted efforts to build and strengthen their health care systems to manage the increasing influx of patients seeking specialized healthcare. Al-Sharif and Lu have raised concerns that some of these countries, namely India, Jordan, China and UAE provide health care to incoming patients and yet fail to adequately provide for their own populace. They strongly suggest that in the short term, healthcare for the poor in these societies will worsen with increasing medical tourism, (Alsharif, Labonté, & Zuxun Lu, 2010) and distort the allocation of healthcare resources in favour of medical tourism (Phua 2010). If not managed well, medical tourism can compromise access to essential health services for vulnerable populations in the host countries and thereby raise ethical and policy challenges.

In conclusion outward bound medical tourism is growing rapidly in Kenya much like in other developing countries, although it has not been well documented or scientifically researched. There

is also a knowledge gap that this study seeks to begin to fill and pave way for additional research to inform policy and health sector strengthening. The information obtained will from this study will contribute to positioning Kenya to meet her health needs and be regarded as a regional hub for medical tourism. More specifically, the key knowledge gap we seek to fill is documenting the patient-related factors that influence medical tourism among Kenyans with cancer and their perceptions of the quality of care they received at their treatment centres of choice.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Study Design

This is a case control study that explored the patient related factors that influence choice of Cancer Treatment Centre, abroad or in-country and study respondents' perceptions of QOC received. The case group comprise patients who sought treatment abroad, while the control group sought treatment in two facilities in Kenya.

3.2 Target and Study populations

The target and study populations were patients who were diagnosed with cancer and received first cycle/round of treatment abroad, Kenyatta National Hospital or Texas Cancer Centre.

1. **The study populations** involved in this study were: -
 - a. **Case Group:** Patients with cancer who obtained travel approval from MOH for cancer treatment abroad and returned back into the country after the first cycle/round of therapy;
 - b. **Control group:** Persons with cancer who had their first cycle/round of treatment within the country at either KNH or Texas Cancer Centre.

2. **Inclusion Criteria**
 - All patients diagnosed with any form of cancer who obtained travel approval from the MOH and returned back into the country after the first cycle/round of therapy;
 - All patients diagnosed with any form of cancer who have received their first cycle/round treatment at KNH or TCC; and
 - Adult patients and parents/guardians of minors (children below 18 years of age) with cancer who willingly provide written consent.

3. **Exclusion Criteria**
 - Patients who had received more than one cycle/round of treatment
 - Patients who had not returned into Kenya.
 - Patients who declined to consent.

3.2 Study Sites

The study was conducted at the Ministry of Health (MOH), Afya House in Nairobi Kenya, Cancer Treatment Centre at Kenyatta National Hospital (KNH) and Texas Cancer Centre (TCC) Mbagathi Road.

3.2.1 Ministry of Health

The Ministry of Health is mandated to focus on health policy development, regulation, tertiary referral health facilities and provision of technical assistance to the counties in line with Schedule 4 of the Constitution 2010 (Republic of Kenya 2010). The Ministry's vision is "*A healthy productive and globally competitive Nation*", while the mission is to '*To build a progressive response and sustainable health care system for accelerated attainment of the highest standard of health to all Kenyans*' (Ministry of Health, 2011).

The MOH's Directorate of Standards, Quality Assurance and Regulation (DSQAR), which is tasked to set standards and regulations, works closely with the Directorate of Health Care Services to regulate medical tourism. This is done to safe guard patients and the Country from unnecessary expenditure on health services. Majority of patients who seek travel approval do so to obtain financial support from NHIF. This support is aligned to the MOH policies and the respective medical schemes offered by the Fund.

Over the last couple of years, data on patients requesting approval to seek treatment abroad was not systematically collected. Available data shows that: -

- In 2015, 322 persons requested for, and were granted travel approval. Of these, the commonest reported conditions were renal disease (40.4%), cancer (21%), and skeletal conditions (17.4%).
- In 2016, 271 persons requested and were granted travel approval. Of these, the commonest reported conditions were cancer (33.6%), renal disease (31.0%), and skeletal conditions (12.5%). The key cancers reported were breast (16.3%), leukemia (12.5%), and prostate (11.3%).
- By end of July 2017, 164 persons had requested and were granted travel approval. Of these the commonest reported conditions were cancer (41.1%), skeletal (14.7%) and renal (9.8%) diseases. The key cancers reported were breast (18.6%), brain (10.2%), and prostate (8.5%).

3.2.2 Kenyatta National Hospital Cancer Treatment Centre

The Kenyatta National Hospital (KNH) is the oldest and largest hospital in Kenya. It also serves as the largest tertiary referral health facility in Eastern and Central Africa. The current vision of the hospital is to be '*A world class patient centered specialized care hospital*', while the mission statement is '*To optimize patient experience through innovative healthcare; facilitate training and research; and participate in national health policy*'.

Cancer treatment began in the 1960s with radiotherapy, largely focusing on skin cancers. Later the hospital began to offer chemotherapy. The Cancer Treatment Centre was established in the early

2000s to offer advanced comprehensive treatment for cancer, including diagnosis, chemotherapy and radiotherapy. Patients who have procured medical insurance from NHIF can also benefit from the Fund's financial rebates.

In 2016, the Centre attended to 2,144 new cancer patients. The Centre attends to 15 to 20 newly diagnosed patients and 60-100 outpatient chemotherapy patients daily. The key types of cancers managed at this facility are cervix (26.7%), breast (19.6%), esophagus (11.3%), and prostate (6.1%).

3.2.3 Texas Cancer Centre

The Texas Cancer Centre was opened in 2010 in response to the increasing cancer burden in Kenya. It is situated off Mbagathi Road, in Nairobi. The Centre is manned by a multidisciplinary team that is able to offer holistic treatment and care to cancer patients. The services include laboratory and diagnostic procedures, cancer screening, prevention, treatment services and palliative care (Texas Centre website).

In 2016, the Centre attended to 3,434 new cancer patients. The key types of cancers managed at this facility were breast (19.5%), cervix (13.0%), esophagus (5.1 %), and prostate (6.1%).

The patients are referred to the Centre from various health facilities in Nairobi and surrounding counties such as Kiambu and Nyeri. Majority of the patients are accompanied by relatives and they present to the Centre with a histological diagnosis of cancer.

3.3 Sample size

We determined the least sample size using the formula (Fleiss JL, Levin B., Myunghee CP 2003):

$$n = \left(\frac{r+1}{r} \right) \frac{(\bar{p})(1-\bar{p})(Z_{\beta} + Z_{\alpha/2})^2}{(p_1 - p_2)^2}$$

Where;

- p_1 = percentage score in perception of availability of adequate services in local health care systems among patients seeking care locally (here 65%)
- p_2 = percentage score in perception of availability of adequate services in local health care systems among patients seeking care outside Kenya (here 40%)
- r = ratio of controls to cases (here equal ratio of cases to controls $r=1$)
- Z_{β} = Represents the desired power (typically .84 for 80% power)
- Z_{α} = Represents the desired level of statistical significance (typically 1.96 for 95% confidence).
- n = Sample size in the case group ($n=63$. 63 patients in each group [63 KNH Cancer Treatment Centre, 63 Texas Cancer Centre, 63 Cancer patients travelling abroad for treatment])
- To cater for a possible nonresponse of 20% we applied an inflation factor that was calculated using the formula $N_{adj}=N/(1-x)$ giving us sample size of 72 patients in each group;

- 72 Cancer patients travelling abroad for treatment;
- 72 TCC; and
- 72 KNH patients.

3.4 Data collection tools and procedures

3.4.1 Data collection tools

A structured questionnaire tool (Appendix 2.2) was administered by research assistants to patients who met the study objectives. The data elements included in the tool were as follows: -

- Socio-demographic characteristics: age, gender, marital status, education level, occupation, monthly income;
- Disease Profile and medical treatment: type of cancer, comorbidities, form of cancer treatment received, medical procedure carried out, accompaniment by care giver;
- Treatment financing: funding agency, costs incurred;
- Factors influencing choice of health facility and country, such as reputation of facility and country, health providers, family/relatives, media, availability of services, wait time to treatment;
- Perception of quality of care received at chosen facility using a rating scale; and
- Chosen treatment centre and host country: Health Facility, Country

3.4.2 Data collection procedures

a. Ministry of Health Site

A large number of the patients who seek travel approval from the MOH, came from localities outside of Nairobi. In light of this we used the following methods to obtain data; a) face-to-face, b) telephone interviews, c) electronic methods (using email and a web-based data collection tool), or d) personal health provider coordinated. The purpose of the latter method was to provide emotional support to the study participant and stop the interview should they deem it necessary. The choice of data collection method was dependent on the preference of the study participant.

To randomly sample the study participants, a research assistant initially went through all the recently submitted application forms and records of patients who received approval for treatment abroad and selected out those with a diagnosis of cancer. The application forms were then used to identify potentially eligible participants sequentially beginning with the most recently travelled. A screening tool was applied to each of the forms to determine eligibility. The forms of the potentially eligible cases were thereafter serialized to facilitate random selection, using a random number program, for inclusion into the study.

All eligible applicants who met the inclusion criteria were telephoned by the research assistant and introduced to the study. This involved giving a short description of the study objectives while seeking to interest them to be participants and to consent. To do this the research assistant outlined the objectives of the study, benefits of participation, information on consent, and gave assurance on ethical principles, such as anonymity and confidentiality. Those who agreed to participate were informed of the 4 methods of data collection and requested to choose their most preferred method. Irrespective of the mode of data collection, it was reiterated that the study participants could choose not to respond to a question if they felt uncomfortable or opt out of the study at any time.

Procedures for the various modes of data collections that were used are as follows: -

- a. *Face-to-face interviews:* Those who chose face-to-face interviews were requested to meet a research assistant at the MOH (4th floor room 404) or at the UNITID (depending on their preference). The meeting was scheduled at a mutually agreeable time and date. On arrival for the interview a written informed consent was obtained. A structured questionnaire with list of possible answers was read out to the interviewee. These study participants were given travel cost reimbursement of KES 500 after the interview.
- b. *Telephone conducted interviews:* Study participants who chose to be interviewed over the telephone were requested to provide an appropriate time for the interview. The research assistant diarized the selected time and date. At the appointed time the research assistant initially gave an overview of the study again and requested for verbal consent. Once the consent was given by the study participant, it was documented on the questionnaire. Thereafter the interview was conducted using the structured questionnaire and answers were recorded.

We did not have any study subjects who selected the electronic or personal health provider coordinated methods.

In the case of children, guardians or their parents played the part of the study participant, and consented (appendix 1.3) in place of the minor as they are the primary decision makers.

The filled questionnaires were proofread manually for possible obvious errors and to ensure all fields are filled prior to releasing study participant to leave. The forms were also checked for any inconsistent answer(s), and efforts to correct them were made.

The study participants were given another opportunity to respond to the question in the event there were incomplete forms. Although efforts were made to ensure all fields are filled, none of the study participants were forced to answer any of the questions.

List of procedures for quantitative data collection;

- a) Perusal of all medical tourism approvals, followed by selection and serializing of Cancer patients' forms;
- b) Random sampling of cancer patients using the forms;
- c) Research assistant called and invited all the randomly sampled eligible study participants and provided options enumerated above for data collection;
- d) Obtained informed consent or assent for study participation from eligible applicants;
- e) Completion and submission of structured questionnaire;
- f) Scanning of completed questionnaires by principal researcher for completeness and consistency; and
- g) Secure storage of corrected forms.

b. Kenyatta National Hospital Cancer Centre and Texas Cancer Centre Sites

During the data collection period, recent patient files were used to select those who met the inclusion criteria, beginning with the most recently diagnosed patients. The files were evaluated for eligibility using the screening tool (appendix 2.1). Those that met the eligibility criteria underwent random selection using a random number generating program. The selected eligible study subjects were called, informed about the study and requested to participate. Those who verbally agreed, had appointments made for consenting and participation in the study. Efforts were made to synchronize interview appointments with their next scheduled clinic appointments. The interviews were conducted as the participants awaited their consultation with the health practitioners.

Eligible study subjects were introduced to the objectives and requested to participate in the study. Those that agreed to participate were briefed on the procedures, given assurance on ethical principles, such as anonymity and confidentiality. After which they were requested to give a written consent (appendix 1.1). Being the primary decision makers, guardians or parents of minors were given opportunity to provide written consent using form in appendix 1.3. All participants were assured that their participation would not unduly influence the quality of care they would receive. The eligible study subjects were then subjected to the structured questionnaire that will capture data designed to meet the objectives of the study. The interviews took 15-30 minutes on average.

Upon completion of the questionnaire, the research assistant or principal investigator quickly scanned them to ensure all fields are filled prior to releasing study participant. Where the form contained unfilled fields, the study participant was given another opportunity to respond to the question. No study participant was forced to respond to any part of the form. At the end of the interview the study subject were thanked for the information received and for their participation in the study.

3.5 Data Management

3.5.1 Data entry and cleaning

Data was collected using structured questionnaires and entered into the Statistical Package for the Social Sciences (SPSS) software version 21 and stored in a password protected computer. Upon completion of data entry, data cleaning was done manually by the principal investigator. Comparison the hard copy completed questionnaires with the entered data was done and corrections were made appropriately. In case of inappropriate answers, the data entry clerk was called for clarification.

Using SPSS, data cleaning was carried out for consistency and to ensure that the missing values were addressed. All efforts were made to fill the missing values accurately. Cleaning also involved looking for out-of-range values on categorical and continuous data and making appropriate correction.

Frequency statistics were used to identify inconsistencies for correction, including outliers. Inconsistencies required the principal investigator to go back to the questionnaire or call the data entry clerks for clarification.

3.5.2 Data Analysis

Descriptive analysis was done using frequencies and cross tabulation to determine level of significance on the all variables; socio-demographic characteristics, type of cancer, co-morbidities, form of cancer treatment (chemotherapy, radiotherapy, and surgery), treatment centre (abroad, KNH or TCC), factors likely to influence choice of treatment centre and perceptions on QOC in relation to the chosen health care systems. Measures of central tendency and dispersion (e.g. mean, median, mode, standard deviation (SD) and inter-quartile ranges) were determined for continuous variables such as age, monthly income and cost of first cycle/round of treatment locally or abroad.

Bivariate analysis was performed to identify significant differences for each possible influencing factor on both cases and controls. Thereafter logistic regression models were used to identify independent predictors for all factors that showed significant association with choice of treatment site or country. Odds ratios and corresponding 95% confidence intervals were documented for the influencing factors in choice of cancer treatment centre to show strength of association. Examples of the independent predictors explored included socio-demographic characteristics, monthly income, type of cancer, advice from friends/relatives, media, and anticipated period to initiation of therapy, income and other co-morbidities. The Fisher's exact test was used when the reported outcome had five or less patients to estimate p-values. Statistical tests were performed at 5% ($P < 0.05$) level of significance.

3.5.3 Data Storage

The principal investigator and research assistant sought to maintain, and store completed, accurate, study records in a secure manner, throughout the study. The hard copy data forms were stored in a lockable cabinet in the Principal Investigator's office after collection, entry and analysis. Electronic data were kept in password protected computers, accessible to the principal investigator and statistician.

The investigator will retain all study records for at least five years after completion of the study. Study records include all consent forms, and questionnaires. All the data, will stored in a locked cabinet in a secure room. The key to this room will be kept by the Principal Investigator. Destruction of the study records will be carried out in December 2022.

3.6 Quality assurance procedures

The principal investigator oversaw the entire process of data management. For the purposes of obtaining accurate and valid data, the standardized instrument was validated by pilot testing it prior actual data collection. Data from this pilot was excluded from the study.

Research assistants were trained prior data collection. The Principal researcher oversaw the data collection process and scanned 10 randomly selected records on a daily basis to verify completeness and accuracy of data collected.

3.7 Ethical consideration

Study subjects were subjected to a few ethical issues in the process of study execution. Ethical issues that could have been encountered during the execution of this study were mitigated against in the following ways: -

- *Need to uphold the rights of study subjects.* Questionnaires did not contain personal or intimate questions that are likely to cause emotional stress or embarrassment. Secondly, to ensure that a study participant's rights are upheld, the researcher introduced the study to the eligible participant. The researcher discussed the right to withdraw from the study at any time the study participant felt uncomfortable. Additionally, they were allowed skip any question that made them feel uneasy. At the end of this initial discussion, consenting subjects were requested to provide a written and signed consent.
- *Maintenance of confidentiality.* To ensure confidentiality is maintained and protected all data was well secured. The filled forms were kept in a lockable cabinet in the Principal Investigators office throughout the data management process and after analysis. Electronic data was stored in password protected computers, accessible to the principal investigator and statistician only. Finally filled forms and electronic data was scheduled for destruction in December 2022 by the Principal Investigator.

- *Integrity of the data.* All the research assistants were trained by the principal investigator prior to data collection. Data quality checks were also carried out by the Principal Investigator on a daily basis.
- *Personal identifiers* were used to avoid linking data and study participants and thereby maintain confidentiality.

3.8 Consent or Assent explanation

The relevant consent/assent forms include the following information:

- Title
- Researchers' contact information
- Introduction
- Purpose of the study
- Procedures
- Confidentiality
- Risks, stress, or discomfort
- Benefits of being in the study
 - Funding
 - KNH/UON ERC contact information
 - Study participant statement
 - Study participant signature page

3.9 Institutional Review Board

This is a research proposal that involved data collection and management at the three sites (MOH, KNH and TCC) as part of a postgraduate diploma in research methodology. The study was reviewed and approved by the Kenyatta National Hospital/University of Nairobi (KNH/UON) Ethics and Research Committee (ERC). The study did not recruit subjects prior to approval from the KNH/UON ERC.

3.10 Risks to subjects

Questionnaires: Questionnaires did not contain personal or intimate questions that are likely to cause emotional stress or embarrassment. The questionnaires were designed in such a way as to minimize questions implying blame or judgment. Participants were informed and reminded periodically that they could refuse to answer any question.

Study research assistants attended training sessions conducted by the Principal investigator and received on-going support supervision in areas related to ethical conduct, confidentiality protection. A key objective of the training the assistants was to clearly explain the purpose of obtaining informed consent, and inform respondents about their rights and benefits without coercion. We also sought to ensure that our interviewers informed the potential respondents about the confidentiality measures put in place to protect their privacy.

All data was de-identified and maintained in a locked environment.

3.11 Potential benefits of the proposed research to the study participants

The study participants did not directly benefit from their participation. However, their contributions were appreciated and will be used to inform policy development and strengthening the Country's health systems to provide quality health services to cancer patients locally and from other countries.

3.12 Compensation

Study participants who specifically travelled to MOH to participate in the study received travel cost reimbursement of KES 500/-.

3.13 Alternatives to participation

There were no noted alternative studies to participating in this study.

3.14 Study dissemination plan

This study will initially be disseminated to policy makers at the Ministry of Health, KNH Cancer Treatment Centre and Texas Cancer Centre. Thereafter the investigators will seek to publish the results in a peer reviewed journal locally and internationally. Opportunities to present the findings in scientific conferences and workshops will also be sought.

3.15 Study Limitations and they were minimized

1. The study's key limitation was recall bias. Returning patients tend to fail to give specific information concerning their travel and experiences due to failure to recall details. To minimize this, we sought to include those who received treatment within the previous six to eight months.
2. Effective communication that enables accurate filling of self-administered questionnaire may be challenging. To minimize this, research tools were simplified and researcher assisted.
3. Potential research subjects who were suspicious about the authenticity of the research were given contacts of the Principal Research and KNH-UoN ERC for them to counter check legitimacy.
4. Interviewers were not able to see the body language of the study subjects participating on internet or over the telephone. This is more important in qualitative surveys. Our survey has standard quantitative questions that do not require documentation of perceived feelings or body language.

CHAPTER FOUR: RESULTS

A total of 254 patients were enrolled into the study between March and November 2018. Of these, 174 (68.5%) were recruited from the Kenyatta National Hospital (KNH) and Texas Cancer Centre (TCC) and 80 (31.5%) respondents from Ministry of Health (MOH), Afya House. The latter study subjects had all returned from cancer treatment abroad, specifically in India.

4.1 Descriptive Results

4.1.1 Socio-demographic data

Description and summary of descriptive statistics of selected socioeconomic characteristics are presented in Table 1.

Our study showed that both the mean and medial age for the respondents was 50 years (SD 15.84). Of these, 159 (63.4%) were over 45 years of age (see table 1 and figure 1). Nearly two-thirds of respondents, 167 (65.7%), were female, and at least 125, (49.2%) had secondary school level education. See Table 1.

Table 1: Socio-demographic characteristics of the sampled study subjects

Variables	Categories	Number	Percent (%)
Gender	Male	87	34.25
	Female	167	65.7
Age groups (years)	<14	5	2.0
	15-29	24	9.6
	30-44	63	25.1
	45-59	88	35.1
	60-74	57	22.7
	>75	14	5.6
Marital Status	Never married	26	10.3
	Currently married	197	77.9
	Separated/ Divorced	8	3.2
	Widowed	15	5.9
	Declined to answer	7	2.8
Residence	Urban area	97	38.3
	Rural area	156	61.7
Education level	No formal schooling	15	5.9
	Primary school	80	31.5
	Secondary/ High School	83	32.7
	College/ University	42	16.5

Variables	Categories	Number	Percent (%)
Occupation	Government employee	28	11.0
	Non-governmental (NGO) organization	29	11.4
	Unemployed	82	32.3
	Self-employed	77	30.3
	Farmer	31	12.2

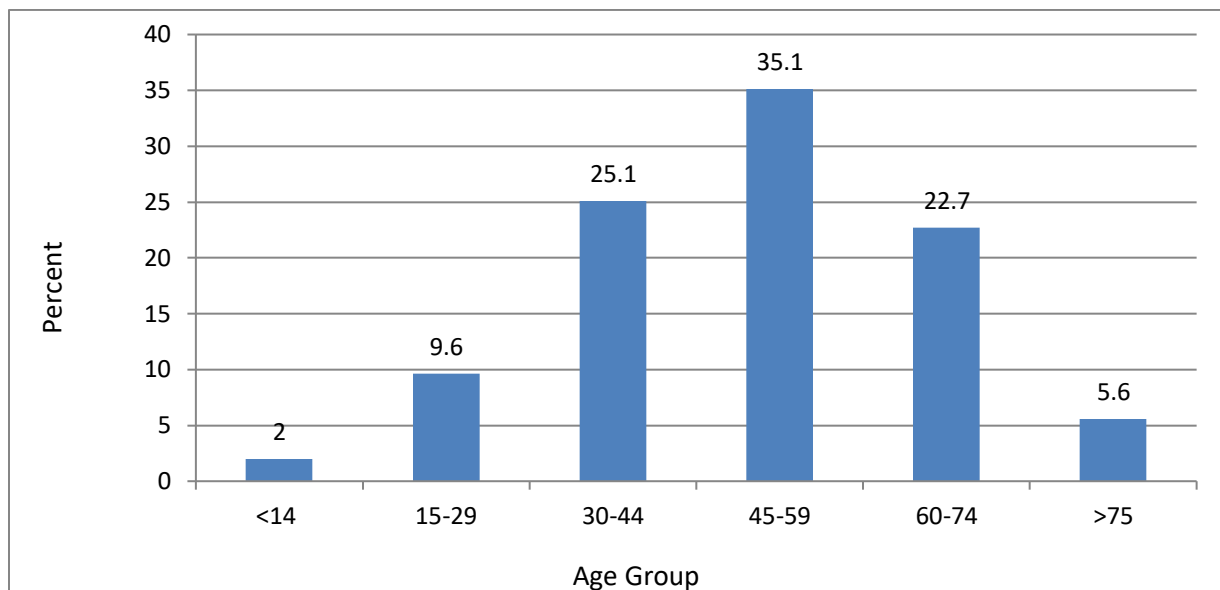


Figure 1: Age Groups of the Study Respondents

Nearly two-thirds of the respondents, 165 (65%), were employed. Of these, 80 (31.5%) respondents reported receiving a median salary of KES 39,000.00 (minimum KES 700, maximum KES 400,000) per month. The length of time (duration) the study subjects knew they suffered from cancer ranged from 1 to 188 months, with a median duration of 13 months (IQR 4-17 months). See Table 2.

Table 2: Duration of time since diagnosis and monthly Income

	Number	Mean	Median	Standard Deviation	Minimum	Maximum
Monthly Income in KES	80	50,387.50	39,000	62,132.50	700.00	400,000.00
Duration since diagnosis in months	251	13.67	8	18.746	1	188

4.1.2 Disease Profile and Cancer Treatment of the Study Subjects

The study respondents were diagnosed with various types of cancers. One hundred and twenty-six (49.6%) respondents were diagnosed with cancers of the reproductive organs, while 46 (18.1%) had cancers of the gastrointestinal tract and 10 (11.8%) had blood related malignancies (Figure 2).

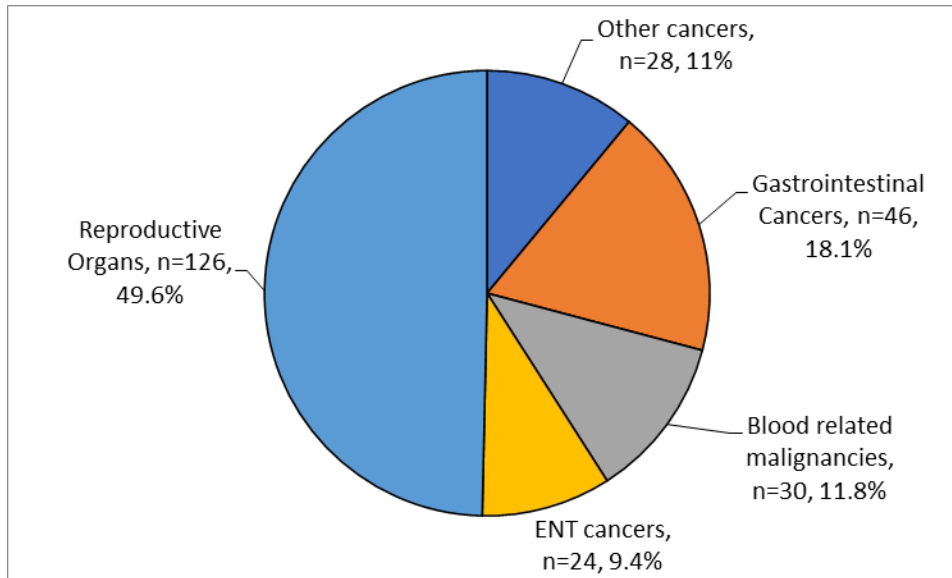


Figure 2: Types of Cancers in Categories

The specific cancers respondents had were breast 59 (23.2%), cervix 50 (19.7%), oesophagus 16 (6.3%), prostate 10 (3.9%) and other types of cancers 119 (46.9%). See Figure 3.

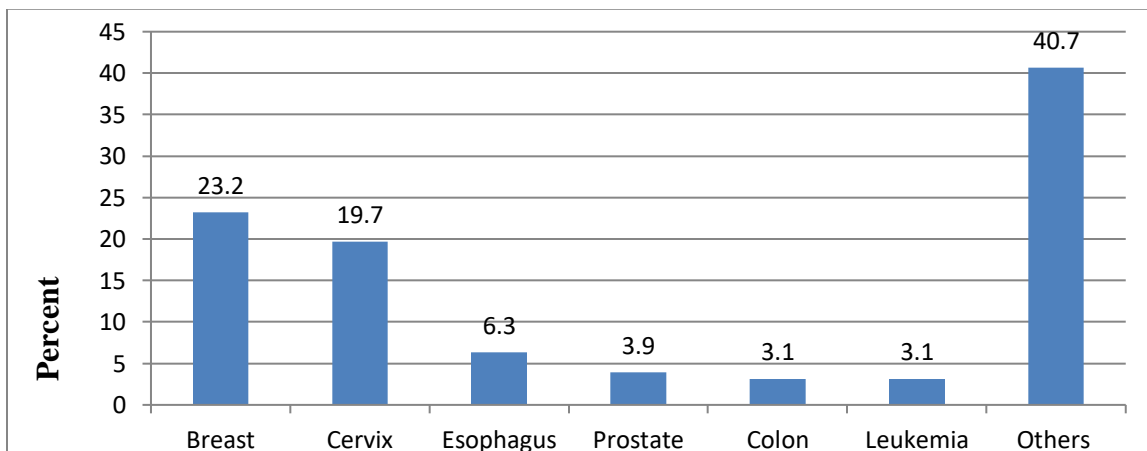


Figure 3: Showing Proportion of Study Participants by Types of Cancers

The majority of study respondents, 234 (92.1%), were referred to cancer treatment centres by government health facilities and private health facilities. Logistical support for cancer treatment was done by friends and relatives, 202 (79.8%), respondents themselves, 202 (79.8%), local health providers, 150 (59.1%), chosen treatment centres, 112 (44.3%) and local agents, 31 (12.2%). Only 14 (18%) respondents who travelled abroad were assisted by overseas travel agents, (See Table 4).

The majority of respondents, 245 (96.5%), were accompanied by a caregiver to their choice cancer treatment centre. Of these, 239 (96%) were spouses or family members. The costs related to the caregivers was borne by the study respondents, 123 (49%), care givers themselves, 77 (30.6%), friends/relatives, 23 (9.1%) or the NHIF, 22 (8.3%). See Table 3 below.

Table 3: Data on Healthcare Referral & Care Givers

Variables	Category	Number	Percent
Referring Health facility	Government hospital	143	56.3
	Private hospital	91	35.8
	Private clinic	13	5.1
	Other	5	2.0
	Self	2	.8
Supporting Entity arranging for cancer treatment	Local healthcare provider	150	59.1
	Directly with the facility of choice	112	44.3
	Self	202	79.8
	Friends and relatives	202	79.8
	Local medical tourism agents	31	12.2
	Overseas based medical tourism agent for those who traveled abroad (n=80)	14	17.9
Presence of Caregivers	Present during Treatment	245	96.5
Relationship with care giver	Spouse	94	37.8
	Friend	2	.8
	Family member	145	58.2
	NA	8	3.2
	Cost of Care giver	Study Respondent	123
	Care giver themselves	77	30.6
	NHIF	22	8.7
	Friends/Relatives	23	9.1
	Employer	1	0.4

4.1.3 Modes of Cancer Management Provided to Study Subjects

Most patients were treated using chemotherapy, 221 (87.0%), radiotherapy, 72 (28%), surgery 53 (21.0%), 10 (4%) bone marrow transplantation and 2 (1%) received brachytherapy (Figure 4).

One hundred and two (60%) participants had various laboratory tests, while 70 (28%) underwent a positron emission tomography (PET) scanning, and 40 (16%) respondents had other radiological tests performed on them (Figure 4).

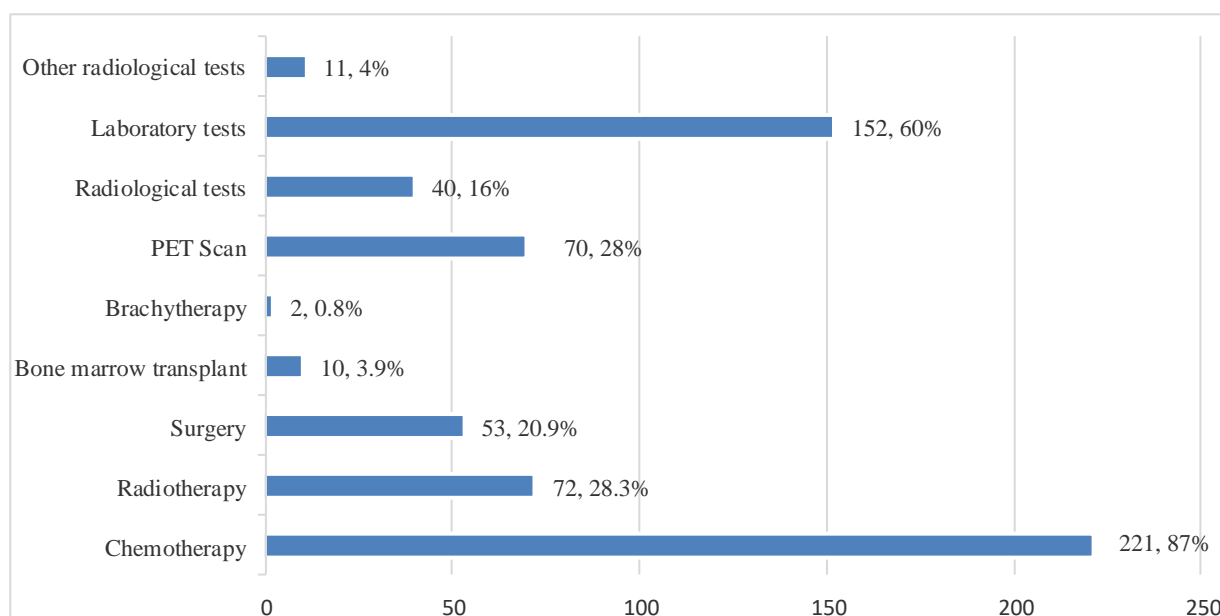


Figure 4: Types of Cancer Treatment Provided to Study Participants

4.1.4 Diagnosed Comorbidities

A quarter of the study respondents, 64 (25.2%), suffered from other chronic diseases. Thirty-eight (15%) respondents had hypertension, 13 (20%) diabetes, 7(11%) HIV, 2 (3.1%) heart disease among other chronic diseases (n=4, 6.3%). See Figure 5.

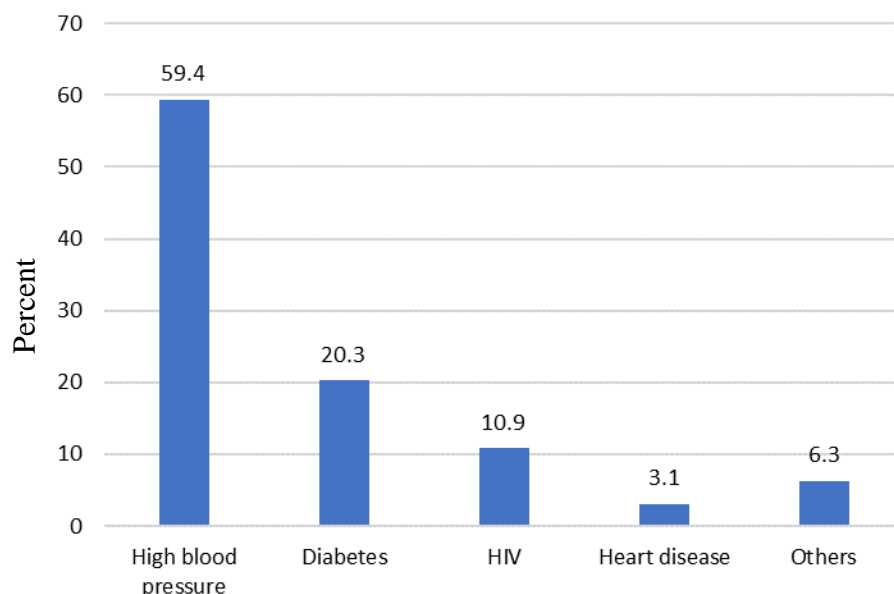


Figure 5: Co-morbidities among Study Respondents

4.1.5 Reasons for Choice of Health Facility

Our study sought to determine the patient related factors that influenced the choice of cancer treatment centre.

The majority of respondents, 205 (80.7%), selected cancer treatment facilities upon advice from their local health provider and 167 (66.8%) gave inadequate health services in their previous facility as their basis for their choice. Anticipation for better quality of care and friends/relatives influenced decision making for 195 (77.1%) and 186 (73.5%) of respondents respectively. Cost effectiveness of treatment was an influencing factor for 167 (67.9%) of respondents. See Table 4 below.

Table 4: Reasons for Choice of Cancer Treatment Health Facility

Factor	Number	Percent
Advice from local healthcare provider	205	80.7
Better quality of care	195	77.1
Friends/Relatives	186	73.5
Cost effectiveness of treatment	167	67.9
Advice from other patients	125	50.6
Waiting time	67	26.7
Media information sources	19	7.5
Following medical camp	18	7.1

4.1.6 Reasons for Choice of Country to Receive Cancer Treatment

The majority of respondents, 210 (83%), indicated that their healthcare provider influenced their choice country. Cost-effectiveness was an influencing factor for 185 (73%) respondents. One hundred and seventy-seven (70%) respondents indicated that their reason for choice of country was advice from friends/relatives and perception that the quality of care would be adequate. Other recorded influencing factors included; advanced medical facilities, 164 (64.8%), experienced health workers, 131 (52%), and quality of care, 177 (70%). See Table 5 below.

Table 5: Reasons for Choice of Country that Provided Cancer Treatment

Factor	Number	Percent
Your healthcare provider	210	83.0
Cost effectiveness	185	73.1
Friends/relatives	177	70.0
Quality of care	177	70.0
Advanced medical facilities	164	64.8
Reputation of the Country	156	61.9
Reputation of experienced health workers	131	52.0
Other reasons	2	50.0
Combine treatment with sight-seeing	60	23.7
Combine treatment with business	45	17.8

4.1.7 Perception of Experiences during Treatment and Quality of Care (QOC)

The study showed that the majority of respondents, 233 (91.7%), thought their expectations were met during the course of treatment. Ninety (38.8%) respondents reported receiving persons (navigators) to assist access required facilities at the health facilities (Table 6). Having a navigator was found to be 'very useful' by 75 (31.3%) and 'useful' by 13 (5.4%) of respondents, Table 7. Majority of respondents, 212 (88%), were accommodated outside the health facility during their course of treatment.

Table 6: Study Respondents Perception of Their Experiences during Treatment

	Number	Percent
Met Expectations	233	91.7
Navigator at health facility	94	38.8
Accommodation at outside the health facility	212	88

Table 7: Study Respondent’s Experience with Hospital Navigator

	Very useful		Useful		Moderate		Not Useful		Not Applicable	
	n	%	n	%	n	%	n	%	n	%
Having a hospital navigator	75	31.3	13	5.4	3	1.3	1	0.4	148	61.7

The study respondents were requested to indicate their treatment experience and rate their perception of various components of QOC at their chosen cancer treatment centres. Respondents’ overall perception of QOC experienced was either good for 112 (44.4%) or very good 123 (48.8%) respondents. Less than a tenth of respondents (17, 6.7%) thought that their health facility provided moderate or below acceptable QOC. See Table 8 below.

Table 8: Respondents Perception of Quality of Care at All Health Facilities

Experience	Very good		Good		Moderate		Poor		Very poor	
	n	%	n	%	n	%	n	%	n	%
Reception at the institution	133	52.8	104	41.3	15	6.0	0	.0	0	.0
Customer care	126	50.0	107	42.5	18	7.1	1	.4	0	.0
Accommodation facilities outside	104	41.6	129	51.6	15	6.0	2	.8	0	.0
Environment of health institution	103	40.9	131	52.0	17	6.7	0	.0	1	.4
Ease of movement within facility	103	40.9	134	53.2	13	5.2	2	.8	0	.0
Cleanliness within health facility	119	47.2	113	44.8	18	7.1	1	.4	1	.4
Hospital/Institution facilities	127	50.4	116	46.0	9	3.6	0	.0	0	.0
Treatment facilities	129	51.2	113	44.8	10	4.0	0	.0	0	.0
Diagnostic facilities	120	47.6	117	46.4	13	5.2	2	.8	0	.0
Courtesy of hospital staff	124	49.4	105	41.8	19	7.6	3	1.2	0	.0
Timeliness of service	120	47.6	97	38.5	24	9.5	8	3.2	3	1.2
Handling of patients	124	49.2	112	44.4	13	5.2	3	1.2	0	.0
Staff willingness to help patients	122	48.4	114	45.2	13	5.2	3	1.2	0	.0
Nursing care	128	51.0	109	43.4	10	4.0	4	1.6	0	.0
Caring attitude of health worker	124	49.2	110	43.7	13	5.2	5	2.0	0	.0
Personalized attention	126	50.0	105	41.7	13	5.2	8	3.2	0	.0
Accessibility to doctor	128	50.8	105	41.7	18	7.1	0	.0	1	.4
Ability of healthworkers to help one understand disease	130	51.6	106	42.1	15	6.0	0	.0	1	.4
Ability of healthworkers to help one understand treatment	130	51.6	105	41.7	16	6.3	0	.0	1	.4
Overall quality of care received	123	48.8	112	44.4	17	6.7	0	.0	0	.0

A majority of respondents, 245 (97.2%) would recommend their treatment centres to other patients for the several reasons, including staff hospitality, 231 (92%), staff team work, 231 (92.4%),

timeliness of services, 227 (90.8%), cost effectiveness, 231 (88.8%), amongst others 8 (3.1%). See Table 9 below.

Table 9: Reasons Study Respondents would recommend their Treatment Centres

	Number	Percent
Recommend health facility to others	245	97.2
Reasons: -		
a. Teamwork among health staff	231	92.4
b. Hospitality of health staff	231	92.0
c. Timeliness of services	227	90.8
d. Affordability/cost effectiveness	222	88.8
e. Others	8	3.1

4.1.8 Funding for Cancer Treatment, Travel and Accommodation

The study revealed the two main cancer management financiers were the NHIF and own out-of-pocket house-hold funds, which funded 146 (57.3%) and 140 (55%) respondents, respectively as indicated in Table 10 below.

Table 10: Funding Sources for Cancer Management

Funder	Number	Percent
Self-funding	146	57%
NHIF	140	55%
Private insurance company	7	3%
Employer	2	1%

The study revealed that the median consolidated cost for cancer treatment, travel and accommodation for all centres as provided by 194 (76%) respondents was KES 100,750 (range KES 4,600 - 1.6 million). See Table 11 below.

Table 11: Available cost of Cancer Management, Travel and Accommodation

	n	Mean	Standard Deviation	Median	Minimum	Maximum	Percentile 25	Percentile 75
Cost of treatment	112	709,160	1,322,880	92,000	3,000	8,000,000	15,000.00	1,050,000
Cost of procedure	146	596,449	1,576,287	100,000	600	14,000,000	60000.00	400,000
Cost of accommodation	67	204,744	342,501	120,000	500	1,921,920	19305	180,000
Cost of travel	124	96,931	171,870	11,000	100	1,400,000	425	145,000
Known total cost	194	990,953	2,233,592	100,750	4,600	16,060,000	435,00	500,000

4.2 Inferential Results

4.2.1 Sociodemographic Characteristics and Their influence on Choice of Country

Bivariate analysis, using chi-square statistics, revealed significant differences between the cases and controls. With regards to the sociodemographic characteristics, we found that traveling to India was associated with the male gender ($X^2=5.4$, $p=0.021$), urban dwelling ($X^2=83.3$, $p<0.0001$), higher education levels ($X^2=105.9$, $p<0.0001$) and under government employment ($X^2=72.3$, $p<0.0001$). See Table 12 below.

Table 12: Associations between Sociodemographic characteristics and Country Providing Treatment

		Country Providing Treatment				Chi square	p-value
		Kenya		India			
		n	%	n	%		
Age Groups (years)	<14	1	0.6	4	5.1	9.052	0.107
	15-29	17	9.9	7	8.9		
	30-44	39	22.7	24	30.4		
	45-59	62	36.0	26	32.9		
	60-74	44	25.6	13	16.5		
	>75	9	5.2	5	6.3		
Gender	Male	48	58.5	34	41.5	5.4	0.021
	Female	122	73.1	45	26.9		
Residence	Urban area	34	35.1	63	64.9	83.3	<0.0001
	Rural area	140	89.7	16	10.3		
Marital status	Never married	20	11.5	6	7.6	7.6	0.267
	Currently married	135	77.6	62	78.5		
	Separated/ Divorced	4	2.2	4	5		
	Widowed	12	6.9	3	3.8		
	Declined to answer	3	1.7	4	5.0		
Education level	No Formal Education	14	8.0	1	1.2	105.9	<0.0001
	Primary School Education	74	42.5	6	7.5		
	Secondary/High School	67	38.5	16	20.0		
	College/University Education	13	7.5	29	36.2		
	Declined to Answer	6	3.4	28	35.0		
Occupation	Self-Employed	59	33.9	18	22.	72.3	<0.0001
	NGO Employee	10	5.7	19	23.8		
	Government Employee	6	3.4	22	27.5		
	Farmer	31	17.8	0	0.0		
	Unemployed / Retired	62	35.6	20	25.0		
	Other	6	3.4	1	1.2		
Presence of other Chronic diseases	Yes	38	69.1	17	30.9	0.001	0.972
	No	137	68.8	62	31.2		

The study showed that choice to travel to India was significantly associated with higher monthly income ($p < 0.0001$) and longer duration from the time the respondents were diagnosed with cancer ($p < 0.0001$) (Table 13). Study respondents who chose treatment centres in India had known their diagnosis for an average period of 26.2 months (SD= 25.9, range 1- 188 months), while those treated in Kenya had an average duration of 8 months (SD=10.3, range 1-90 months).

Table 13: Factors associated with Choice of Treatment Centre

		N	Mean	Std. Deviation	Minimum	Maximum	p-value
Age	Kenya	173	50.97	15.266	14	81	0.075
	India	78	47.10	17.160	3	86	
	Total	251	49.77	15.945	3	86	
Monthly income (KES)	Kenya	28	13,678.60	12,359.30	700.00	50,000.00	<0.0001
	India	52	70,153.80	68,998.80	10,000.00	400,000.00	
	Total	80	50,387.50	62,132.50	700.00	400,000.00	
Duration since diagnosis	Kenya	173	8.01	10.315	1	90	<0.0001
	India	78	26.23	25.911	1	188	
	Total	251	13.67	18.746	1	188	

4.2.2 Types of Cancers, their Management and their Effect on Country of Choice

With regards to the cancer categories, there was statistically significant association between diagnosis of blood related malignancies and provision of cancer treatment in India ($X^2=74.68$; $p<0.0001$). The majority of respondents, 107 (84.9%) diagnosed with reproductive organ cancers were managed in Kenya. See Figure 6 below.

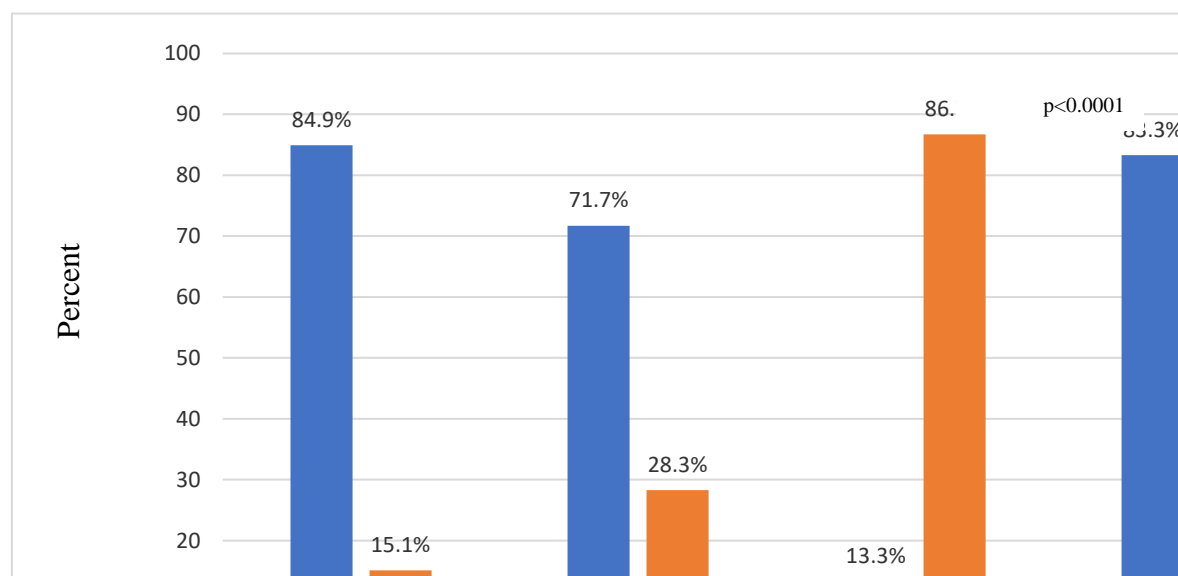


Figure 6: Types of Cancers by Country Providing Treatment

There was significant association between the referring health facility and the choice of treatment centre ($X^2= 105.6$, $p<0.0001$). We found that private health facilities referred a higher proportion of respondents. Fifty-nine (73.8%) of all the respondents treated in India were referred by private hospitals (Table 14).

There was also statistically significant association between the mode of management and the country that provided treatment ($p<0.0001$). All respondents who required surgery, 39 (73.6%), bone marrow transplant, 10, and PET Scan, 70 (100%) were managed in India.

Table 14: Cancer Management and Country Providing Treatment

		Country Providing Treatment				Chi-square	p-value	Fishers Exact Test
		Kenya		India				
		n	%	n	%			
Referring Entity	Government hospital	135	77.6	8	10.0	105.55	<0.0001	
	Private hospital	32	18.4	59	73.8			
	Private clinic	6	3.4	7	8.8			
	Self	1	0.6	1	1.3			
	Other	0	0	5	6.3			
Mode of Management	Chemotherapy	165	74.2	56	25.8	25.65	<0.0001	
	Radiotherapy	62	86.1	10	13.9	14.4	<0.0001	
	Surgery	14	26.4	39	73.6	55.0	<0.0001	
	Bone Marrow Transplant	0	0	10	100			<0.0001
	Brachytherapy	0	0	2	100			0.98
	PET Scan	0	0.0	70	100			<0.0001
Funding Source	Self-funding	75	43.4	33	41.2	0.099	0.786	
	NHIF	98	56.6	47	58.8			

There was no association between the source of funding for treatment and the choice of country providing treatment ($X^2= 0.1$, $p=0.79$). Of the study respondents treated in India, NHIF funded 47 (58.8%) and 33 (41.2%) funded themselves. (See table 15).

4.2.3 Factors Influencing Choice of Health Facility

Our study sought to determine the patient-related factors that influenced the choice of health facility. There was a statistically significant association between choice of health facility and inadequate health services in referring centres ($X^2= 42.1$, $p<0.0001$), waiting time required before starting treatment ($X^2= 20.9$, $p<0.0001$), perception that they would receive better quality of care ($X^2= 15.28$, $p<0.0001$), advice from friends/relatives ($X^2= 5.13$, $p=0.023$), information from other patients ($X^2= 11.95$, $p=0.001$), and the media ($X^2= 4.38$, $p=0.036$). See Table 15 below.

Table 15: Factors Influencing Choice of Cancer Treatment Health Facility

Reasons for choice of health facility	Country Providing Treatment				Chi-square	p-value
	Kenya		India			
	n	%	n	%		
Inadequate health services in referring health facilities	94	54.0	73	96.1	42.13	<0.0001
Better quality of care	122	70.1	73	92.4	15.28	<0.0001
Advice from local healthcare provider	146	83.4	59	74.7	2.67	0.102
Information from other patients	74	43.3	51	67.1	11.95	0.001
Cost effectiveness of treatment	116	68.6	51	66.2	0.14	0.708
Friends/Relatives	136	77.7	50	64.1	5.13	0.023
Waiting time to treatment	32	18.3	35	46.1	20.88	<0.0001
Media information sources	9	5.2	10	12.7	4.38	0.036
Following medical camp	14	8.0	4	5.1	0.71	0.398

4.2.4 Factors Influencing Choice of Country

With regard to factors influencing choice of the country to provide the cancer treatment, we found that there was statistically significant association with respect to a country's reputation ($X^2= 25.6$, $p<0.0001$), advice from patient's healthcare providers ($X^2= 5.64$, $p=0.018$), QOC ($X^2= 19.0$, $p<0.0001$), advanced medical facilities ($X^2= 28.5$, $p<0.0001$), opportunity to combine sightseeing ($X^2= 64.9$, $p<0.0001$) amongst others (see Table 19). Sixty-seven (84.8%) of the respondents who went to India were influenced by the Country's reputation to provide cancer treatment. Similarly, 70 (88.6%) were influenced by QOC provided by advanced medical facilities, 59 (74.7%) by healthcare providers and 64 (82.1%) by availability of reputed health workers (see Figure 7 below).

Table 16: Factors Influencing Choice of Country Providing Treatment

Reason for choice of Country	Country Providing Treatment				Chi-square	p-value
	Kenya		India			
	n	%	n	%		
Cost effectiveness	125	71.8	60	75.9	0.47	0.494
Reputation of the Country	89	51.4	67	84.8	25.60	<0.0001
Quality of care	107	61.5	70	88.6	19.00	<0.0001
Advanced medical facilities	94	54.0	70	88.6	28.50	<0.0001
Availability of reputed health workers	67	38.5	64	82.1	40.91	<0.0001

Advice from healthcare provider	151	86.8	59	74.7	5.64	0.018
Friends/relatives	124	71.3	53	67.1	0.45	0.502
Combine treatment with sight-seeing	16	9.2	44	55.7	64.94	<0.0001
Combine treatment with business	11	6.3	34	43.0	50.09	<0.0001

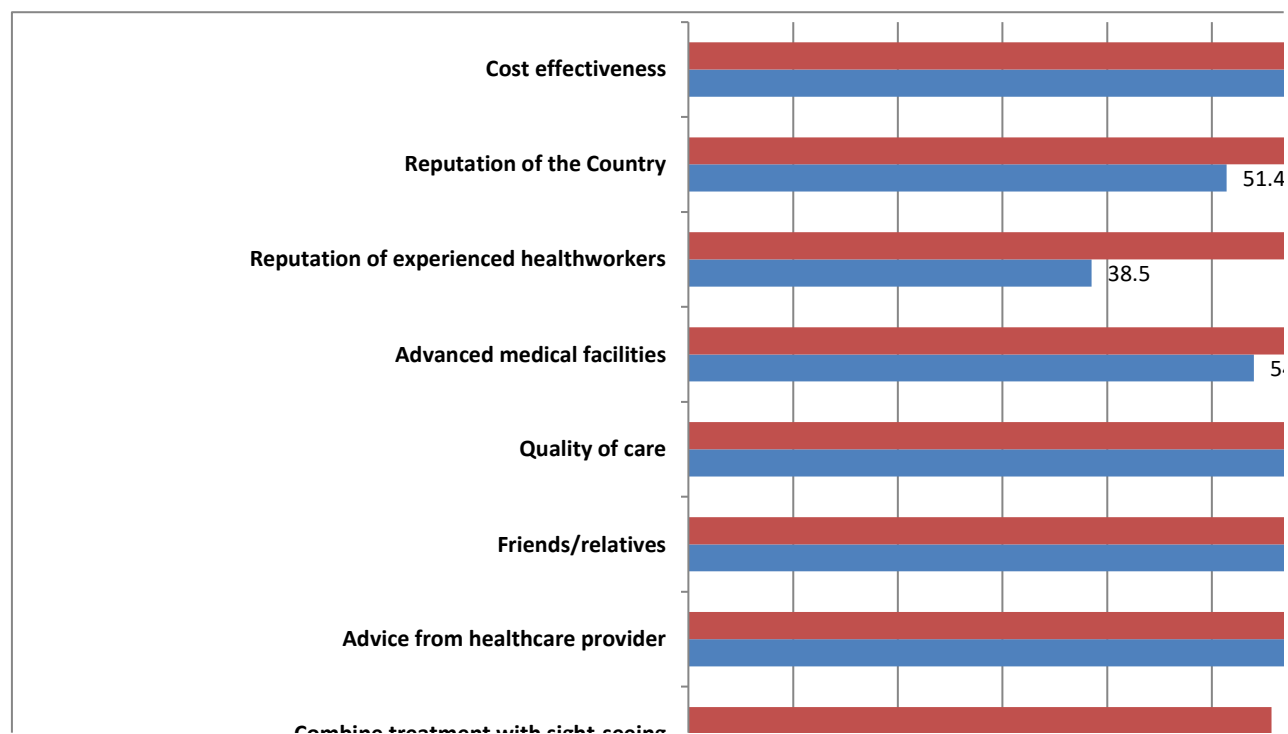


Figure 7: Factors Influencing Choice of Treatment Centre by Percent of Study Subjects

Majority of respondents treated in Kenya and India felt their expectations were met; 158 (90.3%) and 75 (94.9%) respectively. There was no association between the country providing treatment and the respondents' perception of expectations being met.

However, there was statistically significant association between the country providing treatment and the respondents' treatment experience with respect to the presence and assistance provided by hospital navigators, ($X^2= 90.46$, $p<0.0001$) and ($X^2= 114.9$, $p<0.0001$) respectively. Sixty-four (82.1%) respondents who chose to be treated in India had a hospital navigator and almost a majority, 60 (76.9%) rated the help as 'very useful'. See Table 17 below.

Majority of subjects were accommodated outside the health facilities; 141 (84.9%) in Kenya and 71 (94.7%) in India.

Table 17: Respondents Treatment Experience and Country Providing Treatment

	Country Providing Treatment				Level of significance		
	Kenya		India		Chi-square	p-value	
	n	%	n	%			
Expectations Met	158	90.3	75	94.9	1.56	0.213	
Movement in health facility facilitated by a navigator	30	18.3	64	82.1	90.46	<0.0001	
Rating the help from the facility navigator	Very useful	15	9.3	60	76.9	114.9	<0.0001
	Useful	9	5.6	4	5.1		
	Moderate	3	1.9	0	0.0		
	Not useful	1	0.6	0	0.0		
	Not applicable	134	82.7	14	17.9		
Provision of accommodation outside the health facility	141	84.9	71	94.7	4.62	0.32	
Recommending Treatment Centre to Others	169	97.7	76	96.2	2.83	0.243	

The majority of the study respondents indicated they would recommend their treating health facility to others, irrespective of whether they were treated in Kenya (169, 97.7%) or in India (76, 96.2%); p=0.24.

4.2.5 Perceptions of Quality of Health Care Received

Bivariate analysis was performed on the study data to determine whether there was an association between study respondents' perception on the quality of care received and country providing treatment. See Table 18 below.

There was no significant association between the study respondent's overall perception of QOC and the country providing treatment. However, there were significant differences in the perception of specific dimensions of QOC, as demonstrated in Table 18 below.

The study showed that were statistically significant associations between the respondents' perception of QOC experienced and the country providing treatment with respect to reception at the facility ($X^2=11.3$, $p=0.004$), surrounding environment ($X^2=21.2$, $p<0.0001$), ease of movement ($X^2=17.5$, $p<0.0001$), cleanliness ($X^2=17.23$, $p=0.0002$), treatment facilities ($X^2=17.24$, $p=0.002$), courtesy of hospital staff ($p=0.015$), timeliness of service ($X^2=19$, $p=0.001$), nursing care ($X^2=12.3$, $p=0.006$), and accessibility to doctors ($X^2=16.5$, $p=0.001$) amongst others.

Table 18: Study Respondents' Perception of Quality of Care at Chosen Health Facility

QOC Dimension	Country	Very Good		Good		Moderate		Poor		Very Poor		Level of significance	
		n	%	n	%	n	%	n	%	n	%	Chi-square	p-value
Reception	Kenya	80	46.2	79	45.7	14	8.1	0	0	0	0	11.3	0.004
	India	53	67.1	25	31.6	1	1.3	0	0	0	0		
Customer care	Kenya	76	43.9	81	46.8	15	8.7	1	0.6	0	0	8.8	0.32
	India	50	63.3	26	32.9	3	3.8	0	0	0	0		
Accommodation	Kenya	65	38	94	55	11	6.4	1	0.6	0	0	3.35	0.34
	India	39	49.4	35	51.6	4	6	4	0.8	0	0		
Environment around health facility	Kenya	56	32.4	106	61.3	11	6.4	0	0	0	0	21.2	<0.0001
	India	47	59.5	25	31.6	6	7.6	1	1.3	0	0		
Ease of movement within the health facility	Kenya	56	32.4	105	60.7	11	6.4	1	0.6	0	0	17.5	0.001
	India	47	59.5	29	36.7	2	2.5	1	1.3	0	0		
Cleanliness within the health facility	Kenya	67	38.7	88	50.9	16	9.2	1	0.6	1	0.6	17.23	0.002
	India	52	65.8	25	31.6	2	2.5	0	0	0	0		
Facilities within the health institution	Kenya	73	42.2	93	53.8	7	4	0	0	0	0	14.9	0.001
	India	54	68.4	23	29.1	2	2.5	0	0	0	0		
Treatment facilities	Kenya	76	43.9	88	50.9	9	5.2	0	0	0	0	17.24	0.002
	India	53	67.1	25	31.6	1	1.3	0	0	0	0		
Diagnostic Facilities	Kenya	76	43.9	84	48.6	11	6.4	2	1.2	0	0	4.57	0.206
	India	44	55.7	33	41.8	2	2.5	0	0	0	0		
Courtesy of hospital Staff	Kenya	74	42.8	81	48.8	15	8.7	3	1.7	0	0	10.5	0.015
	India	50	64.1	24	30.8	4	5.1	0	0	0	0		
Timeliness of Service	Kenya	68	39.3	73	42.2	21	12.1	8	4.6	3	1.7	19	0.001
	India	52	65.8	24	30.4	3	3.8	0	0	0	0		
Handling of Patients	Kenya	74	42.8	84	48.6	12	6.9	3	1.7	0	0	11.5	0.009
	India	50	63.3	28	35.4	1	1.3	0	0	0	0		
Staff willingness to help patients	Kenya	74	42.8	85	49.1	12	6.9	2	1.2	0	0	8.9	0.31
	India	48	60.8	29	36.7	1	1.3	1	1.3	0	0		
Nursing Care	Kenya	7	44.8	81	47.1	10	5.8	4	2.3	0	0	12.3	0.006
	India	51	64.6	28	35.4	0	0	0	0	0	0		
Caring Attitude of Health Worker	Kenya	77	44.5	79	45.7	12	6.9	5	2.9	0	0	8.65	0.03
	India	47	59.5	31	39.2	1	1	0	0	0	0		
Personalized care	Kenya	72	41.6	82	47.4	11	6.4	8	4.6	0	0	17.3	0.001
	India	54	68.4	23	29.1	2	2.5	0	0	0	0		
Accessibility to Doctor	Kenya	74	42.8	81	46.8	17	9.8	1	0.6	0	0	16.5	0.001
	India	54	68.4	24	30.4	1	1.3	0	0	0	0		
Ability of health workers to explain about the disease	Kenya	75	43.3	85	49.1	12	6.9	1	0.6	0	0	15.2	0.002
	India	55	69.6	21	26.6	3	3.8	0	0	0	0		
	Kenya	74	42.8	86	49.7	12	6.9	1	0.6	0	0		

QOC Dimension	Country	Very Good	Good	Moderate	Poor	Very Poor	Level of significance						
Ability of health workers explain about the treatment or procedure	India	56	70.9	19	24.1	4	5.1	0	0	0	0	5	0.82
Overall Quality of care	Kenya	78	45.1	80	46.2	15	8.7	0	0	0	0		
	India	45	0	32	0	2	0	0	0	0	0		

4.3 Independent Predicators for Choice of Health Facility and Country

Logistic regression models were used to identify independent predictors of choice of treatment site. The study showed when controlling for gender and other factors, monthly income and duration from diagnosis (in months) were found to independent predicators for seeking treatment in India. The likelihood for choosing treatment in India was found to be 38.9 times higher for cancer patients who earned KES 25,000 monthly and above ($p < 0.0001$, 95% Confidence Interval (CI) 7.5-201.3). Every additional month from diagnosis was associated with increased likelihood of seeking treatment in India by 1.16 times ($p = 0.005$, 95% CI 1.046- 1.28). See Table 19 below.

Table 19: Demographic factors associated with choice of treatment abroad

	Coefficient	Standard Error of Coefficient	p-value	OR	95% C.I. for OR	
					Lower	Upper
Monthly Income >KES25000	3.66	0.84	<.0001	38.92	7.52	201.27
Duration since diagnosis (months)	0.15	0.05	0.005	1.16	1.05	1.28
Gender	-0.089	0.91	0.923	0.92	0.15	5.5

When controlling for other factors, we found seven significant independent predictors of choosing a health facility or Country for cancer treatment. The adjusted odds for seeking treatment in India were increased by 66.2 (95% CI 7.9 -552.9) and 42 (95% CI 7.07-248.6) times higher upon advice from healthcare providers and friends/relatives, respectively. Anticipation to receive better quality of care was another independent predictor, (OR=22.5, 95% CI 2.2-230.6).

On the other hand, the likelihood of seeking treatment in India was reduced with respect to inadequate cancer services at initial health facilities (OR=99%, 95% CI 99.9 -88.4%), reputation of the country to provide cancer treatment (OR=93.5%, 95% CI 51.6-99.1%), level of QOC to be provided in a country (OR= 96.8%, 95% CI 66.6 – 99.7%), and opportunity to combine sightseeing (OR=95.5%, 95% CI 98.7-84.8%). See Table 20 below.

Table 19: Independent Factors Influencing of selecting Country to Receive Treatment

Variables	Coefficient	Standard Error of Coefficient	p-value	Odds Ratio	95% C.I. for OR	
					Lower	Upper
Advice of Healthcare provider	4.193	1.083	<.0001	66.209	7.929	552.85
Friends/ Relatives (HF)	3.736	.908	<.0001	41.927	7.07	248.64
Anticipation to receive better quality care at Health Facility	3.115	1.187	.009	22.526	2.2	230.63
Lack adequate cancer services in initial health facility	-4.599	1.248	<.0001	.010	.001	.116
Reputation of country	-2.732	1.023	.008	.065	.009	.484
Quality of care in country	-3.442	1.192	.004	.032	.003	.331
Treatment sightseeing in country	-3.104	.623	<.0001	.045	.013	.152

When we applied logistic regression models to the respondent's perception of QOC received at health facility and adjusted for the elements of quality of care we found that the caring attitude of health workers in India increased the likelihood of travelling to India by 8.3 times (95% CI 2.3-30.3). However, there were three elements of QOC which were independent predictors of reduced likelihood of choosing Indian health facilities, namely; timeliness of service (OR 68.5%, 95% CI 26.2-86.5%), cleanliness of the health facilities (OR 53.6%, 95% CI 21.8-98.7%) and personalized attention (OR 27.6%, 95% CI 20.9-90.4%). See Table 20 below.

Table 20: Perception of QOC and Likelihood of with seeking treatment abroad

Variables	Coefficient	Standard Error of the Coefficient	P-value	Odds Ratio	95% C.I. for OR	
					Lower	Upper
Caring attitude	2.12	0.66	.001	8.36	2.30	30.34
Cleanliness	-0.77	0.39	.046	.46	0.22	0.99
Timeliness service	-1.16	0.43	.008	.32	0.14	0.74
Personalized attention	-1.29	0.54	.017	.28	0.1	0.79

CHAPTER FIVE: DISCUSSION

5.1 Introduction

There is a paucity of systematically generated information about Kenya's outward-bound medical tourism, yet it is a growing industry globally and locally. This study sought to characterize medical tourism in Kenya and understand the key patient-related factors that influence choice of treatment out of the country with specific reference to management of cancer. We also analyzed respondents' perception of the quality of care they received.

Our study compared 80 study participants diagnosed with cancer who were treated abroad, with 174 participants who chose to be treated in Kenya. All the study respondents who chose to be treated abroad selected health facilities in India. These respondents therefore formed the case group in this case-control study, while those who were treated in KNH and Texas Cancer Centers were our control group.

5.2 Characteristics of Study Subjects and Disease profile

The median age of the respondents was 50 years with nearly two-thirds being 45 years old and above. Globally a larger proportion of cancer patients (70%) are 50 years and older (Roser M and Ritchie 2015), depicting earlier onset of cancer in the Kenyan population.

Much like the Globocan Report (Globocan 2018) on cancers, which shows that the female gender is more affected than the male gender. Additionally, our data also showed that a higher proportion of respondents were female; nearly 60%. Most of the top cancers in the Globocan report are similar with those of our respondents, namely; cervix, breast, esophagus, gastrointestinal and prostate cancer. Like Kenya, cancer is the commonest diseases for patients are referred from other Sub-Saharan countries into South Africa (Crush & Chikanda, 2014).

Irrespective of the country the respondents chose to receive treatment in, the majority received chemotherapy as the initial mode of therapy. Management of cancer was financed by the National Hospital Insurance Fund (NHIF) or using out-of-pocket household finances, without demonstrable statistically significant difference between those who sought treatment in Kenya or India. This implies that NHIF equally finances treatment in and out of the country. Participants were accompanied to their treatment centres by family members as care givers.

5.3 Patient-related influencing factors

Most socio-demographic characteristics were not found to influence the choice of country to receive cancer treatment. Other studies have demonstrated that age and higher education are associated with choice of health facility (Victoor, Delnoij, Friele, & Rademakers, 2012; Damman, Spreuwenberg, Rademakers, & Hendriks, 2011; Robertson, & Burge, 2011)

However, our study revealed that every additional month from diagnosis and monthly income of higher than KES 25,000 (OR 39) were independent predictors for seeking treatment abroad. With every increasing month from the time of diagnosis the likelihood of seeking treatment in India increased by 1.16 times. This showed that socio-demographic factors, such as male gender, higher education levels, urban dwellers, government employees, which initially demonstrated significance were really indicators of access to higher resources rather than being independent influencers.

The factors that influenced choice of treatment centre in Kenya or India, included; reputation of a country to provide cancer treatment, availability of adequate treatment facilities, waiting time to initiation of treatment, advice from healthcare provider and friends/relatives, opinion of other patients, perceived quality of care, availability of advanced medical facilities, combining treatment with sight-seeing and business and cost-effectiveness of treatment. This finding is comparable with other studies from other countries (Anish, Dhanish & Sridharan, 2016; Khan, Chelliah, Haron, & Ahmed, 2017).

We further determined the strength of association of these influencing patient-related factors. We found the independent predictors of seeking treatment in India included; advice from health care providers (OR 66 times), opinion of friends or relatives (OR 42), and anticipation to receive better quality of care at chosen facility (OR 22.5). These influencing factors tally with those from other studies (J. Hanefeld et al., 2015; Runnels & Carrera, 2012; Crooks et al., 2010; Connell, 2013; Ruggeri, Ruggeri, et al., 2015; Alsharif et al., 2010; Khan et al., 2017; Khan et al., 2017; Mohammad Jamal Khan, Chelliah, & Haron, 2016; Yeoh, Othman, & Ahmad, 2013).

Similar to our results, Crush and Chikanda (Crush & Chikanda, 2014) in their editorial article demonstrated the two key reasons why patients from African Countries sought treatment in South Africa were unavailability of the required medical treatment, radiological or laboratory procedures in their home countries and recommendation by their doctors and hospitals.

Unlike our findings, some studies found that long waiting periods, online information, marketing, opportunity to combine sightseeing with treatment and distance were important influencing factors for medical tourism (Crooks et al., 2010; Connell, 2013; Rodrigues et al., 2017). This could indicate that in general there may not be significant delay in initiating cancer treatment in Kenyan health facilities and that Kenyans may not trust information from the internet or marketing agents enough to influence their decision-making process.

Interestingly unlike other studies from the developed countries the cost-effectiveness of treatment was not a significant factor for medical tourism (Crooks et al., 2010) however it was an important consideration for all respondents treated both countries. Over 70% of study subjects treated in both countries indicated that cost-effectiveness was an important factor that influenced choice of

treatment centre. Other studies from western countries indicate that patients travel to less developed countries like India and Thailand to access cheaper health care (J. Hanefeld et al., 2015; Ruggeri, Ruggeri, et al., 2015; Paul, Barker, Watts, Messinger, & Coustasse, 2017; Fisher & Sood, 2014).

Independent predictors to cancer patients of reduced likelihood of choosing Indian health facilities were, cleanliness of health facilities, reputation of a country to provide treatment, opportunity for sightseeing, and timeliness of service. This could be an indication that the patients are beginning to appreciate reduction in the long waiting time which used to be cited in times past (The East African 2015).

5.4 Perception of Quality of Care

As a measure of patient satisfaction, we studied the participant's perception of QOC in relation to the country they were treated in. Patient satisfaction has been known to impact trust, reutilization of the services and sharing of information with other patients and friends (J. Hanefeld et al., 2015; Mechinda, Serirat, Sirivan; Anuwichanont, & Gulid, 2010; Prajitmutita, Lyn Manassannan ; Perényi, Áron; Prentice, 2016), which in turn, as our study also demonstrated, to be an influencing factor for medical tourism.

Utilizing dimensions of quality of care adapted from SERVQUAL (Parasuraman A. Zeithaml VA., Berry LL., (1988)), the study demonstrated that the overall perception of QOC was good or very good for nearly 50% of respondents irrespective of the country they chose. Further 95% of study respondents would recommend their treatment centre to other patients. This finding is similar to what Anish et al., demonstrated (Anish, Dhanish & Sridharan, 2016). They showed that image of the hospital, service quality, value of service, patient satisfaction, and trust with the health facility significantly affects oral publicity and choice of health facility for follow up care by international patients.

The general approval of all the health facilities could also be an indication that respondents were 'socialized' to accept the QOC provided as acceptable or they did not have the opportunity to compare.

On average a higher proportion of respondents treated in India scored their chosen facility was '*very good*' compared with those treated in Kenya. The blanket commendation of the chosen health facilities fell apart when the QOC elements were disaggregated to demonstrate significant differences. The component independently rated better by respondents treated in India was the caring attitude of the health workers. These findings are slightly different from what found Meesala and Paul found, which was that reliability and responsiveness impact patients' satisfaction, rather than empathy and assurance (Meesala & Paul, 2018). On the other hand, respondents were less

likely to rate timeliness of the service, personalized attention and cleanliness as independent predictors of selecting health facilities in India.

These are very important aspects as medical tourists have been known to emphasize more on QOC and cost effectiveness rather than attractiveness of the Country (Sultana et al., 2014). Hence Countries and health facilities wanting to attract medical tourists need to pay close attention to the quality of care they offer and the specific dimensions of QOC.

5.5 Limitations

This study was conducted within a short period of time. It focused on recalled data which is known to introduce limitations in terms of accuracy due to recall bias. Cost of care was also difficult to analyze because of lack of verifiable documents and recall bias. Finally, the study used quantitative data which tends to be limited to predetermined answers thereby limiting possibility of inclusion of other answers that may not have been anticipated.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

In conclusion, the key factors that influence medical tourism in Kenya are increasing duration month by month from diagnosis, monthly income of higher than KES 25,000/=, lack of adequate cancer treatment services at local facility, anticipation to receive better quality of care at chosen facility, opinion of friends or relatives, and advice from health care providers.

Perception of quality of care in respondents was generally good or very good irrespective of the country where they received treatment for cancer. India was rated higher in terms of caring attitude of health workers. Negative independent predictors of QOC for treatment in India were personalized care, timeliness of service, and facility cleanliness. Overall an overwhelming majority of respondents would refer other patients to their chosen treatment centres, denoting the confidence they placed on their health facility.

Recommendations

There will be need for additional research will be required to understand and unpack influencing factors such as health worker recommendation. Cost analysis and effectiveness studies, long term outcomes, impact on host country will also be important to study, thereby further contribute to characterization of medical tourism. Other possible influencing factors to study include; hospital accreditation, language, climate, expected long-term outcomes of care, attitude of host country citizenry, religious accessibility and food, demonstrated in other studies (Crooks et al., 2010; (Alsharif et al., 2010). Additional studies on the In-depth qualitative studies are likely to give additional information about the patient related factors and perception of quality of care.

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APPENDICES

Appendix 1: Consent Forms

1.1 Consent form in English

Comparing Patient Related Factors Associated with Choice of Cancer Treatment Centre, Locally in Kenya or Abroad: A Case Control Study

Consent for Study Participation for Cancer Patients

1. Introduction

We request your participation in a research that is studying the factors that influence the cancer treatment centre chosen by patients, centres located locally in Kenya or abroad. The study is being done by the Dr Mary Wangai, a Postgraduate Student in Research Methodology from **University of Nairobi Institute of Tropical and Infectious Diseases**. Before you decide whether to take part in the study, we would like to explain the purpose, risks and benefits of the study. This is important because it will help you make an informed decision. Should you agree to be a part of this study, we will request you to give written consent.

2. Purpose of the Study: We would like to learn about the factors that influence patients' choice to travel abroad or remain at a local cancer centre for treatment. We will use the information to make recommendations on improving the health care system in Kenya, for the sake of the citizenry and patients from other countries who may come to Kenya for medical treatment.

3. Procedures: We request that you respond to a structured questionnaire that is likely to take about 20-30 minutes to complete. It contains details, such as type of cancer, influencing factors for seeking treatment locally or abroad, choice of health facility, cost of care, and perception on the quality of care received.

4. Risks, Stress, and Discomfort: There are no physical risks expected to you as a person by your participation in the study. The questions will be factual in nature. You do not have to answer any question that makes you feel uncomfortable. You can request to terminate the interview at any time if you do not want to participate anymore.

5. Alternatives to participation

There are no other alternative studies of a similar nature that you can participate in at the current time.

6. Benefits for participating in the study: You will not directly benefit from participating in the study. However, your contributions will be greatly appreciated and help us make recommendations for strengthening the Country's health systems.

7. Other information: Reimbursement: You will not receive any reimbursement for your time and effort if you take part in this study. However there is a transport reimbursement of KES 500/- for those who will come to any study site to be interviewed specifically for the study¹.

9. Confidentiality of Research Information

The collected data will be held in strict confidence by the study team and securely stored in a locked cabinet in the offices of the Principal Investigators or study statistician (during analysis). Thereafter the forms will be destroyed in December 2022. The data will not be used for any other purposes other than the Study.

Problems or Questions:

If you ever have any questions about the study you should contact Dr. Mary Wangai, at 0722-525747. If you have questions about your rights as a research participant, or feel you have been harmed by the study, you should contact Professor Guantai, the Chair of the KNH/UoN ERC, at 2726300. You can also contact the UNITID at +254 20 272 6765 /+254 723 398 025

1.2 Consent form for Cancer Patients in Kiswahili

Fomu ya Idhini/ Ruhusa ya Mgonjwa ambaye anaugua Saratani

Kulinganisha Vipengele vinavyohusiana na Mgonjwa, vinavyolingana na uchaguzi wa Kituo cha Tiba ya Saratani, vilivyopo hapa Kenya au Nje ya Nchi: Kesi ya Kudhibiti Utafiti

Ruhusa ya Ushiriki wa Utafiti wa Wagonjwa wa Saratani.

- 1. Kuanzishwa:** Tunaomba ushiriki wako katika utafiti unaojifunza mambo ambayo yanayoathiri kituo cha matibabu cha saratani kilichochaguliwa na wagonjwa, vituo vilivyopo nchini Kenya au nje ya nchi. Utafiti huo unafanywa na Dr Mary Wangai, Mwanafunzi wa Uzamili katika Mbinu za Utafiti kutoka Taasisi ya Chuo Kikuu cha Nairobi ya Tropical na infectious Diseases. Kabla ya kuamua kama kushiriki katika utafiti, tunataka kuelezea madhumuni, hatari na faida za utafiti. Hii ni muhimu kwa sababu itasaidia kufanya uamuzi sahihi. Unapaswa kukubali kuwa sehemu ya utafiti huu, tutakuomba upe kibali kilichoandikwa.
- 2. Kusudi la Utafiti:** Tungependa kujifunza kuhusu sababu ambazo zinaathiri uchaguzi wa wagonjwa kusafiri nje ya nchi au kubaki katika kituo cha saratani za mitaa kwa matibabu. Tutatumia habari ili kutoa mapendekezo juu ya kuboresha mfumo wa huduma za afya nchini Kenya, kwa ajili ya raia na wagonjwa kutoka nchi nyingine ambao wanaweza kuja Kenya kwa matibabu.
- 3. Utaratibu:** Tunakuomba ujibu jibu la swala ambalo linawezekana kuchukua muda wa dakika 20-30 ili kukamilisha. Ina maelezo, kama aina ya saratani, inaathiri sababu za kutafuta matibabu ndani ya nchi au nje ya nchi, uchaguzi wa kituo cha afya, gharama ya huduma, na mtazamo juu ya ubora wa huduma zilizopatikana.

¹ This statement will be omitted in forms for patients being interviewed during their regular clinic appointments

4. **Hatari, shida, na wasiwasi:** Hakuna hatari ya kimwili inayotarajiwa kwako kama mtu kwa ushiriki wako katika utafiti. Maswali yatakuwa ya kweli katika asili. Huna budi kujibu swali lolote linalofanya usijisikie. Unaweza kuomba kusitisha mahojiano wakati wowote ikiwa hutaki kushiriki tena.
5. **Mbadala ya Kushiriki:** Hakuna masomo mengine mbadala ya hali sawa ambayo unaweza kushiriki katika wakati wa sasa.
6. **Faida za kushiriki katika utafiti:** Huwezi kufaidika moja kwa moja na kushiriki katika utafiti. Hata hivyo, mchango wako utathaminiwa sana na kutusaidia kufanya mapendekezo ya kuimarisha mifumo ya afya ya Nchi.
7. **Taarifa nyingine:** Malipo ya malipo: Huwezi kupokea malipo yoyote kwa muda na jitihada zako ikiwa unashiriki katika utafiti huu. Hata hivyo kuna malipo ya usafiri wa KES 500 / - kwa wale ambao watakuja kuhojiwa kwa ajili ya utafiti huo².
8. **Usiri wa Taarifa ya Utafiti:** Takwimu zilizokusanywa zitafanyika kwa ujasiri thabiti na timu ya utafiti na kuhifadhiwa kikamilifu katika baraza la mawaziri na kufungiwa katika ofisi za Wachunguzi wakuu au wa statistician (wakati wa uchambuzi). Baadaye fomu zitaangamizwa Desemba 2022. Data haitatumiwa kwa madhumuni mengine yoyote isipokuwa Utafiti.

Matatizo au Maswali:

Ikiwa una maswali yoyote juu ya utafiti unapaswa kuwasiliana na Dr Mary Wangai, kwa nambari **0722-525747**. Ikiwa una maswali juu ya haki zako kama mshiriki wa utafiti, au unajisikia umeharibiwa na utafiti, unapaswa kuwasiliana na Profesa Guantai, Mwenyekiti wa **KNH / UoN ERC**, kwa nambari **2726300**. Unaweza pia kuwasiliana na **UNITID** kwa nambari **+254 20 272 6765 / + 254 723 398 025**.

1.3 Consent form for Parent or Guardian of Minor with Cancer

English version of Consent form for Parents or guardians of Minors

Comparing Patient Related Factors Associated with Choice of Cancer Treatment Centre, Locally in Kenya or Abroad: A Case Control Study

Consent form for Study Participation- Written Consent

1. Introduction: We are requesting for your consent to participate in a research study on behalf of your child/ward who is a minor. The study is on factors associated with cancer patients' choice of treatment centre; locally or abroad. However since you are the decision maker in this case we are requesting for your participation in place of your child/ward.

² This statement was omitted in forms for patients being interviewed during their regular clinic appointments

The study is being done by the Dr Mary Wangai, a Postgraduate Student in Research Methodology, **University of Nairobi Institute of Tropical and Infectious Diseases**. Before you decide whether to allow your child to take part in the study, we would like to explain the purpose, risks and benefits of the study. If you agree for your child/ward to participate, we will ask you to give written consent.

2. Purpose of the Study: We would like to learn about the factors that influence the patients' choice to travel abroad or remain at a local cancer centre for medical attention. We will use the information to make recommendations on improving the health care system in Kenya and make the Country a place where persons of other nationalities from the region will come for medical care.

3. Procedures: We request you to respond to a structured questionnaire that is likely to take about 20-30 minutes to complete. It contains details, such as type of cancer, patient related factors for seeking treatment locally or abroad, choice of health facility, cost of care, and perception on the quality of care received.

4. Risks, Stress, and Discomfort: There are no physical risks expected to you as a person by your participation in the study. The questions will be factual in nature. You do not have to answer any question that makes you feel uncomfortable. You can request to terminate the interview at any time if you do not want to participate anymore.

5. Alternatives to participation

There are no other alternative studies of a similar nature that you can participate in at the current time.

6. Benefits for participating in the study: You will not directly benefit from participating in the study. However, your contributions will be greatly appreciated and help us make recommendations for strengthening the Country's health systems.

7. Other information: Reimbursement: You will not receive any reimbursement for your time and effort if you take part in this study. However there is a transport reimbursement of KES 500/- for those who will come to any study site to be interviewed specifically for the study³.

9. Confidentiality of Research Information

The collected data will be held in strict confidence by the study team and securely stored in a locked cabinet in the offices of the Principal Investigators or study statistician (during analysis). Thereafter the forms will be destroyed in December 2022. The data will not be used for any other purposes other than the Study.

Problems or Questions:

If you ever have any questions about the study you should contact Dr. Mary Wangai, at 0722-525747. If you have questions about your rights as a research participant, or feel you have been harmed by the study, you should contact Professor Guantai, the Chair of the KNH/UoN ERC, at 2726300. You can also contact the UNITID at +254 20 272 6765 /+254 723 398 025

³ This statement will be omitted in forms for patients being interviewed during their regular clinic appointments

1.4 Kiswahili version of Consent form for Parents or guardians of Minors

Fomu ya Kibali/Idhini/Ruhusa kwa Mzazi au Mlezi wa Mtoto aliye na Saratani.

Kulinganisha Vipengele vinavyohusiana na Mgonjwa, na vinavyolingana na Uchaguzi wa Kituo cha Matibabu ya Saratani, Kuwe ni hapax Kenya au Nje ya nchi: Uchunguzi wa Uchunguzi wa Uchunguzi

Fomu ya kibali kwa Ushiriki wa Utafiti - Kibali kilichoandikwa

1. **Utangulizi:** Tunaomba idhini yako kushiriki katika utafiti wa utafiti kwa niaba ya mtoto wako / kata ambaye ni mdogo. Utafiti ni juu ya mambo yanayohusiana na uchaguzi wa wagonjwa wa saratani ya kituo cha matibabu; ndani ya nchi au nje ya nchi. Hata hivyo kwa kuwa wewe ni mamuzi katika kesi hii tunaomba ushiriki wako mahali pa mtoto wako / kata.

Utafiti huo unafanywa na Dr Mary Wangai, Mwanafunzi wa Chuo Kikuu katika Mbinu za Utafiti, Taasisi ya Chuo Kikuu cha Nairobi ya Tropical na Infectious Diseases. Kabla ya kuchagua kama kuruhusu mtoto wako kushiriki katika utafiti, tunataka kuelezea madhumuni, hatari na faida za utafiti huo. Ikiwa unakubaliana na mtoto wako / wila kushiriki, tutakuomba upe kibali kilichoandikwa.

2. **Kusudi la Funzo:** Tungependa kujifunza kuhusu mambo ambayo yanayoathiri uchaguzi wa wagonjwa kusafiri nje ya nchi au kubaki katika kituo cha saratani za mitaa kwa ajili ya matibabu. Tutatumia habari ili kutoa mapendekezo juu ya kuboresha mfumo wa huduma za afya nchini Kenya na kuifanya Nchi kuwa mahali ambapo watu wa nchi nyingine kutoka eneo hilo watakuja kwa ajili ya matibabu.
9. **Utaratibu:** Tunakuomba ujibu jibu la swala ambalo linawezekana kuchukua muda wa dakika 20-30 ili kukamilisha. Ina maelezo, kama aina ya saratani, inaathiri sababu za kutafuta matibabu ndani ya nchi au nje ya nchi, uchaguzi wa kituo cha afya, gharama ya huduma, na mtazamo juu ya ubora wa huduma zilizopatikana.
10. **Hatari, shida, na wasiwasi:** Hakuna hatari ya kimwili inayotarajiwa kwako kama mtu kwa ushiriki wako katika utafiti. Maswali yatakuwa ya kweli katika asili. Huna budi kujibu swali lolote linalofanya usijisikie. Unaweza kuomba kusitisha mahojiano wakati wowote ikiwa hutaki kushiriki tena.
11. **Mbadala ya Kushiriki:** Hakuna masomo mengine mbadala ya hali sawa ambayo unaweza kushiriki katika wakati wa sasa.
12. **Faida za kushiriki katika utafiti:** Huwezi kufaidika moja kwa moja na kushiriki katika utafiti. Hata hivyo, mchango wako utathaminiwa sana na kutusaidia kufanya mapendekezo ya kuimarisha mifumo ya afya ya Nchi.

13. **Taarifa nyingine:** Malipo ya malipo: Huwezi kupokea malipo yoyote kwa muda na jitihada zako ikiwa unashiriki katika utafiti huu. Hata hivyo kuna malipo ya usafiri wa KES 500 / - kwa wale ambao watakuja kuhojiwa kwa ajili ya utafiti huo⁴.
14. **Usiri wa Taarifa ya Utafiti:** Takwimu zilizokusanywa zitafanyika kwa ujasiri thabiti na timu ya utafiti na kuhifadhiwa kikamilifu katika baraza la mawaziri na kufungiwa katika ofisi za Wachunguzi wakuu au wa statistician (wakati wa uchambuzi). Baadaye fomu zitaangamizwa Desemba 2022. Data haitatumiwa kwa madhumuni mengine yoyote isipokuwa Utafiti.

Matatizo au Maswali:

Ikiwa una maswali yoyote juu ya utafiti unapaswa kuwasiliana na Dr Mary Wangai, kwa nambari **0722-525747**. Ikiwa una maswali juu ya haki zako kama mshiriki wa utafiti, au unajisikia umeharibiwa na utafiti, unapaswa kuwasiliana na Profesa Guantai, Mwenyekiti wa **KNH / UoN ERC**, kwa nambari **2726300**. Unaweza pia kuwasiliana na **UNITID** kwa nambari **+254 20 272 6765 / + 254 723 398 025**.

1.4 Certificate of Consent

1.4.1 Certificate of Consent- English Version

CERTIFICATE OF CONSENT (THIS SECTION IS MANDATORY)

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily for my child to be a participant in this study. If I have questions later on about the research I can ask the investigator below.

Signature of Study Participant _____ Date _____

Name of Study Participant _____

Witness (Principal Investigator or Research Assistant) _____

If illiterate,

Print name of witness _____

Thumbprint of participant

Signature of witness _____

Date _____



Declaration statement by the researcher/person taking consent

I confirm that the study participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

⁴ This statement will be omitted in forms for patients being interviewed during their regular clinic appointments

Print Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____

For further clarification, kindly contact the Principal Investigator: Dr Mary Wangai
P.O. Box 62610 -00200
Nairobi, Kenya.
Tel: 0722 525 747

Affiliated Institutions:

**University of Nairobi
Institute of Tropical and
Infectious Diseases**

P O Box 19676 Code 00202
Nairobi
Tel: +254 20 272 6765 /+254 723
398 025
Fax: +254 20 272 6626
Email: unitid@uonbi.ac.ke

KNH/UON-ERC

Tel: 2726300-9
Email:
uonknh_erc@uonbi.ac.ke
Website:
http://erc.uonbi.ac.ke

**Kenyatta National
Hospital**

P.O Box 20723-00202,
NAIROBI.
Tel. 020-2726300-9
Telegrams: MEDSUP,
Nairobi

**Texas Cancer Centre
Mbagathi Way Nairobi
Nairobi, Kenya**

www.texascancercentre.co.ke
Tel.: +254 716 279 632.
Email:
support@texascancercentre.co.ke

1.4.2 Certificate of Consent- Kiswahili Version

Hati ya kibali kwa Mzazi au Mlezi wa Mtoto aliye na Saratani.

HATI YA KIBALI (SEHEMU HII NI LAZIMA)

Nimesoma taarifa iliyotangulia, au imesomezwa. Nimekuwa na fursa ya kuuliza maswali kuhusu hilo na maswali yoyote niliyoulizwa yamejibiwa kwa kuridhika kwangu. Ninakubali kwa hiari kwa mtoto wangu kuwa mshiriki katika utafiti huu. Ikiwa nina maswali baadaye kuhusu utafiti ninaweza kumwuliza mtafiti hapa chini.

Sahihi ya Mshiriki wa Utafiti _____ Tarehe _____

Jina la Mshiriki wa Utafiti _____

Shahidi (Mpelelezi Mkuu au Msaidizi wa Utafiti) _____

Kama wasio na kusoma,

Jina la uchapishaji _____ Thumbprint ya mshiriki

Saini ya shahidi _____ Tarehe _____



Taarifa ya tamko na mtafiti / mtu kuchukua idhini

Ninathibitisha kwamba mshiriki wa utafiti alitolewa fursa ya kuuliza maswali kuhusu utafiti huo,

na maswali yote aliyoulizwa na mshiriki amejibu kwa usahihi na kwa uwezo wangu mkubwa. Ninathibitisha kwamba mtu huyo hakujazimishwa kutoa idhini, na ridhaa imetolewa kwa uhuru na kwa hiari.

Jina la Magazeti la Mtafiti / mtu anayekubali _____
Saini ya Mtafiti / mtu anayekubaliana _____

Tarehe _____

Kwa ufafanuzi zaidi, wasiliana kwa huruma Mtafiti Mkuu: Dr Mary Wangai
P.O. Sanduku la 62610 -00200
Nairobi, Kenya.
Simu: 0722 525 747

Taasisi zilizoshirikishwa:

Chuo Kikuu cha Nairobi
Taasisi ya Magonjwa ya
Tiba na Maambukizi

P O Box 19676 Kanuni
00202
Nairobi
Simu: +254 20 272 6765 / +
254 723 398 025
Faksi: +254 20 272 6626
Barua pepe:
unitid@uonbi.ac.ke

KNH/UON-ERC

Simu: 2726300-9
Barua pepe:
uonknh_erc@uonbi.ac.
ke
Tovuti:
<http://erc.uonbi.ac.ke>

**Kenyatta National
Hospital**

P.O Sanduku 20723-
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Simu. 020-2726300-9
Telegrams: MEDSUP,
Nairobi




**Kituo cha Kansa ya
Texas**
Mbagathi Njia
Nairobi, Kenya

www.texascancercentre.co.ke
Simu: +254 716 279
632.
Barua pepe:
support@texascancerentre.co.ke

Appendix 2: Study tools

2.1 Screening Tools

2.1.1. Screening Tool in English

CANCER TREATMENT QUESTIONNAIRE- SCREENING TOOL	
SITE: _____	
Name of Research Assistant _____	
Instructions: Please tick all the responses that apply to you and fill in the answers where it applies.	
GENERAL INFORMATION	
1	Date of form completion  Patient Index No: _____ dd mmm yyyy
CANCER TREATMENT INFORMATION	
2	Does the patient have cancer? <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂
3	What type of Cancer does the patient have? _____
4	What cancer treatment did they receive during the last session? <input type="checkbox"/> First cycle/round - ₁ <input type="checkbox"/> Other Subsequent cycle/rounds - ₂ (END THE SCREENING)
5	Which country did they receive the first cycle/round of cancer treatment? _____
6	When did they receive the first cycle/round of treatment?  dd mmm yyyy
STUDY PARTICIPATION	
7	Briefly introduce the study. Is the patient willing to participate in the study? <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ (END) NB: CONTINUE IF PATIENT IS SELECTED BY RANDOM SAMPLING
8	Date of Scheduled Interview appointment  dd mmm yyyy 8.1 Time: _____ : _____ (24 hour clock)
Record and file identification information will be stored separately from completed questionnaire.	

2.1.2 Screening Tool in Kiswahili

DODOSO LA MATIBABU YA UGONJWA WA SARATANI- CHOMBO CHA UCHUNGUZI ENEO:																						
<p>Jina la Msaidizi wa Utafiti _____</p> <p>Maelekezo: Tafadhali jibu majibu yote yanayotumika kwako na kujaza majibu ambapo inatumika.</p>																						
TAARIFA ZA JUMLA																						
1	<p>Tarehe ya kujaza fomu</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> </tr> <tr> <td style="text-align: center;">dd</td> <td style="text-align: center;">mmm</td> <td colspan="6"></td> <td style="text-align: center;">yyyy</td> </tr> </table> <p>Nambari ya fomu ya Mgonjwa: _____</p>											dd	mmm							yyyy		
dd	mmm							yyyy														
HABARI KUHUSU MATIBABU YA UGONJWA WA SARATANI																						
2	Je, mgonjwa ana saratani? <input type="checkbox"/> Ndio. ₁ <input type="checkbox"/> Hapana. ₂																					
3	Ni aina gani ya Saratani ambayo mgonjwa anayo ? _____																					
4	<p>Ni matibabu gani ya Saratani waliyopata wakati wa kikao cha mwisho ?</p> <p><input type="checkbox"/> Mzunguko wa kwanza/mzunguko .₁ <input type="checkbox"/> mzunguko mwingine/ mzunguko wa pili .₂ (MWISHO WA UCHUNGUZI)</p>																					
5	Wagonjwa walipokea mzunguko wa kwanza/mzunguko katika nchi ipi? _____																					
6	<p>Walipokea lini matibabu yao ya kwanza?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> </tr> <tr> <td style="text-align: center;">dd</td> <td style="text-align: center;">mmm</td> <td colspan="6"></td> <td style="text-align: center;">yyyy</td> </tr> </table>											dd	mmm							yyyy		
dd	mmm							yyyy														
USHIRIKI KATIKA UTAFITI																						
7	<p>Eleza kwa ufupi utafiti huu. Je! Mgonjwa huyo yuko tayari kushiriki katika utafiti?</p> <p><input type="checkbox"/> Ndio.₁ <input type="checkbox"/> Hapana.₂ (END)</p> <p>Kumbuka: Endelea kama mgonjwa amechaguliwa kwa sampuli ya random</p>																					
8	<p>Tarehe ya uteuzi wa mahojiano uliopangwa</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> <td style="border: 1px solid black; width: 10%; height: 20px;"></td> </tr> <tr> <td colspan="6"></td> <td style="text-align: center;">dd</td> <td style="text-align: center;">mmm</td> <td colspan="2"></td> <td style="text-align: center;">yyyy</td> </tr> </table> <p>8.1 Saa: _____ : _____ (SAA 24)</p>																	dd	mmm			yyyy
						dd	mmm			yyyy												
Taarifa ya rekodi na faili ya utambulisho itahifadhiwa tofauti na dodoso lililokamilika.																						

2.2 Study questionnaire for all sites

2.2.1 Study Questionnaire in English

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE

STUDY ID NO. _____

NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____

COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____

Instructions:

- Use **Biro Pen** and write clearly
- Please tick **all** the responses or fill in the answers where it applies.
- Legibly **print** written responses.
- Mark inside the check box (preferably a cross), Not the code.
- Do **NOT** Mark more than one response to an item unless instructed to do so.
- Click on the 'save' button at the end of each page to save the data entered.
- Any mistakes should be corrected with a single line through wrong entry. Include your initials and date on corrected answer.

Name of Interviewer _____

Was Consent Obtained or Did you give consent on email? Yes ₁ No ₂ If no, obtain / provide consent before continuing.

1 1.1. Date of form completion

dd		mmm			yyyy				

1.2 Participant Enrollment No.

--	--	--	--	--	--

2 Time of Interview **2.1** Start _____ : _____
(24 hour clock)

2.2 Finish: _____ : _____

PART B: SOCIO-DEMOGRAPHIC DATA

3 What is your date of Birth

If not known use the numbers- - 99 99 9999

dd

mm		yyyy							

4 Gender

Male₁

Female₂

6 Which County are you **currently living in (over last 1 year)?** _____

6.1 Where exactly is **Residence located?**

Urban area-₁

Rural area-₂

7 What is your **Marital Status?**

Never married- ₁

Currently married- ₂

Separated- ₃

Divorced- ₄

Widowed ₅

Living together-₆

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE

STUDY ID NO. _____

NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____

COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____

	<input type="checkbox"/> Not Applicable-7	<input type="checkbox"/> Declined to answer ⁹⁹
8	What is your the highest level of education?	
	<input type="checkbox"/> No formal schooling - 1	<input type="checkbox"/> Some primary school - 2
	<input type="checkbox"/> Primary School completed - 3	<input type="checkbox"/> Secondary School completed - 4
	<input type="checkbox"/> High school completed- 5	<input type="checkbox"/> College (middle level, certificate, diploma) completed- 6
	<input type="checkbox"/> University completed- 7	<input type="checkbox"/> Postgraduate degree- 8
	<input type="checkbox"/> Declined to answer- 99	
9	What best describes you main work (Occupation)?	
	<input type="checkbox"/> Government employee - 1	<input type="checkbox"/> Non-governmental organization - 2
	<input type="checkbox"/> Unemployed- 3	<input type="checkbox"/> Self-employed- 4
	<input type="checkbox"/> Retired-5 <input type="checkbox"/> Not Applicable-6 <input type="checkbox"/> Other. 7	9.1 Specify _____
10	How long have you been in this line of work (occupation)?	
	<input type="checkbox"/> Less than 1 month-1 <input type="checkbox"/> 1-6 months-2 <input type="checkbox"/> 7-12 months-3 <input type="checkbox"/> over 1 year-4 <input type="checkbox"/> NA-5	
11	What is your average Monthly Income in Kenya Shillings? _____	
PART C –DISEASE PROFILE		
12	What form of cancer were you diagnosed with?	
	<input type="checkbox"/> Non-Hodgkin's Lymphoma-1	<input type="checkbox"/> Colon-2
	<input type="checkbox"/> Hodgkin's Lymphoma-3	<input type="checkbox"/> Oral cavity- 4
	<input type="checkbox"/> Rectum-5	<input type="checkbox"/> Cervix- 6
	<input type="checkbox"/> Breast- 7	<input type="checkbox"/> Prostate- 8
	<input type="checkbox"/> Leukemia- 9	<input type="checkbox"/> Uterus-10
	<input type="checkbox"/> Brain- 11	<input type="checkbox"/> Esophagus -12
	<input type="checkbox"/> Bone marrow -13	<input type="checkbox"/> Pancreas 14
	<input type="checkbox"/> Liver- 15	<input type="checkbox"/> Lung -16

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE

STUDY ID NO. _____

NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____

COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____

Kaposi's Sarcoma-17 Other- 18 **12.1** Specify _____

12.2 If yes, how long ago were you diagnosed?

--	--	--	--	--	--

If you don't remember use the numbers - 99 9999

mm **yyyy**

13 Have you ever been diagnosed with **any other type chronic diseases other than cancer?**

Yes-1 No-2 (go to Q 23) Decline to answer 99 (go to Q 23)

14	Chronic Disease	Tick Yes	21. Date of diagnosis (mm/yyyy) Don't remember- 99 9999
14.1	High blood pressure disease		
14.2	Diabetes or high blood suga		
14.3	Chronic lung disease (e.g. asthma, Bronchitis)		
14.4	Obese		
14.5	Hepatitis B disease		
14.6	HIV		
14.7	Heart Disease		

15 Specify any other chronic disease you may have? _____

15.1 If yes, how long ago were you told you have **this chronic disease?**

--	--	--	--	--	--

Don't remember- 99 9999 **mm** **yyyy**

PART D: INFORMATION ON CANCER CARE

16 What is the **Cancer treatment** you underwent in the first cycle/round of treatment?

- Chemotherapy-1 Radiotherapy- 2
 Surgery-3 Bone marrow transplant- 4
 Brachytherapy – 5 Don't know-99
 Other – 7 **16.1** Specify _____

17 Did you also need to undergo a **medical tests** at the same time?

- PET Scan-1 Radiological tests-2
 Diagnostic (laboratory) tests-3 Don't know-99
 Other – 4 **17.1** Specify _____

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE

STUDY ID NO. _____

NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____

COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____

- 23.5** A local agent Yes-1 No-2
- 23.6** Overseas agent Yes-1 No-2 NA-3

24 What is the **cost** of the treatment or **medical test (s)** you received?

	Type	Unit cost (indicate currency)	Number of times	Date: dd/mm/yyyy <i>If you don't remember use the numbers- 99/ 99 /9999</i>
24.1	Cancer Treatment			
24.2	a Medical Tests			
3.	Medical Tests			
c.	Medical Tests			
d.	Medical Tests			
e.	Medical Tests			
f.	Medical Tests			
g.	Medical Tests			
h.	Medical Tests			

24.3 Total cost of Accommodation for self _____ Date: mm/yyyy _____

24.4 Total cost of Accommodation for caregiver _____ Date: mm/yyyy _____

24.5 Total cost of Travel for self _____ Date: mm/yyyy _____

24.6 Total cost of Travel for care giver _____ Date: mm/yyyy _____

PART F : PATIENT RELATED INFLUENCING FACTORS

25 What factors made you decide to choose the **HEALTH FACILITY** in which you received cancer treatment?

25.1 Lack of adequate cancer treatment services where you were before? Yes-1 No-2

25.2 Amount of time you may have had to wait before treatment? Yes-1 No-2

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE

STUDY ID NO. _____

NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____

COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____

25.3 If yes, please indicate how long you would have waited (in months) _____

25.4 Better quality of care Yes-1 No-2

25.5 Friends/Relatives Yes-1 No-2

25.6 Information from other patients who received treatment at location Yes-1 No-2

25.7 Advice from your local health care provider Yes-1 No-2

25.8 Following a Medical camp in Kenya Yes-1 No-2

25.9 Media Information sources. Yes-1 No-2

25.10 If yes, what media source influenced your decision?

Internet-1 Radio-2 TV-3 Newspaper -4 Social media -5

Other-6 **25.11** Specify _____

25.12 Cost effectiveness of treatment Yes-1 No-2 NA-3

26 What made you select the particular COUNTRY you received treatment in?

26.1 Reputation of the Country? Yes-1 No-2

26.2 Your health care provider Yes-1 No-2

26.3 Friends/ relatives Yes-1 No-2

26.4 Quality of care Yes-1 No-2

26.5 Advanced medical facilities Yes-1 No-2

26.6 Reputation for experienced health workers Yes-1 No-2

26.7 To combine treatment with business Yes-1 No-2

26.8 To combine treatment with sight-seeing Yes-1 No-2

26.9 Cost effectiveness Yes-1 No-2

26.10 Other reason **26.11** Specify _____

PART G: PERCEPTION ON EXPERIENCES OBTAINED DURING CANCER TREATMENT

27 Did your overall experience match your expectations of the treatment centre? Yes-1 No-2

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE

STUDY ID NO. _____

NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____

COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____

28 Was your movement facilitated by an individual at the institution? Yes-1 No-2
If Yes, how would rate the help?
 Very Useful-1 Useful-2 Moderate-3 Not Useful-4 Bad-5

29 During treatment did you have to be accommodated outside the health institution?
 Yes₁ No-2

30 Kindly give us your view concerning the following aspects by ticking the most appropriate answer.

		Very good	Good	Moderate	Poor	Very Poor
30.1	Reception at the institution					
30.2	Customer care					
30.3	Accommodation facilities outside the institution					
30.4	Environment of health institution					
30.5	Ease of movement within facility					
30.6	Cleanliness within health facility					
30.7	Hospital/Institution facilities					
30.8	Treatment facilities					
30.9	Diagnostic facilities					
30.10	Courtesy of hospital staff					
30.13	Timeliness of service					
30.14	Handling of patients					
30.15	Staff Willingness to help patients					
30.16	Nursing care					
30.17	Caring attitude of health worker					
30.18	Personalized attention					
30.19	Accessibility to doctor					
30.20	Ability of health workers to help you understand your disease					
30.21	Ability of health workers to help you understand required treatment/procedure/management					
30.22	Overall Quality of care received					

QUESTIONNAIRE ON CANCER PATIENTS' CHOICE OF TREATMENT CENTRE	
STUDY ID NO. _____	
NAME OF THE HEALTH FACILITY YOU RECEIVED TREATMENT: _____	
COUNTRY IN WHICH THE HEALTH FACILITY IS LOCATED _____	
31	Would you recommend treatment at your chosen Cancer Treatment Centre to others? <input type="checkbox"/> Yes ₁ <input type="checkbox"/> No ₂ <input type="checkbox"/> Not sure ₃
32	If Yes, kindly give us your reason. 32.1 Better quality of care abroad <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ 32.2 Lack of required health services in Kenya <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ 32.3 Hospitality of health staff <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ 32.4 Affordability/ cost effectiveness <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ 32.5 Timeliness of services <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ 32.6 Team work among health staff <input type="checkbox"/> Yes- ₁ <input type="checkbox"/> No- ₂ 32.7 Others 32.8 Specify _____
THANK YOU VERY MUCH FOR PARTICIPATING IN THIS SURVEY. YOUR RESPONSES WILL BE USED TO BETTER THE HEALTH SERVICES TO OTHERS	

3.2.2 Study Questionnaire in Kiswahili

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU	
NAMBARI YA KITAMBULISHO CHA UTAFITI: _____	
JINA LA KITUO: _____	
NCHI: _____	
	<p>Maelekezo:</p> <p>Maagizo:</p> <ul style="list-style-type: none"> • Tafadhali jibu majibu yote au kujaza majibu ambapo inatumika. • Tia alama ndani ya sanduku (ikiwezekana msalaba), Sio kanuni. • Usiweke alama ya majibu zaidi ya moja kwa kipengee isipokuwa kuagizwa kufanya hivyo. • Tumia kalamu ya rangi na uandike wazi. • Tafadhali jibu majibu yote au jaza majibu ambapo inatumika. • Chapisha majibu yaliyoandikwa. • Waka alama ndani ya sanduku (ikiwezekana alama ya msalaba), sio msimbo. • Usiweke alama ya majibu zaidi ya moja kwa kipengee isipokua kuagizwa kufanya hivyo. • Makosa yote yanafaa kusahihishwa kwa mstari mmoja.

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

Jina la mhojiwaji _____

Je, ulikubaliana na mhojiwa? Ndio ₁ Hapana ₂

Ikiwa hapana₂ pata kibali kabla ya kuendelea.

1 Tarehe ya kukamilika kwa fomu.

1.2 Nambari ya kijiunga kwa mshiriki.

dd	mmm	yyyy							

--	--	--	--	--	--

2 Saa ya mahojiano **2.1** Kuanza _____ : _____
(Saa 24)

2.2 Kumaliza: _____ : _____

SEHEMU YA B: DATA YA DEMOGRAFIA YA KIJAMII

3 Tarehe ya kuzaliwa

Kama hajui - 99 99 9999

dd	mm	yyyy							

4 Jinsia Kiume₁

Kike₂

6 Unaishi katika **kata gani kwa sasa (Zaidi ya mwaka mmoja)?** _____

6.1 Makazi yako yanapatikana wapi kwa hasa? Eneo la mijini-₁ Eneo la vijijini-₂

7 Hali yako ya **Ndoa?**

Hajaoa ₁

Katika ndoa- ₂

Wameachana- ₃

Kapewa talaka- ₄

Mjane ₅

Kuishi pamoja-₆

Haihusiki-₇

Kakataa kujibur₉₉

8 Je! una **kiwango gani cha juu cha elimu?**

Hakuenda shule rasmi – ₁

Hakukamilisha shule ya msingi - ₂

Shule ya msingi – ₃

Shule ya sekondari- ₄

Chuo(kiwango cha kati, cheti, diploma)- ₅

Chuo kikuu- ₆

Shahada ya uzamili – ₇

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

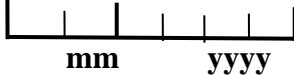
NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

	<input type="checkbox"/> Alikataa kujibu- 99 9 Ni nini kinachoelezea kazi yako kuu ? <input type="checkbox"/> Mfanyakazi wa serikali - 1 <input type="checkbox"/> Mashirika yasiyo ya serikali - 2 <input type="checkbox"/> Hana kazi- 3 <input type="checkbox"/> Amejiajiri- 4 <input type="checkbox"/> Amestaafu-5 <input type="checkbox"/> Haihusiki-6 <input type="checkbox"/> Nyingine. 7 9.1 Taja _____ 10 Umekua ukifanya kazi hii kwa mda upi? <input type="checkbox"/> Chini ya mwezi-1 <input type="checkbox"/> Miezi 1-6-2 <input type="checkbox"/> Miezi 7-12-3 <input type="checkbox"/> Zaidi ya mwaka-4 <input type="checkbox"/> Haihusiki-5 11 Eleza mapato yako ya wastani ya kila mwezi katika shilingi ya Kenya? _____
--	---

SEHEMU C – MAELEZO YA UGONJWA.

12	Ni aina gani ya Saratani uliyogunduliwa nayo? <input type="checkbox"/> Non Hogkins Lymphoma-1 <input type="checkbox"/> Matumbo-2 <input type="checkbox"/> Hodgkins Lymphoma-3 <input type="checkbox"/> Mdomo kama- 4 <input type="checkbox"/> Kipindi-5 <input type="checkbox"/> Kizuizi- 6 <input type="checkbox"/> Titi- 7 <input type="checkbox"/> Prostate- 8 <input type="checkbox"/> Leukemia- 9 <input type="checkbox"/> Mfuko wa uzazi/ uterasi-10 <input type="checkbox"/> Ubongo- 11 <input type="checkbox"/> Utoaji -12 <input type="checkbox"/> Mkeka wa mfupa-13 <input type="checkbox"/> Kongosho 14 <input type="checkbox"/> Ini- 15 <input type="checkbox"/> Mapafu -16 <input type="checkbox"/> Kaposi's Sarcoma-17 <input type="checkbox"/> Nyingine- 18 12.1 Taja _____ 12.2 Ikiwa ndio, umetambuliwa Saratani kwa muda gani?  <i>Kama hakumbuki- 99 9999</i>			
13	Je, umewahi ambukizwa na magonjwa mengine ya kawaida yasiyo ya Saratani? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2 (nenda Q 23) <input type="checkbox"/> Akikataa kujibu 99 (nenda Q 23)			
14		Ugonjwa Sugu	Changia Ndio	21. Tarehe ya uchunguzi (mm/yyyy) kama hakumbuki- 99 9999
	14.1	Shinikizo la damu		

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

	14.2	Kisukari		
	14.3	Ugonjwa wa mapaf sugu (mfano: pumu, bronchitis)		
	14.4	Kunenepa zaidi		
	14.5	Ugonjwa wa Hepatitis B disease		
	14.6	Maradhi ya Ukimwi		
	14.7	Ugonjwa wa moyo		
15	Eleza ugonjwa wowote mwingine ambao unaweza kuwa nao? _____			
15.1	Kama ndio, uliambiwa una ugonjwa huu sugu lini?			
	<i>Kama hakumbuki- 99 9999</i>			
SEHEMU YA D: HABARI KUHUSU MATIBABU YA SARATANI				
16	Je! ni tiba gani ya Saratani uliyopokea katika matibabu ya kwanza?			
	<input type="checkbox"/> Chemotherapy-1		<input type="checkbox"/> Radiotherapy- 2	
	<input type="checkbox"/> Upasuaji-3		<input type="checkbox"/> Kupandikiza mafuta ya mchanga- 4	
	<input type="checkbox"/> Brachytherapy – 5		<input type="checkbox"/> Hajui-99	
	<input type="checkbox"/> Nyingine – 7	16.1 Taja _____		
17	Je! ulihitaji kutekeleza utaratibu wowote mwingine kwa wakati huo?			
	<input type="checkbox"/> PET Scan-1		<input type="checkbox"/> Uchunguzi wa radiolojia-2	
	<input type="checkbox"/> Uchunguzi wa maabara-3		<input type="checkbox"/> Hajui-99	
	<input type="checkbox"/> Nyingine – 4	17.1 Taja _____		
18	Nani au taasisi gani ililipia matibabu yako ya saratani?			
	<input type="checkbox"/> Fedha za kujitegemea-1		<input type="checkbox"/> NHIF -2	
	<input type="checkbox"/> Kampuni ya bima ya binafsi -3		<input type="checkbox"/> Mwajiri -4	
	<input type="checkbox"/> Nyingine-5	30.1 Taja _____		<input type="checkbox"/> Alikataa kujibu -99
19	Je! wewe uliongozana na mtoaji huduma?		<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2 (nenda Q 22)
20	Ikiwa ndio, ni nani aliyesimamia gharama ya mtoaji huduma?			
	<input type="checkbox"/> Mwenyewe-1			
	<input type="checkbox"/> Wenyewe -2			
	<input type="checkbox"/> NHIF-3			

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

	<input type="checkbox"/> Kampuni ya bima-4 <input type="checkbox"/> Marafiki/ Jamaa-5 <input type="checkbox"/> Nyingine-6				
21	Ikiwa ndio, uhusiano wako na mtoa huduma ni upi?		20.1	Taja _____	
	<input type="checkbox"/> Mke/Mme- 1 <input type="checkbox"/> Mjumbe waamilia- 3	<input type="checkbox"/> Rafiki- 2 <input type="checkbox"/> Nyingine - 4	21.1	Taja_____	

SEHEMU E. KITUO CHA MATIBABU – KWA WASHIRIKI WOTE

22	Ni kituo kipi cha afya kilikuelekeza kwa matibabu ya Saratani kwa kituo unachokwenda sasa?				
	<input type="checkbox"/> Hospitali ya serikali -1 <input type="checkbox"/> Hospitali binafsi-2 <input type="checkbox"/> Kliniki ya kibinafsi-3 <input type="checkbox"/> Nyingine -4		22.1	Taja _____	
	22.2 Je! Kituo kilichokuelekeza kwa kituo cha matibabu ya Saratani kiko katika kata gani? _____				
23	Ni nani aliyekusaidia kupanga huduma yako ya matibabu ya Saratani?				
	23.1 Mtoa huduma wako wa afya wa mtaa	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2		
	23.2 Moja kwa moja na kituo unachopokea matibabu	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2		
	23.3 Mwenyewe	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2		
	23.4 Marafiki na Jamaa	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2		
	23.5 Wakala wa mtaa	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2		
	23.6 Wakala wa ng'ambo	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2	<input type="checkbox"/> Haihusiki-3	
24	Ni gharama gani ya matibabu au utaratibu uliopokea?				
	(kwa dola za matibabu zinazotolewa nje ya nchi na katika shilingi ya Kenya kwa ajili ya matibabu zinazotolewa nchini Kenya.)				
	24.1 Gharama ya Matibabu _____	Tarehe			
	24.2 Gharama ya Utaratibu _____	Tarehe			

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

	24.3 Gharama ya Malazi _____ Tarehe
	24.4 Gharama ya Safari _____ Tarehe
SEHEMU YA F : MAMBO YANAYOMSHAWISHI MGONJWA	
25	<p>Ni mambo gani yaliyokufanya uamue kuchagua KITUO CHA AFYA ambacho umepata matibabu ya Saratani?</p> <p>25.1 Ukosefu wa huduma za Saratani za kutosha ambapo ulikua hapo awali? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.2 Kiasi cha muda ungeweza kusubiri kabla ya matibabu? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.3 Kama ndio, tafadhali taja muda gani ungekua umesubiri (kwa miezi) _____</p> <p>25.4 Ubora bora wa huduma? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.5 Marafiki/ jamaa? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.6 Taarifa kutoka kwa wagonjwa wengine ambao walipata matibabu kwa eneo? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.7 Ushauri kutoka kwa mtoa huduma wako wa afya? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.8 Kufuatili kambi ya matibabu nchini Kenya? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.9 Vyanzo vya habari? <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>25.10 Ikiwa ndio, ni chanzo gani cha vyombo vya habari kilichoshawishi uamuzi wako? <input type="checkbox"/> Mtandao-1 <input type="checkbox"/> Redio-2 <input type="checkbox"/> Televisheni-3 <input type="checkbox"/> Gazeti -4 <input type="checkbox"/> Mtandao wa kijamii -5 <input type="checkbox"/> Nyingine-6</p> <p>25.11 Eleza _____</p> <p>25.12 Ufanisi wa gharama ya matibabu <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2 <input type="checkbox"/> Haijikusishi-4</p>
26	<p>Ni nini kilichokufanya uchague NCHI uliyopata matibabu?</p> <p>26.1 Sifa ya nchi <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>26.2 Mtoa huduma wako <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>26.3 Marafiki/Jamaa <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>26.4 Ubora wa huduma <input type="checkbox"/> Ndio-1 <input type="checkbox"/> Hapana-2</p>

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

	<p>26.5 Vifaa vya matibabu vya juu <input type="checkbox"/>Ndio-1 <input type="checkbox"/>Hapana-2</p> <p>26.6 Sifa kwa wafanyikazi wenye ujuzi wa afya <input type="checkbox"/>Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>26.7 Kuchanganya matibabu na biashara <input type="checkbox"/>Ndio-1 <input type="checkbox"/> Hapana-2</p> <p>26.8 Kuchanganya matibabu na matembezi <input type="checkbox"/>Ndio-1 <input type="checkbox"/>Hapana-2</p> <p>26.9 Ufanisi wa gharama <input type="checkbox"/> Ndio-1 <input type="checkbox"/>Hapana-2</p> <p>26.10 Sababu nyingine 26.11 Eleza _____</p>
SEHEMU YA G: MTAZAMO JUU YA UZOEFU ULIOPATIKANA WAKATI WA MATIBABU YA SARATANI	
27	<p>Je! Uzoefu wako kwa jumla umefanana na matarajio yako ya kituo cha matibabu? <input type="checkbox"/> Ndio₁ <input type="checkbox"/>Hapana-₂</p>
28	<p>Je! Harakati yako iliwezesha na mtu binafsi katika taasisi? <input type="checkbox"/>Ndio-1 <input type="checkbox"/>Hapana-2 Ikiwa ndio, ingekua kiwango gani cha usaidizi? <input type="checkbox"/>Muhimu sana-₁ <input type="checkbox"/> Muhimu-₂ <input type="checkbox"/> Wastani-₃ <input type="checkbox"/>Sio muhimu-₄ <input type="checkbox"/>Mbaya-₅</p>
29	<p>Wakati wa matibabu ulipaswa kuishi nje ya taasisi ya afya? <input type="checkbox"/> Ndio₁ <input type="checkbox"/> Hapana-₂</p>

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

30	Tafadhali tupe mtazamo wako kwa mambo yafwatayo kwa kuandika jibu sahihi zaidi.						
			Vizuri sana	Vizuri	Wastani	Mbaya	Mbaya sana
	30.1	Mapokezi katika taasisi					
	30.2	Huduma ya wateja					
	30.3	Vituo vya makazi kwenye taasisi au nje ya taasisi					
	30.4	Mazingira ya taasisi ya afya					
	30.5	Urahisi wa harakati ndani ya kituo					
	30.6	Usafi ndani ya kituo cha afya					
	30.7	Vifaa vya hospitalini/ taasisi					
	30.8	Vufaa vya matibabu					
	30.9	Vifaa vya uchunguzi					
	30.10	Kwa heshima ya wafanyakazi wa hospitalini					
	30.13	Ukamilifu wa huduma					
	30.14	Kusimamia wagonjwa					
	30.15	Utumishi wa wafanyakazi kusaidia wagonjwa					
	30.16	Huduma ya uuguzi					
	30.17	Msimamo wa kutunza mfanyakazi wa afya					
	30.18	Taadhari ya kibinafsi					
	30.19	Upatikanaji wa daktari					
	30.20	Uwezo wa wafanyikazi wa afya kukusaidia kuelewa ugonjwa wako					
	30.21	Uwezo wa wafanyakazi wa afya kukusaidia kuelewa matibabu/ utaratibu/ usimamizi unaohitajika					
	30.22	Ubora wa huduma uliyopokea					
31	Je! Ugependekeza matibabu katika kituo chako cha matibabu ya Saratani kwa watu wengine? <input type="checkbox"/> Ndio ₁ <input type="checkbox"/> Hapana ₂ <input type="checkbox"/> Hana uhakika ₃						
32	Ikiwa ndio, tafadhali toa sababu .						
	32.1	Ubora bora wa huduma nje ya nchi	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2			
	32.2	Ukosefu wa huduma za afya zinazohitajika nchini Kenya	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2			

DODOSO LA WAGONJWA WA SARATANI NA CHAGUO LAO LA KITUO CHA MATIBABU

NAMBARI YA KITAMBULISHO CHA UTAFITI: _____

JINA LA KITUO: _____

NCHI: _____

32.3 Upokeaji wa watumishi wa afya	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana-2
32.4 Ufanisi/ Gharama ya ufanisi	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana -2
32.5 Ukamilifu wa huduma	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana -2
32.6 Kazi ya pamoja kati ya wafanyakazi wa afya	<input type="checkbox"/> Ndio-1	<input type="checkbox"/> Hapana -2
32.7 Mengine _____		
32.8 Eleza _____		

**ASANTE SANA KWA KUSHIRIKI KATIKA UTAFITI HUU.
MAJIBU YAKO YATATUMIKA KUBORESHA HUDUMA ZA AFYA KWA
WENGINE.**

Appendix 3: Ethics and Research Committee Approval Letters

3.1 KNH-ERC Research Approval Initial Letter



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19675 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355



KNH-UoN ERC
Email: uoerknh_erc@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



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

Ref: KNH-ERC/A/63

14th February, 2018

Dr. Mary Wangai
Reg.No.W61/88242/2016
Institute of Tropical and Infectious Diseases (UNITID)
College of Health Sciences
University of Nairobi

Dear Dr. Wangai

RESEARCH PROPOSAL: "COMPARING PATIENT RELATED FACTORS ASSOCIATED WITH CHOICE OF CANCER TREATMENT CENTER, LOCALLY IN KENYA OR ABROAD: A CASE CONTROL STUDY" (P10/01/2018)

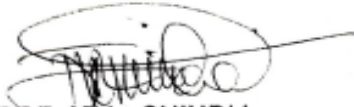
This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above revised proposal. The approval period is from 14th February 2018 – 13th February 2019.

This approval is subject to compliance with the following requirements:

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

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

Yours sincerely,



PROF. M. L. CHINDIA
SECRETARY, KNH-UoN ERC

- c.c. The Principal, College of Health Sciences, UoN
 The Deputy Director, CS, KNH
 The Chairperson, KNH-UON ERC
 The Assistant Director, Health Information, KNH
 The Director, UNITID, UoN
 Supervisor: Dr. John Kinuthia, KNH Research & Programs



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Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726306-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/ Mod&SAE/283

August 30, 2018

Dr. Mary Wangai
W61/88242/2016
UNITID
College of Health Sciences
University of Nairobi

Dear Dr. Wangai

Re: Approval of modifications – study titled “Comparing patient related factors associated with choice of Cancer Treatment Center, locally in Kenya or Abroad: A case control study (P10/01/2018)”

Your communication dated August 3, 2018 refers.

The KNH-UoN ERC has reviewed and **approved** the following modifications:

1. Permission to access telephone and email contacts of the potential study participants from the Ministry of Health records subject to declaration by the Principal investigator that these personal contact details will not be used for any other purpose apart from this specific research.
2. Modification in the consenting and interviewing approaches to provide for options hence enabling the potential study participant to choose the most preferred option. It is noted that four (4) options have been provided and all are acceptable to the KNH-UoN ERC.

All these changes are reflected in the revised proposal and are acceptable.

The revised study tools are hereby endorsed and stamped for use.

Yours sincerely,

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

c.c. The Principal, College of Health Sciences, UoN
The Director CS, KNH
The Chair, KNH-UON ERC